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Effects of 4 X 4 Block Scheduling on Student Discipline, Faculty Collegiality, and Obstacles to Teaching in Louisiana High Schools.

Mary Helen smith Mccoy

Louisiana State University and Agricultural & Mechanical College

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EFFECTS OF 4X4 BLOCK SCHEDULING
ON STUDENT DISCIPLINE, FACULTY COLLEGIALITY,
AND OBSTACLES TO TEACHING
IN LOUISIANA HIGH SCHOOLS

A Dissertation
Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Educational Leadership,
Research, and Counseling

by
Mary Helen Smith McCoy
B.S., Louisiana State University, 1964
M.Ed., Louisiana State University, 1978
December 1999

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In memory of my mother,

Genevieve Kearney Smith,

a dedicated professional educator,

my first and most admired teacher
ACKNOWLEDGMENTS

I have received considerable support throughout this ambitious task. I am grateful to have had a year in residence to devote to my dissertation. This was made possible through the generosity of the Delta Kappa Gamma Society International, which extended the Eunah Temple Holden Scholarship, and Louisiana State University, which provided a graduate assistantship. I also thank Delta Kappa Gamma members Beth Dawson, who encouraged me to apply for a scholarship, and Cindy Guidroz and Myrna Tuminello, who completed scholarship paperwork on my behalf.

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ABSTRACT

During the last decade, the allocation of time emerged as an important reform initiative in secondary schools. For nearly a century, secondary school students attended approximately six to seven classes daily. In the early 1990s, more flexible scheduling configurations were proposed, including block scheduling. One block scheduling format, known as 4X4, allows students to attend four classes daily for 90-minute blocks of time. Block scheduling advocates claimed benefits for students, teachers, instructional innovation, and school climate, but provided little empirical base for these claims.

The present study examined the effects of 4X4 block scheduling on four school climate variables: student discipline, faculty collegiality, time-related obstacles, and student-related obstacles. There were 21 high schools in the sample, evenly divided into three groups. One group had 3 or more years experience with block scheduling; the second group had 2 years experience with block scheduling; and the third group used the traditional six- to seven-period a day schedule.

The study utilized a mixed methodology. Survey, observational, and interview data were collected in 21 schools during Phase I of the study. Phase II utilized teacher interviews, observations, and archival data in a case study of two schools within the same group.

Five main findings emerged. First, the main effect for group type on overall climate was significant. Second, the groups differed significantly on
time-related obstacles to teaching, providing empirical evidence for time management claims in the literature. Third, groups did not significantly differ on student discipline, faculty collegiality, and student-related obstacles. Fourth, leadership emerged from interviews as a significant factor in shaping high school climate. Finally, there were important differences among schools within groups, indicating that school contexts are unique.

Ancillary findings pointed to absenteeism and tardiness as the most pervasive student discipline concerns across groups, and to a linkage of faculty collegiality with communications and staff development. Teachers reported that excessive paperwork, student apathy, and poor student work ethic were impediments to teaching. The effectiveness of block scheduling was boosted by strong leadership, instructional focus, staff development, communications, and the elimination of barriers to goal attainment.
CHAPTER ONE: INTRODUCTION

Eleven years ago, a small booklet, *A Nation at Risk*, launched one of the great reform movements in American public life. It changed the terms of the education debate by urging education leaders to look beyond the details of schooling to three big issues: time, content, and expectations. (Prisoners of Time, 1994, p. 44)

When the National Commission on Excellence in Education released its 1983 report, *A Nation at Risk*, the criticism of American education was severe (Carroll, 1990) and the impact powerful. The report suggested a vision for America that was far beyond the repair of public education, focusing instead on a total rebuilding of the nation's system of learning (Fullan, 1991). Within a few short years, there were nationwide mandates for system-wide change (Carnegie Task Force *A Nation Prepared*, 1986; Sizer, 1986). This “reworking of the basic fabric of schooling, or a restructuring (rebuilding, reinvention, reformation, revolution, rethinking, or transformation) of the educational enterprise” (Murphy, 1991, p. ix) became known in America simply as restructuring.

The restructuring effort began in earnest in the mid 1980s (Murphy, 1991), broadly aimed at changing the entire American learning experience in terms of teacher work conditions, the learning process, and basic school operations (Fallon, 1995). Terms such as “school-based management” and “collaborative work cultures” emerged and became commonplace (Fullan, 1991). Teachers took on new roles as mentors, coaches (Sizer, 1986), and decision makers; and multiple innovations were integrated into practice.
(Murphy, 1991). The hallmark of restructuring became imaginative thinking, coupled with the recognition that individual school contexts are unique.

In *A Nation Prepared* (1986), the Carnegie Task Force challenged U.S. educators to envision a Utopian school of the future, marked by a productive atmosphere where work was valued, where all students could succeed. The themes of student engagement, teacher decision-making, critical thinking, and cooperative effort permeated the instructional process.

An innovative German school, which preceded U.S. restructuring efforts, demonstrated that average students could achieve in conditions fostering academic success (*The Remarkable Impact*, 1988). With curricular and instructional decision making vested in teachers, approaches such as flexible scheduling, cooperative learning, peer tutoring, and team teaching were used to meet both interpersonal and academic needs of a diverse student body. The creative German model inspired U.S. educators to think beyond the restrictive boundaries of America's outdated system (Murphy, 1991).

The issue of time and learning in American schools was not seriously addressed until 1991 when Congress appointed the National Commission on Time and Learning. Examining conditions at home and abroad, the commission noted that over the brief period of one generation, American life profoundly changed, presenting immense challenges to public education. Family structures disintegrated. Of the 53 million women in the U.S.
workforce by 1991, almost 21 million had children under 17 years of age (Prisoners of Time, 1994). Increasing societal diversity resulted in growing numbers of non-English-speaking and minority children in public schools. Income inequality widened, and technology dominated a workplace in which the "have nots" increasingly could not find and keep work. Combined with escalating crime rates, particularly in inner cities, these conditions produced in the 1990s anxious children who daily brought many problems with them to school. The school became a haven for some children, and a place where time well used could impact society (Prisoners of Time, 1994).

Studying the education systems of France, Germany, and Japan as a basis of comparison, the Commission discovered that students in those countries spent more than twice as much time as American students in core academic instruction. The Commission concluded that education abroad revolved around high expectations, with protected and well-utilized academic time. "Foreign schools understand that effective learning depends on freeing schools, teachers, and students from the bonds of time" (Prisoners of Time, 1994, p. 27).

Based on an investigation focused mainly on student learning, the National Commission on Time and Learning issued Prisoners of Time (1994), a scathing indictment of U.S. high school education in general, and high school scheduling in particular, condemning the rigid high school scheduling as an impediment to learning. The Commission concluded that students in today's schools have simply had to learn what they could in the
time made available. Rather than structuring time around learning, American high schools structured learning around time (Prisoners of Time, 1994).

Throughout the 20th century, the structure of the traditional high school schedule basically remained the same, despite significant global changes (Prisoners of Time, 1994). The traditional, single-period daily schedule dates back to 1892, when the National Education Association Committee of Ten urged high schools to concentrate student work in five or six academic areas during each high school year (Canady & Rettig, 1995a). It also stemmed from the early twentieth century Carnegie Commission's development of the Carnegie "Unit," which standardized the measurement of one high school unit of credit at 120 instructional hours (Carroll, 1990).

In a typical traditional schedule, a 420-minute school day (Canady & Rettig, 1995a) is divided into seven class periods of equal duration—usually 50 minutes, along with a home room and a lunch period (Kruse & Kruse, 1995). Students report to home room, change classes (transition) six or seven times, and report to as many as seven different teachers in a school day (Canady & Rettig, 1995a). Teachers are allowed one 50-minute preparation period and instruct six classes of approximately 25 to 30 students each, for a total student “load” of 150 to 180 students throughout the school year (Prisoners of Time, 1994).

Compared to a traditional schedule, block scheduling divides time in a school day and year to allow classes to meet for a longer daily period of
time (a block), but for fewer days during the school year (Carroll, 1990; Kramer, 1997a). Many variations of block scheduling are discussed in chapter 2. The following explanation concentrates on the two most popular formats, the alternate day block schedule and the 4X4 block schedule (Kramer, 1996).

In the most common form of alternating (or "A-B") block schedule, students and teachers meet their classes every other day rather than daily. Classes are usually held as extended blocks of time, but may meet at different times of the day on a rotating basis (Canady & Rettig, 1995a). An alternate day schedule typically consists of eight courses meeting 80 to 90 minutes (a block) every other day for the entire year (Kramer, 1996). Four classes meet one day, with the other four classes meeting the next school day. This pattern repeats throughout the 180-day school year, providing an equal number of day A and day B occurrences, in spite of the number of school days in a given week or the number of school holidays (Canady & Rettig, 1995a; Kramer, 1996). The alternating model has endless variations. A detailed discussion of the three most common configurations is provided in chapter 2.

Semestered, or 4X4 block scheduling, is the single most popular block scheduling model (Kramer, 1997a), and the model with which the present study is concerned. A course that formerly was one year long (180 days) is completed in a 90-day semester. Both students and teachers have fewer classes at one time (Carroll, 1990). In the 4X4 scheduling format, a student
enrolls in four classes the first semester, and then enrolls in four new classes the second semester, hence the name "4X4." The duration of each class (a block) is 90 minutes. By the end of first semester, also the midpoint of the school year, the student receives one high school unit of credit for each course successfully completed, and then enrolls in four new courses for the next semester. Instructors teach classes during three blocks and have one 90-minute preparation period. With each block during both semesters having a student enrollment of approximately 25 to 30 students, a teacher's total daily student load per semester is 75 to 90 students. At mid-year, teachers have new students in three new blocked classes. A more thorough discussion of 4X4 block scheduling is provided in chapter 2.

The schedule is a structural component used in high schools to organize curriculum and its delivery, and to control student interactions. As a time management tool, the schedule can affect programs positively or negatively, enabling programs to be realized or restrained. In other words, the schedule can either be a force for innovation, or a constraint against innovation (Pisapia & Westfall, 1997).

Redesigned high school scheduling is a part of the restructuring effort in America, with proponents who claimed a reorganization of time could provide benefits to both students and school professionals (Canady & Rettig, 1995a; Sizer, 1986). In a comprehensive book on restructuring, Murphy (1991) spoke of changes in scheduling as part of restructuring school delivery systems, and recognized less regimented scheduling as a way to
reduce isolation since teachers and students spend longer periods of class time together. By underscoring human relationships in schools, less structured scheduling suggests a "fundamental reconceptualization of school climate—a shift from an emphasis on its physical factors and toward a focus on its human elements" (Murphy, 1991, p. 63). Sizer (1984) also connected longer instructional time formats with personalization or humanization of the organizational climate, claiming the longer formats were a powerful tool in attacking the problem of student disengagement from academic and intellectual pursuits.

Block scheduling proponents have claimed it has multiple benefits for everyone in a school environment (Canady & Rettig, 1995a; Carroll, 1990). Over the years, to efficiently utilize instructional time in short daily class periods, most high school teachers used the lecture method, hardly an exciting method for young learners (Murphy, 1991). By providing a longer time format, block scheduling can allow for greater variety in instructional strategies (Carroll, 1990; Cawelti, 1994), which in turn can enhance instructional effectiveness (Canady & Rettig, 1995a). At the same time, the demands created by increased variety in instructional strategies can lead a school faculty to better tap into its collective expertise, encouraging professional collaboration and collegiality (Cawelti, 1994). Furthermore, having fewer daily class periods (Carroll, 1990) can appeal to all school constituencies through a simplified, less-is-more approach to learning (Sizer, 1986), allowing a better focus for most students (Canady & Rettig,
1995a). This is particularly beneficial for those teenagers who tend to be hyperactive and disorganized.

There are other claimed benefits. Block scheduling decreases the transition time (Cawelti, 1994) spent in moving from class to class during the school day, allowing this time to be utilized as increased instructional time (Davis-Wiley, George, & Cozart, 1995). Fewer class changes during the day can also foster a better academic environment (Edwards, 1995; Reid, 1996) by reducing curriculum fragmentation (Canady & Rettig, 1993) and reducing discipline problems (Canady & Rettig, 1995a). Smaller classes and more interactive learning (Queen, Algozzine, & Eaddy, 1997) can foster a more personalized school climate (Fallon, 1995), with less isolation and better relationships for both teachers and students (Kruse & Kruse, 1995; Irmsher, 1996). This not only improves student attitudes toward learning, but also discourages behavior problems, which often decrease when students feel more invested in relationships (Canady & Rettig, 1995a).

Block scheduling has been viewed as an initiative which can facilitate student learning and achievement (Edwards, 1995), encourage instructional variety (Carroll, 1990), support teacher professionalism (Cawelti, 1994), discourage student misbehavior (Canady & Rettig, 1995a), and increase personalization effects in the school environment (Kruse & Kruse, 1995). The perspectives framing block scheduling particularly support positive changes in two areas: school climate, and academics (Kramer, 1997a).
Statement of the Problem

This study examines the school-level impact of restructuring, focusing on 4X4 block scheduling and its influence on school climate. During the last 10 years, the increasing use of block scheduling has made it more the rule than the exception, prompting Canady and Rettig (1995a) to estimate that by 1995 a block scheduling format had been implemented in approximately 50% of America's high schools.

In Louisiana, the number of public high schools in the block scheduling format has rapidly increased. Louisiana Department of Education (LDE) data showed that three public high schools began block scheduling in school year (SY) 1995-96, and during the next two years, another 50 schools implemented the scheduling format. Thus, of the over 400 public Louisiana high schools, 53 were in some form of block scheduling by SY 1997-98.

Although much is claimed, little is empirically known about the effects of 4X4 block scheduling in successive years at the high school level. Many of the studies located by this researcher lacked methodological rigor, leading proponents to prematurely claim positive effects, often after the first year of implementation. There are studies which failed to clearly specify procedures or instrumentation used, or which used imprecise language in reporting results. Many literature pieces were anecdotal. The present study is intended to provide insight not only into the effects of block scheduling on
school climate, but also into the effects of block scheduling in successive years.

Perspectives Framing the Study

Educational literature points to the elements of climate, scheduling, and teaching method as highly interrelated in overall instructional programs (Canady & Rettig, 1995a; Hackmann, 1995). As compared to a traditional schedule, block scheduling classes meet for a longer period of time each day (a block) but for a fewer number of days during the school year (Carroll, 1990; Kramer, 1997a). According to proponents, block scheduling provides more interactive learning through longer class periods (Queen et al., 1997), which fosters a more personalized climate (Fallon, 1995), with less isolation for students and teachers (Kruse & Kruse, 1995).

Halpin and Croft (1962) likened the climate of a school to the personality of an individual, with school climate depicted as a lasting quality of a school environment that is experienced by participants and affects their behavior. Climate is usually defined by using participants' collective perceptions of behavior (Hoy & Miskel, 1996). A multidimensional view of climate was offered by Tagiuri (1968), who envisioned school as a place of social relationships, and viewed student behavior as a function of school social processes. Using Tagiuri's (1968) broad-based theory, which examines how these relationships contribute toward meeting educational goals, an entire school can be examined by means of four dimensions: (1) Ecology, or physical and material aspects; (2) Milieu, or
background aspects regarding individuals and groups (i.e., SES, ability, race); (3) Social System, or relationships of persons and groups; and (4) Culture, or social aspects involving belief systems, values, executive structures, and meaning (Anderson, 1982; Miskel & Ogawa, 1988; Tagiuri, 1968). This and other views of climate are more fully discussed in chapter 2 of this proposal.

Student discipline, faculty collegiality, and obstacles to teaching (Taylor & Tashakkori, 1995) are the three climate variables used for this study. Proponents of block scheduling assert that the number of student discipline incidents will decrease with block scheduling, since students experience fewer transitions between classes—a time when students perceive there is less supervision, and when many discipline incidents either occur, or begin and then later are acted out in the classroom (Canady & Rettig, 1995a). It is asserted that levels of professional collaboration and collegiality will grow with block scheduling, due to increased variety in teaching strategies (Cawelti, 1994), and better overall interpersonal relationships in the school environment (Sizer, 1986). Proponents also assert that obstacles to teaching will be lessened by block scheduling implementation, because students bring fewer problems with them to the classroom (Prisoners of Time, 1994). In particular, students are less stressed by time management and learning demands, due to fewer classes and to an increased emphasis on instructional variety and classroom interactivity. This helps student involvement, creativity, focus, and
academic success (Carroll, 1990). As depicted in Figure 1, this study focused on the effects of block scheduling on the three climate variables: student discipline, faculty collegiality, and obstacles to teaching.

![Research Model Diagram]

**Figure 1. The Research Model**

**Rationale for the Study**

The present study rests on the premise that block scheduling positively influences high school climate. Due to its purported advantages, block scheduling is being implemented in growing numbers of American high schools, yet research showing effects over successive years is limited. Moreover, methodological rigor is lacking, often leading proponents to prematurely claim positive effects after the first year of implementation.

The present study examined the effects of block scheduling on teacher perceptions of student discipline, faculty collegiality, and obstacles to teaching. The study utilized a matched sample design, with the context variables student body socio-economic status, school size, and community type used to match block scheduled schools with traditionally scheduled...
schools. Further, block scheduled schools were assigned to one of two categories: (a) those with 3 or more years implementation, and (b) those with 2 years implementation.

Statement of Hypotheses and Research Questions

The hypotheses are listed without discussion, as they are fully explained in chapter 3. Two research questions are also listed.

**Hypothesis 1.** Overall climate, measured by the variables *student discipline, faculty collegiality*, and *obstacles to teaching*, as reported by teachers, will be different among groups.

**Hypothesis 2.** Mean scores on the climate variable *student discipline*, as reported by teachers, will be highest for Group I high schools that have been block scheduled for three or more years, and lowest for Group III traditionally scheduled high schools.

**Hypothesis 3.** Mean scores on the climate variable *faculty collegiality*, as reported by teachers, will be highest for Group I high schools that have been block scheduled for three or more years, and lowest for Group III traditionally scheduled high schools.

**Hypothesis 4.** Mean scores on the climate variable *obstacles to teaching*, as reported by teachers, will be highest for Group I high schools that have been block scheduled for three or more years, and lowest for Group III traditionally scheduled high schools.
**Question 1.** Are there qualitative differences among Group I high schools that have been block scheduled for 3 or more years, Group II high schools that have been block scheduled for 2 years, and Group III high schools that are traditionally scheduled?

**Question 2.** What differences exist regarding the dimensions of climate between the school with the most positive teacher report of climate, and the school with the least positive teacher report of climate, provided both schools had at least 3 years involvement with block scheduling?

**Significance of the Study**

The restructuring of time in a high school is a cost-effective and easily implemented initiative (Canady & Rettig, 1995a; Kramer, 1997a). Although previous accounts in the educational literature have claimed a block scheduling and school climate link, many were anecdotal or lacked methodological rigor. Since both block scheduling and high schools are understudied areas in the educational literature, this study can make a positive contribution to the empirical research base.

**Definitions of the Variables**

The present study investigated block scheduling in public high schools in the state of Louisiana, using teacher perceptions of climate. There were three outcome variables in this study—student discipline, faculty collegiality, and obstacles to teaching (Taylor & Tashakkori, 1995). Each of these climate variables has been linked to the block scheduling framework (Canady & Rettig, 1995a; Murphy, 1991; Sizer, 1986). To adequately reflect
the complex reality of climate in high schools, the outcome variables were multi-operationalized.

For the present study, student discipline was operationally defined as class cutting, tardiness to class, absenteeism, physical conflict, verbal abuse of teachers (Taylor & Tashakkori, 1995), and general student misbehaviors.

For the present study, faculty collegiality was operationally defined as cooperative effort of staff members, reliance of staff members upon one another, shared staff beliefs about the school mission, supportive department chair, continuous professional development, and feeling among staff that school seems like a family (Taylor & Tashakkori, 1995).

For the present study, obstacles to teaching was operationally defined as students who are incapable of learning; student attitudes which reduce academic success; and interferences with the teaching process such as student drug and/or alcohol abuse, student misbehavior, and routine teacher duties (Taylor & Tashakkori, 1995).

Limitations of the Study

The present study sought to determine whether mean differences could be detected on the dependent variables among three groups of schools. Either scheduling type or number of years in block scheduling was unique to each group of schools, thus schools were nested within groups. The main group effect could be tested, but a limitation existed in that other effects could not be clearly identified as being school effects or school and
teacher interaction effects when statistical tests were conducted (Maxwell & Delaney, 1990). The error term used for all tests was schools within group.

For the present study, groups of schools were matched using the three context variables of SES, school size, and community type. The researcher recognizes, however, the uniqueness of individual school contexts. The study did not attempt to control for any other school- or district-level variables or naturally occurring phenomena, which may or may not have affected overall results.

In terms of number of teacher questionnaires returned, there was a limited response rate (less than 50%) from 4 of the 21 schools in the study, and thus an increased risk of a volunteer effect for these few schools. These four low response rates ranged from 35.4% to 48.7%. On the positive side, the limited response rate occurred evenly across the three groups, with one Group I school, two Group II schools, and one Group III school affected.

Organization of the Study

This dissertation is presented in six chapters. The first chapter gives an overview of the problem, presents the hypotheses and questions for study, and provides general background information. A thorough review of the literature is provided in chapter 2. In chapter 3, the design of the study is addressed, including the hypotheses tested, selection of the sample, instrumentation and data gathering methods used, and statistical data analysis techniques applied. Chapter 4 presents Phase I results of the study, and Chapter 5 presents Phase II results of the study. In chapter 6,
the results are analyzed in terms of the hypotheses and research questions addressed by this study.
CHAPTER TWO: REVIEW OF RELATED LITERATURE

Organization of the Present Chapter

This study examines the connection between high school schedule type and teacher perceptions of school climate. With a basic premise that block scheduling influences school climate, chapter 2 is divided into three major sections. The first section provides a review of the literature related to high school scheduling in general, and 4X4 block scheduling in particular. The second section presents a review of the literature related to organizational climate. Within the organizational climate section, the final subsection presents the three climate variables selected as outcome variables for this study, and discusses these variables relative to block scheduling. Finally, the third section provides a summary of the chapter.

Block Scheduling

How to maximize instructional effectiveness in schools has been an ongoing topic of professional dialogue. For years, the major focus was on elementary education, with most reform initiatives aimed at impacting the early years. Since the 1960s, however, criticism of America's high schools has steadily escalated. In 1983, the National Commission on Excellence in Education, although authorized to address all levels of education, focused on the poor achievement in public secondary schools in its report A Nation at Risk (Carroll, 1990). The severe indictment of secondary education was not well received by many who refused to acknowledge there were serious problems, much less those of national proportions (Carroll, 1990; Murphy,
1991). An important issue articulated in *A Nation at Risk* concerned how time was used in American high schools (Canady & Rettig, 1995a).

Following *A Nation at Risk* (1983), the Coalition of Essential Schools (Sizer, 1986) undertook its own investigation of American public schools, likewise finding secondary education in need of major changes. Among the many Coalition proposals to correct deficiencies in the high school setting were improving the use of time and increasing the opportunities for better relationships among those in a school environment (Sizer, 1986).

In 1991, Congress established a commission to study the time and learning relationship in public schools. Again, criticism was squarely aimed at secondary education in the subsequent report *Prisoners of Time* (1994). The National Commission on Time and Learning attacked the rigidity of high school scheduling, noting that despite worldwide transformation in the past 150 years, America's public education system did not change the basic use of time, but rather subordinated learning to time constraints. The censure was harsh: "Our schools and the people involved with them--students, teachers, administrators, parents, and staff--are prisoners of time, captives of the school clock and calendar" (*Prisoners of Time*, 1994, p. 5).

With student learning the main focus of its study, the Commission found that lack of time was a critical impediment to learning in modern-day schools, that students have had to simply learn what they could in the time made available. The Commission proposed that learning, not time, be reemphasized to remedy the current situation in schools: "The key to
liberating learning lies in unlocking time” (Prisoners of Time, 1994, p. 10). “Decades of school improvement efforts have foundered on a fundamental design flaw, the assumption that learning can be doled out by the clock and defined by the calendar” (p. 13). Calling the status quo a design flaw which must be fixed, the Commission encouraged the more common use of high school block scheduling.

**Scheduling: Its History**

Originally, American schools offered scheduling alternatives. The early high schools and their precursors, Latin grammar schools and academies, provided flexibility by offering courses in two, three, and four-day per week schedules (Canady & Rettig, 1995a). Since that time, high school scheduling had a more rigid nature, mainly due to two developments. First, the 1892 report of the National Education Association Committee of Ten encouraged high schools to concentrate student work in five or six academic areas during each high school year (Canady & Rettig, 1995a). Second, the Carnegie Standard (or Unit) emerged in the early 1900s as a vehicle for greater uniformity in education (Kruse & Kruse, 1995).

U.S. factory time-and-motion studies at the beginning of the 20th century, which were aimed at increased workplace efficiency, brought extensive industrial reforms to America (Kruse & Kruse, 1995). Endorsing the belief that quantity of time was directly related to efficiency (Canady & Rettig, 1995a), the Carnegie Commission developed the Carnegie Unit, which standardized the measurement of high school work based on
instructional time (Carroll, 1990). This resulted in a mechanistic educational system involving producers (teachers) and a product (learning). It was expected that a measurable result could be turned out in a set amount of time, with "seat time in a given subject area equated to completion or mastery of that subject" (Kruse & Kruse, 1995, p. 2). Canady and Rettig (1995a) and Huff (1995) emphasized the impact of the Carnegie Unit in dictating high school scheduling and curriculum organization, as did Boyer (1983):

The Carnegie Foundation proposed a standard unit to measure high school work based on time. A total of 120 hours in one subject—meeting 4 or 5 times a week, for 40 to 60 minutes, for 36 to 40 weeks each year—earns the student one "unit" of high school credit. "The Carnegie Unit" became a convenient, mechanical way to measure academic progress throughout the country. And, to this day, this bookkeeping device is the basis on which the school day, and indeed the entire curriculum is organized. And at some schools, adding up Carnegie units seems to be the main objective (p. 60).

Irmscher (1996) observed that most high school students "are still locked into the same archaic schedule that their great-grandparents experienced when they were teenagers" (p. 1). The "every-day-period high school schedule" (Canady & Rettig, 1995a), often referred to as the master or traditional schedule, basically remained unchanged since its onset, resulting in a pattern common to high school life (Carroll, 1990).

Regardless of subject, most classes were held five days per week for 40 to 60 minutes each, depending upon whether the school day was divided into six, seven, or eight daily periods (Prisoners of Time, 1994). Credit was
based on seat time measured in Carnegie Units (Prisoners of Time, 1994). Instruction was primarily lecture, efficiently aimed at the “average” student (assuming more average than low- or high-ability students in each class), and accompanied by homework, teacher questions, and student answers (Carroll, 1990). With one preparation period, instructors usually taught five or six classes a day (Carroll, 1990), and had total student enrollments of 125 to 180 students (Canady & Rettig, 1995a).

Through the years, attempts were made to move away from the traditional schedule (Pisapia & Westfall, 1997a). Some secondary schools in the 1960s and early 1970s briefly tried an innovation known as Flexible Modular Scheduling (FMS) as an appeal to individualism. Anchored in the belief that all subjects do not necessarily require the same amount of time, instructional approach, or number of students (Fletcher, 1997), FMS offered variations in class duration, format, and size to allow flexibility for lectures, labs, small or large group instruction, and even individualized assistance (O'Neil, 1995). Ironically, attempting to provide for individuality was a leading cause of the failure of FMS (Canady & Rettig, 1995a). Unscheduled student time allotted to independent study became a disciplinary concern, and teachers had difficulty in planning for variable instructional time, which brought objections to teacher methods and behaviors. Implementing FMS also posed substantial administrative headaches (Pisapia & Westfall, 1997a). Eventually, most schools resumed a traditional schedule (Kramer, 1996).
Altered Scheduling as a Restructuring Initiative

The push to reform public education in the early 1980s was primarily economic, stemming from fear that America was falling behind in terms of global productivity and dominance (Murphy, 1991). Growing difficulties in competing with other countries led to an assumption that Americans were not being properly prepared for a society and workplace which required functional literacy and numeracy (Schlechty, 1990). "It did not take reformers long to draw the connection between this economic impotence and the educational system" (Murphy, 1991, p. vii).

Fullan (1991) called the two "waves" of reform in the early 1980s the intensification phase and the restructuring phase. Intensification reforms focused on restoring quality through curriculum and higher teacher and student standards, and promoted changes such as teacher testing, career ladders, and/or merit pay; more stringent student academic requirements; and more frequent standardized testings for students (Fallon, 1995). In 1983, "the futility of attempting to implement one innovation at a time, even serious ones, was attacked with force by the National Commission on Excellence in Education" in A Nation at Risk (Fullan, 1991, p. 6). What ensued was a restructuring of the entire "educational enterprise" (Murphy, 1991, p. 6), more broadly focused on systemic changes of the learning process, teacher work conditions, and basic school operations (Fallon, 1995).

As educational restructuring efforts escalated in the late 1980s and early 1990s, reallocation of time became a genuine consideration. The
National Education Commission urged scheduling reform, calling for a de-emphasizing of seat time, or Carnegie Units, in favor of meeting higher performance standards in key subjects (Prisoners of Time, 1994). Educators began to focus on better time management as a viable route toward improving the quality of learning (Canady & Rettig, 1995a), by reducing daily time fragmentation, improving interpersonal interactions, and reducing overall stress in schools (Carroll, 1990).

A 1993 National Study of High School Restructuring revealed the emergence of key reform elements (Cawelti, 1995). The study identified 36 indicators within five critical components that restructuring should include for system cohesiveness. A survey of more than 3,000 high school principals revealed that 10% to 15% of American high schools were engaged in restructuring efforts, although few schools were using all seven of the primary restructuring elements which identified by the study—performance standards, authentic assessment, interdisciplinary curriculum, school-based shared decision-making teams, block scheduling, community outreach, and instructional technology (Cawelti, 1995). By 1995, block scheduling was being considered a "major catalyst for change in the restructuring plans of high schools across America" (Canady & Rettig, 1995a, p. 18), with Canady and Rettig estimating that more than 50% of American secondary schools had either implemented or planned to implement some form of block scheduling.
The secondary school schedule divides time in the school day into segments. By assigning time to specific uses, the schedule affects structure both of the school day and the school year, how space and equipment are used, staffing patterns and assignments, available courses, co-curricular activities offered, and even student groupings (Kruse & Kruse, 1995; Winn, Menlove, & Zsiray, 1997). Since altering the use of time impacts everything that happens in a school (Winn et al., 1997), high school restructuring "begins with the schedule" (Edwards, 1995, p. 25). Canady and Rettig (1995a), ardent proponents of block scheduling, have been vocal: "Within the school schedule resides power: the power to address problems, the power to facilitate the successful implementation of programs, and the power to make possible the institutionalization of effective instructional practices" (p. xi).

To reiterate, a traditional high school schedule is one in which classes are held five days per week for 40 to 60 minutes each, depending upon whether the 420-minute school day is divided into six, seven, or eight daily periods (Prisoners of Time, 1994). The typical traditional schedule features seven class periods of equal duration, a home room, and a lunch period (Kruse & Kruse, 1959). With one preparation period, instructors teach five or six classes a day (Carroll, 1990), and have total student enrollments of 125 to 180 students (Canady & Rettig, 1995a). Students change classes six or seven times (called transition time), and report to as many as seven different teachers in a school day (Canady & Rettig, 1995a). Instructors
have one 50-minute preparation period and teach six classes of approximately 25 to 30 students each, for a total “student load” of 150 to 180 students (Prisoners of Time, 1994). While Hackmann & Schmitt (1997) called block scheduling a “needs-driven . . . approach to the problem of restructuring the time element in the secondary school paradigm” (p. 8), a definition need not be difficult. Block scheduling basically divides time in a school day and year to allow classes to meet for a longer period of time each day (a block), but for a fewer number of days during the school year (Carroll, 1990; Kramer, 1997a) than traditional scheduling. Many variations of block scheduling are discussed in the next subsection. The following explanation of block scheduling concentrates on the “4X4” block scheduling format, with which this study is concerned.

Semestered, or 4X4 block scheduling, is the most popular model of intensive scheduling (Kramer, 1997a), with the term “intensive” simply implying a scheduling format in which students take fewer classes and teachers teach fewer classes at one time (Carroll, 1990). Canady and Rettig (1995a), a major influence in the field of block scheduling, provide a literature piece that summarizes and explains the various types of block scheduling formats, and from which the following explanation is derived. Since the school year is usually 180 school days (Prisoners of Time, 1994), the explanation is based on 180 days.

In the 4X4 block scheduling format, a student enrolls in four classes the first 90-day semester, and then enrolls in four new classes the second
90-day semester, hence the name "4X4." A course that formerly was one year long is completed in one semester, with each class lasting 90 minutes daily. At the end of the first quarter (45 days) of the school year, the student is at the midpoint in each of the enrolled four classes. By end of the first semester (90 days), also the midpoint of the school year, the student receives one high school unit of credit for each successfully completed course, and then enrolls in four new courses for the next 90-day semester. Instructors teach three blocks and have one 90-minute preparation period each day. With each block during both semesters having a student enrollment of approximately 25 to 30 students, a teacher's total student load for each of the two semesters is 75 to 90 students. At mid-year, teachers have new students in three new blocked classes.

Professional literature praises block scheduling as an innovation which reduces problems and enhances performance in secondary education settings (Carroll, 1990). The literature points to the three elements of schedule, climate, and teaching methods as being highly interrelated in the overall instructional program (Canady & Rettig, 1995a; Hackmann, 1995). With instruction the primary mission of a school organization, it is obvious that the daily schedule profoundly affects the operation of any high school.

Canady and Rettig (1995b) called block scheduling "an untapped resource" (1993, p. 314) for improving "curriculum fragmentation, discipline problems, and student failure" (p. 10). The fewer classes and thus fewer transitions between classes provide a school day which is simplified
(Shoenstein, 1996; West, 1996). According to Sizer (1986), student time at school is too fragmented by the six or seven daily periods of most traditional schedules, and too rushed for anyone to examine any single topic in depth. Speaking to this problem from a teaching perspective, Scroggins and Karr-Kidwell (1995) claimed the traditional daily schedule of most high schools "precludes the use of cooperative learning and other teaching strategies" (p. 15) since class time is so limited, and thus perpetuates a system in which teaching and learning have less likelihood for effectiveness.

Other educators joined the dialogue. Reid (1996) claimed that longer block-scheduled segments of classroom time can encourage pedagogical changes if the school climate fosters professional growth. Davis-Wiley et al. (1995) pointed to the critical issue of instructional time wasted in transitions between classes, administrative duties such as taking roll, and in beginning and ending of classes—time which they believed could be reclaimed through a block scheduling format.

**Block Scheduling Formats**

According to Hackman (1995), there are "all kinds of creative alternatives to six- and seven-period scheduling formats" (p. 24). Indeed, the literature reveals extensive variations in scheduling models. Carroll (1990) describes Copernican schedules that exist in varying configurations, concentrating on one or two subjects at a time. Canady and Rettig's (1995a) comprehensive resource classified scheduling configurations into five basic categories, which have been used in this subsection to explain scheduling.
variations. Emphasis is placed on the two most popular types of scheduling—the alternate day block schedule, and the 4X4 block schedule (Kramer, 1996). Some advantages and disadvantages inherent in the basic designs are also presented. For purposes of this discussion, the school year is considered to be 180 school days in all types of schedules.

The single-period daily schedule. This is another name for the traditional schedule described in the previous subsection. To briefly reiterate, in this type of schedule, students are enrolled in six to eight classes each day, varying in length between 40 and 60 minutes (Canady & Rettig, 1995a; Prisoners of Time, 1994), depending upon the number of classes selected by each high school for a daily schedule. With one preparation period, instructors teach five to seven classes a day, and have total student enrollments of 125 to 180 students (Carroll, 1990). Little dialogue is needed about this model, as “it has been the predominant form of high school scheduling for the last 70 or 80 years” (Canady & Rettig, 1995a, p. 23).

The alternate day plan (or “A-B” schedule). In this format, students and teachers meet their classes every other day rather than daily. Classes are usually held as extended blocks of time, mostly in 90-minute segments, and may meet at different times of the day on a rotating basis (Canady & Rettig, 1995a). This is one of the two block scheduling forms which Kramer (1996) noted as more popular, describing an alternate day schedule as one typically consisting of eight courses meeting 80 to 90 minutes every other
day for the entire year. Tables 1 and 2, adapted from Canady and Rettig (1995a), are examples of alternate day block schedule formats, showing basic six- and eight-course alternate day schedules, respectively. Four classes meet in double instructional blocks of time one day, with the other four classes meeting in double time blocks the next school day. This pattern

Table 1  Basic Alternate Day Block Schedule (6 courses)

<table>
<thead>
<tr>
<th>Periods</th>
<th>Monday Day 1</th>
<th>Tuesday Day 2</th>
<th>Wednesday Day 3</th>
<th>Thursday Day 4</th>
<th>Friday Day 5</th>
<th>Monday Day 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block I</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Block II</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Block III</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Adapted from Canady and Rettig (1995a).

Table 2  Basic Alternate Day Block Schedule (8 courses)

<table>
<thead>
<tr>
<th>Periods</th>
<th>Monday Day 1</th>
<th>Tuesday Day 2</th>
<th>Wednesday Day 3</th>
<th>Thursday Day 4</th>
<th>Friday Day 5</th>
<th>Monday Day 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block I</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Block II</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Block III</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Block IV</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

Adapted from Canady and Rettig (1995a).
provides an equal number of day A and day B experiences throughout the 180-day school year (Canady & Rettig, 1995a; Kramer, 1996).

Table 3 shows a seven-course alternate day plan, in which the fifth period course meets daily for about 50 minutes, while all other courses meet every other school day in double instructional time blocks. The pattern repeats throughout the 180-day school year, providing an equal number of day A and day B experiences, regardless of the number of school days in a given week or the number of school holidays (Canady & Rettig, 1995a; Kramer, 1996).

Table 3 Basic Alternate Day Block Schedule (7 courses)

<table>
<thead>
<tr>
<th>Periods</th>
<th>Monday Day 1 A</th>
<th>Tuesday Day 2 B</th>
<th>Wednesday Day 3 A</th>
<th>Thursday Day 4 B</th>
<th>Friday Day 5 A</th>
<th>Monday Day 6 B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block I</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Block II</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Period 5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Block III</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Adapted from Canady and Rettig (1995a).

Since models shown in Tables 1 through 3 are the most basic types of alternate day scheduling patterns, they are emphasized in this discussion. There are, however, many variations of the alternating model (Canady & Rettig, 1995a). For example, many modified alternate day schedules allow
for multiple lunch periods or regularly scheduled activity periods. Some models offer the same rotation of classes every week (e.g., four weekdays in blocked alternating day classes, and one day on which all classes occur in shorter time formats). Several versions offer some classes as single periods and other classes as double periods. Some models rotate times of classes every day so no one class is the last class of the day. There are still other models, too numerous to mention.

When compared to traditional scheduling, alternate day scheduling plans offer advantages for both students and teachers. First, according to Canady & Rettig (1995a), “quality instructional time” (p. 37), or overall useable instructional time, increases during a given school day due to fewer classes. For clarity, overall useable instructional time is defined as the number of nominal minutes in an instructional block minus number of minutes lost to administrative duties such as taking roll, and beginning or ending a class (Canady & Rettig, 1995a). Second, teachers are able to plan extended lessons, particularly advantageous for laboratory activities and for art, music, and vocational classes (Kramer, 1996). Longer lessons also make it possible for teachers to more easily use instructional variety, which helps to maintain student interest during classes (Carroll, 1990; Cawelti, 1994; Prisoners of Time, 1994). Third, moving from a six- or seven-period schedule to a three- or four-block plan also makes available for instruction some time formerly used in transitions (Canady & Rettig, 1995a).
Fourth, students have fewer classes, tests, assignments, and quizzes on any one day (Carroll, 1990). Fifth, it is easier for teachers to work with individual students in longer instructional blocks, and both teachers and students have fewer classes and preparations at a time (Prisoners of Time, 1994). Finally, Canady and Rettig (1995a) cite the day between class meetings as a time advantage for students to complete homework and study for tests, and for teachers to plan for instruction.

Implementation of an alternating-day schedule has been linked by Carroll (1994) with improved school atmosphere, as indicated by fewer discipline referrals and/or suspensions, a reduced dropout rate, and improved student/teacher relationships; and by King, Warren, Moore, Bryans, and Pirie (1978), as indicated by improved student and teacher attitudes. Additionally, regarding the longer instructional format, both Carroll (1994) and King et al. (1978) found lecture to be less effective, and that there was less coverage of subject material but more depth of coverage in classes.

The alternate day schedule format also has disadvantages. Winn et al. (1997) described a systematic trial by one school of several models as a precursor to implementing block scheduling. The school rejected the alternating day block schedule after citing disadvantages, such as parents and students who became frustrated trying to keep track of what day classes met and assignments were due. At-risk students and special education students had serious problems keeping up, and athletes missed
academic instruction on game days since physical education and/or athletic classes alternated with academic classes.

King et al. (1978) indicated that creating a situation like longer instructional periods, in which old methods do not work as well, does not automatically guarantee that teachers will adopt new methods. Also, teachers indicated students had more difficulty recovering from absences (Usiskin, 1995). Canady and Rettig (1995a) also cited several limitations of alternate day scheduling for teachers, such as having to work with and assign grades for 100-180 students throughout the school year, and having to prepare for as many as five or six different courses throughout the year. Student problems included dealing with homework, tests, and teachers in six to seven different subjects all year, just as in traditional scheduling. Additionally, some critics believe the alternate day plan is disruptive to the continuity of instruction in some courses (e.g., foreign languages, music, mathematics), and thus the basic scheduling design is faulty (Canady & Rettig, 1995a; Carroll, 1990; Kramer, 1996).

The 4X4 semester plan. The 4X4 design is the most popular model of intensive block scheduling (Kramer, 1997a), with the term "intensive" implying a scheduling format in which students take fewer classes and instructors teach fewer classes at one time (Carroll, 1990). The reader is reminded that this format was described in the previous subsection. The following explanation, derived from Canady and Rettig's (1995a) extensive
piece on 4X4 block scheduling, and from Kramer (1997a), is based on a 180-
day school year.

The term “4X4” describes students taking four classes the first 90-day
semester, and four new classes the second 90-day semester. A course that
was formerly one year long is completed in one semester. The duration of
each class is 90 minutes. At the end of the first quarter (45 days) of the
school year, the student is at the midpoint in each of his/her four classes
that semester. By the end of the first semester (90 days), the midpoint of
the school year, the student receives a Carnegie unit of credit for each
successfully completed course. The student then enrolls in four new courses
for the next 90-day semester. In the 4X4 scheduling format, teachers have
one 90-minute preparation period, and teach three blocks, with
approximately 25 to 30 students in each class, for a total student load of 75
to 90 students per teacher per semester. At mid-year, teachers have new
students in three new blocked classes. Table 4, as adapted from Canady
and Rettig (1995a), is an example of semestered (4X4) block scheduling.

When compared to traditional scheduling, 4X4 block scheduling offers
many advantages. First, “quality instructional time” (Canady & Rettig,
1995a, p. 37), or overall useable instructional time, increases during a given
school day due to fewer classes. To reiterate, overall useable instructional
time refers to the number of nominal minutes in an instructional block
minus number of minutes lost to administrative duties such as taking roll,
and beginning or ending classes. Second, moving from a six- or seven-period
Table 4  **Basic 4X4 Block Schedule**

<table>
<thead>
<tr>
<th>Periods</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block I</td>
<td>Course 1</td>
<td>Course 5</td>
</tr>
<tr>
<td>Block II</td>
<td>Course 2</td>
<td>Course 6</td>
</tr>
<tr>
<td>Block III</td>
<td>Course 3</td>
<td>Course 7</td>
</tr>
<tr>
<td>Block IV</td>
<td>Course 4</td>
<td>Course 8</td>
</tr>
</tbody>
</table>

Adapted from Canady and Rettig (1995a).

A schedule to a three- or four-block plan also makes time available for instruction that was formerly used in transitions (Canady & Rettig, 1995a). Third, teachers are able to plan extended lessons, which particularly benefits laboratory activities, art, music, and vocational classes (Kramer, 1996). Extended lessons also make it possible for teachers to more easily implement instructional variety, which aids in maintaining student interest during classes (Carroll, 1990; Cawelti, 1994; *Prisoners of Time*, 1994).

Fourth, students will have fewer classes, tests, assignments, and quizzes on any one day since they have fewer classes (Carroll, 1990). Fifth, teachers can more easily work with individual students in instructional blocks which provide more time (*Prisoners of Time*, 1994). Added to these advantages which 4X4 scheduling has in common with alternate day scheduling, are the following benefits cited by Canady and Rettig (1995a):

1. Teachers have fewer students and thus fewer grading responsibilities.
each semester; (2) teachers prepare for fewer courses each semester; (3) students who must repeat courses can more easily do so, since courses can be offered twice each school year; and (4) fewer textbooks are required, since half of the students can take a course first semester, and then the same textbooks can be used for other students the second semester.

Queen, et al. (1997) and Canady and Rettig (1995a) expressed some concerns about the 4X4 scheduling configuration. First, learning retention could be negatively impacted both by extensive elapsed time between sequential courses (e.g., Algebra I and II), and by foregoing breadth of coverage for depth of coverage in compacting the courses (or totally reconfiguring units, pacing guides, and lesson plans for longer instructional periods but fewer number of days). Second, there are fewer total classroom minutes per course than in a traditional schedule. Third, skill development programs such as vocational education, music, and foreign language, may suffer from the more infrequent time formats of single semesters rather than all year. By and large, however, Queen et al. (1997) and Canady and Rettig (1995a) felt the benefits of 4X4 scheduling overshadowed problems which may surface.

Others countered the concerns. Kramer (1997a, 1997b) asserted that actual overall instructional time increases, due to less time wasted in transitions and administrative duties. Pisapia & Westfall (1997c) argued that if how well the student learns the material in the first place affects retention, depth may be more beneficial than breadth of coverage. Also,
there was anecdotal evidence that teachers can discern very little difference in retention between students who recently completed and those who earlier completed a required course (Canady and Rettig, 1995a).

**Trimester, quarter-on/quarter-off, and other intensive scheduling models.** These more intensive scheduling models offer shorter and more intense courses of instruction. In a trimester plan, students take two extended-time blocked core courses plus related subjects in shorter time frames of 60 days, annually receiving six or seven Carnegie units of high school credit. Permitting very focused time on fewer subjects, this plan is often used in high schools with Tech-Prep or alternative programs (Canady & Rettig, 1995a).

The quarter-on/quarter-off plan is like alternate day scheduling, in that there are two set schedules which alternate. During the first quarter (45 days), the student is enrolled in four courses which meet in double periods (blocks). At the end of the first quarter, the student has completed one-half of each course, or the equivalent of one semester. During the second 45-day quarter, the student is enrolled in four different courses which meet in double periods (blocks). At the end of the second quarter, the student has finished one-half of each of the second group of courses, or the equivalent of one semester. During the third and fourth quarters, the student repeats the rotation, earning Carnegie units in the first four courses by the end of the third quarter and in the second four courses by the end of the fourth quarter (Canady & Rettig, 1995a). The main advantage claimed
by this plan is that students do not have as much elapsed time between sequential courses during the high school years, a concern as to the retention of subject matter. Sometimes this type of plan can also benefit slower students who need more time to learn. For example, if a required course such as biology were taken the first quarter without much success, the student could repeat the instruction the second quarter instead of enrolling in a new course, and thus be ready to join his first-semester class during third quarter for the second half of biology (Canady & Rettig, 1995a).

The Copernican Plan (Carroll, 1990) utilizes "macroscheduling," which is roughly equivalent to the term "intensive scheduling." A few examples of macro-classes are those which meet two hours daily for 60 days (trimester), or four hours daily for 30 days, or six hours daily for 20 days, coupled with year-long courses in shorter time blocks such as music or physical education. There are endless versions of Copernican Plans which schools can tailor to specific needs (Carroll, 1990).

Various configurations of the 180-day school year. Some school districts have considered the possibility of reconfiguring the 180-day school year to include both long terms and short terms, so that time could be provided for remediation and enrichment of students, and for professional development of teachers. An example of this is the 75(15)-75(15) plan. This plan provides intensive instruction in approximately 112-minute blocks in three courses, combined with a single-period class (which runs all year) during the first 75-day period. The short 15-day period which follows offers
enrichment, electives, community service, remedial work, or the like, in combination with the single-period class. The second 75-day period includes three new courses in the intensive format in combination with the single-period, year-long class. The final 15-day period is structured much like the first 15-day period (Canady & Rettig, 1995a). A 75-30-75 plan is another consideration, with the middle 30-day period used for student remediation, enrichment, special activities, field trips, community service, and the like.

Perspectives Framing Block Scheduling

The literature shows consistent claims that block scheduling provides benefits to teachers and students alike (Canady & Rettig, 1995a; Carroll, 1990). The reader is reminded that a traditional high school schedule is one in which 40- to 60-minute classes are held five days per week, depending upon whether the school day is divided into six, seven, or eight daily periods (Prisoners of Time, 1994). Compared to traditional schedules, block schedules offer stress-reducing features for teachers, such as fewer students in classes, smaller student loads per semester (Shoenstein, 1996), more preparation time, and decreased number of preparations (Canady & Rettig, 1995a). Moreover, with larger segments of available instructional and preparation time, block scheduling can entice teachers to experiment and change instructional strategies (Carroll, 1990; Cawelti, 1994).

Since students take fewer subjects at a time, benefits accrue to them in the form of minimized organizing and time management demands (Reid, 1995). Fewer subjects means students have fewer teachers, textbooks,
assignments, and transitions from one class to another (Prisoners of Time, 1994). Additionally, students who must repeat course work can easily do so, since courses are often offered more than once during the regular school year (Kramer, 1996, 1997b; O'Neil, 1995).

Block scheduling lessens transition time (Cawelti, 1994), the time spent in moving from class to class during the school day, and increases instructional time (Davis-Wiley et al., 1995). The fewer class changes during the day encourage a better academic environment (Edwards, 1995; Reid, 1996) and reduce curriculum fragmentation (Canady & Rettig, 1993). Smaller classes and more interactive learning (Queen et al., 1997) also foster a more personalized school climate (Fallon, 1995), with less isolation for both teachers and students, and better interpersonal relationships (Kruse & Kruse, 1995; Irmsher, 1996). Canady and Rettig (1995a) believe this improves both attitudes toward learning and discipline, with discipline incidents often abating when students feel more invested in relationships. Moreover, since stress and a hectic pace can exacerbate tendencies of some teenagers toward hyperactivity and disorganization, a simpler school day can help provide more focused student learning (Canady & Rettig, 1995a). Table 5 collapses major points in the literature into contrasts between traditional scheduling and 4X4 block scheduling, addressing schedule configuration, instructional differences, and climate factors; and illustrating at a glance why block scheduling is considered a major innovation to secondary education.
Table 5  Claims Made in the Literature Contrasting Traditional and Block Scheduling

<table>
<thead>
<tr>
<th>Dimensions of Contrast</th>
<th>Traditional Scheduling</th>
<th>4X4 Block Scheduling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher daily student load, instructional time</td>
<td>125-180/day for entire year, with larger class sizes; daily teach five or six 50-minute periods</td>
<td>60-90/day, new students at half year; smaller classes; teach three 90-minute blocks each day</td>
</tr>
<tr>
<td>Teacher daily preparation time</td>
<td>One class period (50 minutes)</td>
<td>One class period (90 minutes)</td>
</tr>
<tr>
<td>Classes per day</td>
<td>Six or seven</td>
<td>Four</td>
</tr>
<tr>
<td>Instruction</td>
<td>Teacher-oriented; teachers are lecturers; time lost in routine duties, beginnings, endings</td>
<td>Student-oriented; teachers are coaches, facilitators; fewer routine duties, class beginnings and endings</td>
</tr>
<tr>
<td>Flexibility and Productivity</td>
<td>Limited by time constraints</td>
<td>Enhanced by time element; student learning needs are better addressed</td>
</tr>
<tr>
<td>Student/teacher interpersonal relationships</td>
<td>Hectic time frame per class limits interpersonal exchanges</td>
<td>Teachers know students better, can give more individualized attention</td>
</tr>
<tr>
<td>Teacher peer relationships</td>
<td>In theory, instructional variety limited by short classes; less time for collegiality/collaboration</td>
<td>In theory, more class time abets experimentation; more preparation time boosts collaborative planning</td>
</tr>
<tr>
<td>Stress level</td>
<td>Greater, due to time crunch, grueling pace</td>
<td>Eased--fewer classes, more student/teacher interactions</td>
</tr>
<tr>
<td>Number of disciplinary incidents</td>
<td>In theory, greater; more transition time; less feelings of safety</td>
<td>In theory, fewer; less transition time, greater feelings of safety</td>
</tr>
</tbody>
</table>

(table continues)
Table 5 (continued)

<table>
<thead>
<tr>
<th>Dimensions of Contrast</th>
<th>Traditional Scheduling</th>
<th>4X4 Block Scheduling</th>
</tr>
</thead>
<tbody>
<tr>
<td>School climate</td>
<td>Fast-paced, less</td>
<td>Usually calmer, quieter, more personalized</td>
</tr>
<tr>
<td></td>
<td>personalized</td>
<td>more personalized</td>
</tr>
<tr>
<td>Classroom climate</td>
<td>Quiet expected; emphasis on notes and lecture; less student engagement</td>
<td>More activity; classes are noisier, more interactive; students more engaged</td>
</tr>
</tbody>
</table>


Themes in the Block Scheduling Literature

Block scheduling is not a new phenomenon. It has been widely used in British Columbia, Ontario, and Alberta since the 1970s. In the United States, block schedules have been increasingly popular through the 1990s, and currently they are spreading to high schools in many regions. (Kramer, 1996, p. 758)

Kramer (1997a, 1997b) provided a literature review on the broad effects of block scheduling on math instruction, reporting that block scheduled American students showed improved or relatively unchanged achievement test scores, whereas block scheduled British Columbia students scored significantly worse in math than did students in traditional scheduled schools (Bateyson, 1990; Marshall, Taylor, Bateson, & Bridgon, 1995). An analysis of the situation led Kramer (1997a, 1997b) to caution that British Columbia results should be interpreted in light of prevailing
conditions, which were highly likely to negatively impact student achievement in a block scheduling format.

Kramer (1997a, 1997b) reviewed articles and interviewed key informants, finding three possible factors which may have contributed to negative findings in British Columbia. First, British Columbia teachers are allowed only one planning period per school year, thus a 4X4 block schedule may have put teachers at a real disadvantage. If the planning period occurred during the first semester, there was no planning period the second semester, and vice versa. Second, the province mandated course content, which restricted adjusting the curriculum for a longer time format. With 40% of a graduate's final course grade decided by a provincial exam score at high school completion, provincial examinations tended to standardize course content (Anderson, Muir, Bateson, & Blackmore, 1990). Third, the nature of the provincial exams called for memorization and rote learning rather than critical thinking and problem solving, which favored teaching methods that did not adapt well to longer instructional blocks (Anderson et al., 1990).

Although the body of U.S. block scheduling literature is steadily expanding, block scheduling remains an understudied area due to the relatively short period of time it has been tried in U.S. high schools, except for efforts like “combining two courses such as English and history over two class periods to form a special class” (Queen et al., 1997, p. 88). Fallon (1995) spoke to perceived deficits in block scheduling literature, noting the
absence of literature concerning intensive education in a public high school during a regular school year, while O'Neil (1995) pointed to U.S. literature as mostly observational or anecdotal. "Only in the last decade have educators begun to capitalize on the potential of scheduling to improve schools" (Canady and Rettig, 1995a, p. 10).

The reader is cautioned that the block scheduling literature treated in this section does have limitations. Some reports concerned only one or two schools (Baylis, 1983; Buckman, King, & Ryan, 1995; Davis-Wiley et al., 1995; Edwards, 1995; Eineder & Bishop, 1997; Guskey & Kifer, 1995; Reid, 1996; Shoenstein, 1996; Shore, 1995), or are anecdotal reports (Krajewski, Bonthuis, Kluznik, & Miller, 1997; Queen & Ganske, 1997; Reid, 1996; Shoenstein, 1996; Shore, 1995; West, 1996). Other accounts can be considered premature in claiming results prior to two years (Averett, 1994; Fullan, 1991) in a block scheduling format (Buckman et al., 1995; Davis-Wiley et al., 1995; Edwards, 1995; Guskey & Kifer, 1995; Krajewski et al., 1997). Another caution concerns a three-phase Virginia study in 12 high schools (Pisapia & Westfall, 1997a, 1997b, 1997c), the reported results of which are confusing due to multiple scheduling types studied (two traditional, three alternate-day block, and one 4X4 block). Finally, as Kramer (1997a, 1997b) noted, underlying factors affected achievement results reported in British Columbia literature (Bateson, 1990; Anderson et al, 1990; Gore, 1996; Marshall et al., 1995; Reid, 1995, 1996; Stevens, 1976; Usiskin, 1995).
On the other hand, there are strengths of some U.S. studies. Baylis (1983) used a pre- and post-test design to compare academic performance of an experimental group of 22 block scheduled students and a control group of 36 non-block scheduled students in a California community college setting. Fletcher (1997) explored block scheduling effects in six Tennessee high schools after four years in the format, surveying 280 teachers and 2,000 students. Averett (1994) used a large sample of North Carolina high schools to summarize test score changes of schools which switched from traditional scheduling to blocked scheduling, although the study was premature after only one year in a block scheduling format.

There are themes which occur in both U.S. and Canadian literature on block scheduling. For purposes of this review, the literature is grouped around the large topic areas of non-academic effects, academic effects, and instructional effects of 4X4 block scheduling. The researcher cautions that results of block scheduling configurations other than the 4X4 format may have been inadvertently included in this review, as reported results in some studies combined all block scheduling formats.

Non-academic effects of block scheduling. A common theme in the literature concerns school climate or overall atmosphere. Reports indicated that with implementation of block scheduling, school atmosphere tends to become more conducive to learning, as characterized by a greater focus on academics (Reid, 1996), more committed students and teachers (Buckman et al., 1995), and better student and teacher relationships in the longer class
periods (Brophy, 1978; Buckman et al., 1995; Carroll, 1994; Eineder & Bishop, 1997; Guskey & Kifer, 1995; Krajewski et al, 1997; Reid, 1995; Ross, 1977; Shore, 1995; West, 1996).

Often cited as a factor in school climate change was improved student behavior (Hackmann, 1995; Queen et al., 1997; Reid, 1995), in the form of reduced suspension and/or referral rates (Buckman et al., 1995; Carroll, 1994; Eineder & Bishop, 1997; Guskey & Kifer, 1995; Pisapia & Westfall, 1997c; Shore, 1995). While Hackmann (1995) tied improved behavior to fewer transitions between classes, which kept hall problems to a minimum, Carroll (1994) attributed improved behavior to reduced student stress coupled with improved student/teacher relationships. Shoenstein (1996) and West (1996) also alluded to reduced stress in describing a quieter school day characterized by a less hectic pace. Exceptions to the overall findings on school atmosphere were Pisapia and Westfall (1997a) who reported unchanged student/teacher relationships, and Hackmann (1995) who noted decreased teacher morale.

Academic effects of block scheduling. There were mixed results of block scheduling as to failure and dropout rates. Based on four years of archival records, Edwards (1995) reported an increased failure rate after one year in block scheduling, which he attributed to elimination of basic-level core subject classes in the new scheduling format. Shoenstein (1996) noted a decreased failure rate in a block scheduling format; Baylis (1983) and Carroll (1994) pointed to a reduced dropout rate; and Guskey and Kifer
(1995) reported both failure and dropout rates as unaffected. Reduced failure and dropout rates were attributed to students' having fewer courses at a time, which helped students to focus (Averett, 1994; Carroll, 1994; Reid, 1995) and to organize, especially the weaker students (Reid, 1995).

Grades often improved at block scheduled schools (Baylis, 1983; Carroll, 1994; Fletcher, 1997; Gore, 1996; King, Clements, Enns, Lockerbie, & Warren, 1975), as reflected by honor roll status (Buckman et al., 1995; Edwards, 1995; Shoenstein, 1996), or at least remained the same (Edwards, 1995). Both Gore (1996) and King et al. (1975), however, questioned whether improved grades reflected increased learning or were instead the result of grade inflation.

Results of block scheduling on test scores were mixed. Improved standardized test scores or test scores with little or no change (Averett, 1994; Carroll (1994) were reported. Several studies in Ontario compared students in traditional scheduling with students in block scheduling, with mixed results. Studies comparing data from the Second International Math Study (Raphael & Wahlstrom, 1986; Raphael, Wahlstrom, & McLean, 1986) indicated traditionally scheduled students consistently outscored block scheduled students. A longitudinal study of high school math students (Stennett & Rachar, 1973; Smythe, Stennett & Rachar, 1974), as well as a larger study of ninth grade math students (Stennett (1985), compared test score performance of students, with no significant differences found in both cases. Results of these Ontario studies are questionable,
however, because data were collected one month before the end of the second semester (which favors traditionally scheduled students who had completed a larger percentage of the course), and because lower-ability students were believed more likely to be in block scheduled classes (Kramer, 1996). There is also evidence that students in block scheduled schools are more likely than students in traditionally scheduled schools to enroll in the more difficult courses (Reid, 1995).

British Columbia studies (Bateson, 1990; Marshall et al., 1995) using science and math achievement test data showed students in traditional schedules outscored students in block schedules, especially on the rational and critical thinking portion of the test, despite expectations to the contrary (Bateson, 1990). There were limitations in both studies (Kramer, 1996). A limitation in the Marshall et al. (1995) study was timing, with data collected in May rather than closer to the end of the second semester in late June, which favored traditionally scheduled students who had completed a larger percentage of the course. There is also a possible volunteer effect in both studies, since schools elected the block scheduling format and could have done so based on prior student performance.

**Instructional effects of block scheduling.** Blocked scheduling could act as a catalyst for changing pedagogy (Canady & Rettig, 1995a; O'Neil, 1995), but greater variety in instructional strategies was not guaranteed by block scheduling implementation (King et al., 1978). Some teachers made few instructional changes, while others made major pedagogical changes to
adjust for longer class periods (King et al., 1978). Surveys indicated in general that teachers at block scheduled schools used less lecture and more participatory instructional processes (Averett, 1994; Brophy, 1978). The change may have been more difficult for math teachers (Reid, 1995), who possibly used less participatory methods (King et al., 1978). Pedagogical changes noted with block scheduling were greater experimentation and creativity, and more variety in strategies used (Davis-Wiley et al, 1995; Edwards, 1995; Einedar & Bishop, 1997; Fletcher, 1997; Guskey & Kifer, 1995; Queen et al., 1997), specifically the use of more hands-on, cooperative group learning, team-teaching, and interdisciplinary activities (Buckman et al., 1995; Queen & Gaskey, 1997; Queen et al., 1997; Shoenstein, 1996) and more concept-oriented and problem-solving activities (Pisapia & Westfall, 1997a).

Exclusive use of the lecture method is not as effective for instruction in longer time blocks (Canady & Rettig, 1995a; King et al., 1975; O'Neil, 1995; Reid, 1996). Greater teaching experience does not necessarily predict greater student success in block scheduled schools, since traditional classroom experience regarding pedagogical methods does not seem to transfer well into block scheduled classrooms (King et al., 1978). Students indicated they found it easier to focus on assignments, had a better grasp of subject matter, and were learning more (Edwards, 1995; Guskey & Kifer, 1995; Queen et al., 1997). Teachers in block scheduled schools often covered less information, but in more depth (Averett, 1994; Brophy, 1978; Carroll,
1994; Fletcher, 1997; King et al., 1978; O'Neil, 1995; Pisapia & Westfall, 1997a), although Stevens (1976) questioned if there really was more depth of content in block scheduling. Teachers who continued to primarily use the lecture method may have covered less material without increasing depth of content coverage (Bateson, 1990; Usiskin, 1995).

Teachers in block scheduled schools indicated they often needed and indeed spent considerably more time in planning lessons than did teachers in traditionally scheduled schools (Averett, 1994; Brophy, 1978; Davis-Wiley et al., 1995). There was more collaboration with other teachers (Guskey & Kifer, 1995), often because of planning for interdisciplinary and/or team teaching activities (Pisapia & Westfall, 1997a). Since it appeared that more planning time was needed, Kramer (1997a) cautioned it was unwise to try to decrease class size when block scheduling was implemented, unless the school planned to hire additional teaching professionals:

In general, if the size of the student body and the number of staff members are held constant, moving to a block schedule will change class size if and only if planning time is also changed. Increasing planning time will increase class size (since fewer teachers will be in class at any given moment); decreasing planning time will decrease class size. (p. 35)

In a block scheduling format, less time each day was spent in routine administrative duties such as taking roll, and beginning or ending classes (Averett, 1994; Canady & Rettig, 1995a). Noted exceptions to this were schools in British Columbia and Ontario. Traditionally, two weeks at the end of the year were allocated to testing and parent conferences; but in a
block scheduling format, this non-instructional time was doubled when two weeks were allocated at the end of each semester (Bateson, 1995; Raphael et al., 1986). Another instructional issue concerned student absences. Students seemed to have more difficulty recovering from absences in a block scheduling format (Averett, 1994; Usiskin, 1995). It was unclear whether this impacted student attitudes toward absenteeism, although some schools indicated that student absences decreased after the implementation of block scheduling (Baylis, 1983; Buckman et al., 1995; Pisapia & Westfall, 1997c; Shoenstein, 1996).

A source of concern regarding the block scheduling format was the retention of learning after a gap in sequential courses. Although Bateson (1990), Carroll (1994), and Marshall et al. (1995) confirmed that recall of recently learned material after a longer time gap was less accurate, they were divided in their opinions about whether this made any practical difference. In an older Canadian study (Rachar, Rice & Stennett, 1973; Stennett & Rachar, 1973; Smythe et al., 1974) conducted at the end of a school year, block scheduled students who had completed a required math course in the fall semester exhibited less accurate recall than did traditionally scheduled math students. The block scheduled students had no real difficulty recovering during the subsequent math course, however, so no negative effects existed over the longer term. Canady and Rettig (1995a) provided anecdotal evidence that teachers could ascertain very little difference in retention between students who had recently completed a
prerequisite course and students with a greater time lapse since course completion.

Regardless of type, block scheduling offers many features that can enhance instructional delivery and effectiveness. The greatest support for block scheduling appears to be the difference it makes in overall school climate and quality of school time for the entire school population (Canady & Rettig, 1996). "There is strong anecdotal evidence that switching to an intensive or alternating-day block schedule has a positive effect on school atmosphere" (Kramer, 1997a, p. 20). Reid (1996) felt better school climate was mainly due to fewer transitions, which allowed fewer occasions for student misbehavior. Carroll (1990) credited better climate to improved student behavior, resulting from improved interpersonal relationships and reduced student stress that resulted from block scheduling. It was also claimed that the additional time to plan and execute instructional duties led to reduced teacher stress: "Teachers need time. Time is one of the most crucial resources in schools" (Stockard & Mayberry, 1992, p. 126).

Allowing Time for Change

Contemplating a block scheduling implementation in high schools requires some understanding of how long it takes to actually effect change. Fullan (1991) wrote at length about change, describing three broad phases which may overlap in the change process. The first phase is the initiation, or process of study leading to the decision to proceed with change. For a change to block scheduling, this period would include administrative
planning for the ensuing structural adjustments, and staff development to prepare teachers for constructively encumbering longer instructional formats. Often cited as one reason for past failures of innovations in schools has been the resistance of educators to change, but according to Fullan (1991), it is not resistance so much as "they don't know how to cope with it" (p. xiv), since "the number and dynamics of factors that interact and affect the process of educational change" (p. 47) are simply too overwhelming to fully contemplate. In a school environment, all involved parties need enough time to accept and to adjust for the planned change.

The second change stage is called the implementation, and is the stage of initial use or the first experience of trying to put a reform into practice. It usually takes two to three years in this phase (Fullan, 1991), to get to a point when the change actually becomes practice. Canady and Rettig (1995a) also cautioned that enough time must be allowed for meaningful change to occur, and estimated this point to be at about the three-year mark.

The institutionalization or continuation stage is the third and final phase, and the point at which the change either becomes part of the system or disappears. Fullan (1991) estimated the total three-phase time frame at a lengthy three to five years, saying that "change is a process, not an event" (p. 49), and that it takes two or more years at the second stage for change to have a legitimate chance to become part of the system. Although outcomes
can be assessed relatively soon, the change itself has to have the time to be fully effected before accurate assessment can occur.

**Summary of the Section on Block Scheduling**

American secondary schools have been harshly criticized since the 1960s. By the 1980s, national investigations signaled the urgency for restructuring high schools to improve the quality of learning, calling for better time management and increased personalization in high schools (*A Nation at Risk*, 1983; *Prisoners of Time*, 1994; Sizer, 1986). The traditional single-period schedule was seen as the perpetuation of a system in which teaching and learning had less likelihood of being effective (Canady & Rettig, 1995a; Scroggins & Karr-Kidwell, 1995).

Reallocating time through intensified scheduling alternatives has become a popular school restructuring initiative in the 1990s, with the schedule a tool used to organize curriculum and its delivery, and to control student interactions. The scheduling format is thus a powerful force in high schools, profoundly affecting the entire school operation which is focused primarily on instructional effectiveness.

Block scheduling offers positive alternatives to the traditional schedule. It can facilitate student learning and achievement, encourage instructional variety, support teacher professionalism, discourage student misbehavior, and increase interpersonal relationships in the school environment. Assessing for results of any such innovation should occur only after allowing sufficient time for the initiative to become fully implemented.
As a measure of how well rhetoric is realized in practice, the present study examined the interaction of block scheduling and school climate.

Organizational Climate

Students and staff in educational organizations interact within whatever quality of organizational life, or school climate, is present, with each environment unique to the individual school setting. Indeed, people often intuitively "sense that there are differences in the overall atmosphere of schools and that these differences somehow affect how people behave" (Miskel & Ogawa, 1988, p. 289).

To best study organizational climate, a multidimensional and complex concept, there is question as to which variables should be used. Climate research has been historically marked by the use of multiple theory bases and variables. Another confusing aspect of studying climate is that the terms "culture" and "climate" have been used interchangeably to describe the work environment, although conceptually the terms are different.

The first subsection provides a broad perspective common to both culture and climate. A second subsection distinguishes organizational climate as the focus of this study. Later subsections discuss problems in measuring school climate, selected major school climate instruments, and a summary of the school climate section. Finally, the three climate variables which are outcome variables for this study are presented.
Social Organizational Perspectives

The study of administrative science, which began in the early 1900s, arose from a need to better understand and manage complex organizations, and was heavily influenced by three philosophical movements (Hoy & Miskel, 1996). The first movement was the classical theory of organization, formalized in the 1911 volume *Principles of Scientific Management* by Frederick Taylor (1947). This movement focused on the task dimensions of organizations, to the near exclusion of psychological and sociological variables. It concentrated on formal organizational structure, management components, and work efficiency, and had as its hallmark the scientific analysis of work.

The second phase in the evolution of administrative science, the human relations movement, countered the mechanistic first movement by focusing on people dimensions of management and on the informal elements of organizations. According to Roethlisberger & Dickson (1939), the Hawthorne research studies of the late 1920s and early 1930s formed the roots of this second movement. The studies initially were directed at increased productivity, focusing on the relationship between efficiency and illumination quality in industrial settings.

Roethlisberger & Dickson (1939) described the course of the Hawthorne studies. When the first trials failed to show definitive results, six female workers were placed in a separate room for observation as they
performed the standardized task of assembling relays. Many experimental manipulations were tried for a year; and although output increased, it was found to be independent of the manipulations. After reestablishment of original work conditions, production levels rose to higher levels than prior to the experiments. Additionally, worker attitudes and morale improved throughout the course of the studies. The results of these experiments pointed to the value of humanism, or attention to the people dimensions, in the workplace. The "Hawthorne Effect" is a statistical term still commonly used today (Hoy & Miskel, 1996) to describe the phenomenon that an effect may occur independent of the variables, simply because people are aware that research is being conducted.

The third movement, which emerged in the 1960s as a partial synthesis of the first two phases, is the behavioral science or social science approach, which recognized both formal and informal organizational elements (Hoy & Miskel, 1996). A theoretical debate questioned the logic of describing school organizations as rational systems without regard for environmental influence, in effect treating schools like businesses with an efficiency and profit motive (Culbertson, 1988). On the other hand, the open systems theory recognized schools as being interactive with environment, needing input for organizational adaptation and effectiveness (Hoy & Miskel, 1996). This movement acknowledged a link between theoretical explanation and careful empirical work (Willower, 1987), urging relevant theory building so that research would inform practice and vice versa.
Social systems theories and models have been used to study schools as complex social systems. The origin of the general notion of educational climate goes back to a 1930s study conducted by Willard Waller regarding the sociology of the school (McDill & Rigsby, 1973). Waller studied the school as a formal organization, and believed schools contained miniature student and teacher subcultures which struggled for power. Based on Waller's study, subsequent research on adolescents and school-related behavior focused within the school society (McDill & Rigsby, 1973), but also recognized that there are external constituencies with which schools must interact. Particularly since the early 1980s, researchers have studied schools as open systems, regulated by feedback and responding to the interaction of bureaucratic expectations, informal organizational norms, and individual needs in order to maintain stability (Hoy & Miskel, 1996).

According to Lipham (1983), a good example of an open systems model is Getzels and Guba's 1957 social systems organizational model, which focused on the nomothetic dimension pertaining to the institution, and the idiographic dimension pertaining to the individual. This model theorized that organizational behavior resulted from the interaction of an institutional role, as defined by expectations attached to the role, with individual personality, as defined by needs of an individual. The dominant themes characterizing the Getzels and Guba model were the complexity of the human personality, and its interaction with formal and informal school
elements; and how individual and group values affected the communities to which the school was related (Hoy & Miskel, 1996; Lipham, 1983).

Research on culture preceded research on climate in educational organizations, typically attempting to describe organizational conditions in terms of cultural assumptions. As early as 1938, Chester Barnard's *The Functions of the Executive* affected educational administration by addressing cooperative behavior in formal organizations, recognizing that behavior should be evaluated from both individual and organizational perspectives (Barnard, 1968; Hoy & Miskel, 1996). Researchers studying learning environments looked to studies comparing effective and ineffective business organizations, and to corporate research theories. Highly regarded was the work of William Ouchi (1981), who described effective corporations marked by internally consistent cultures and shared values. Managing people rather than technology was the focus of these "Theory Z" companies (Ouchi, 1981).

Also widely accepted in educational circles was the research of Peters and Waterman (1989), whose study of 62 United States corporations culminated in the volume *In Search of Excellence*, and whose findings on the qualities and practices of successful companies provided a backdrop for effective practice. Despite a complex societal environment, these excellent companies promoted wise use of basic management tenets, keeping operations simple and concentrating on quality. Among their conclusions,
Peters and Waterman (1989) found that professional role formation, and both individual and subgroup interrelationships, greatly influenced an organizational climate.

Although often analyzed by educational researchers, corporate culture findings were seldom directly tested in public schools. Attempts to transfer business practices to the learning environment highlighted the differences in the two arenas. This raised questions about whether a school has only one culture, as is generally found in corporate organizations, or multiple subcultures in which individuals or groups experience an organization differently (Miskel & Ogawa, 1988).

There is considerable overlap in educational literature regarding the conceptual distinction between organizational climate and organizational culture. Questions abound as to which construct best defines the "feel" of a work setting and should be used to examine school character. As previously noted, research on culture preceded that of climate, which was not originally recognized as a separate construct. Hoy and Miskel (1996) consider the two perspectives as simultaneously competing yet complementary:

Each of these notions suggests a natural, spontaneous, and human side to the organization; each suggests that the organizational whole is greater than the sum of its parts; and each attempts to uncover the shared meanings and unwritten rules that guide organizational behavior. (p. 127)

Although culture is often considered the broader of the two concepts, Tagiuri (1968) defined climate as more far-reaching, identifying culture as one of the four dimensions of climate. A useful conceptual distinction was
suggested by Ashforth (1985): Culture consists of shared assumptions, norms, and/or values, while climate is defined by shared perceptions of behavior.

Climate of School Organizations

There is no one common definition of organizational climate on which scholars agree (Pallas, 1988), but several which are particularly useful. Hoy and Miskel (1996) described climate as a lasting aspect of environment that is "experienced by participants, affects their behavior, and is based on their collective perceptions of behavior in schools" (p. 151). Similarly, Field and Abelson (1982) described climate as "an abstract perception of the individual," claiming it "may occur at an organizational, group, and/or individual level" (p. 82). In fact, climate research generally involves using teacher, principal, and sometimes student perceptions to define the nature of a setting (Anderson, 1982; Field & Abelson, 1982). An particularly interesting analogy likened climate of a school to personality of an individual (Halpin & Croft, 1962).

"Organizational climate is most adequately conceptualized as a summary perception which people have of (or about) an organization. It is, then, a global impression of what the organization is" (Schneider & Snyder, 1975, p. 318). This implies that each person's conceptualization of an organization depends upon context and/or the information about the organization that is operative for that particular individual. Schneider and Reichers (1983) spoke of the "climate approach to studying work contexts"
(p. 20), noting that how behavior and attitudes are affected is grounded in perceptions. To find perceptual relationships which can describe an overall picture, climate researchers focus on aggregated (group level) data (Schneider & Snyder, 1975). Some researchers who are particularly concerned with having a large number of subjects in climate studies use individual perceptions as the level of analysis, but most climate researchers agree that it makes conceptual sense to search for some degree of consensus in a work force (Payne, Fineman, and Wall, 1976).

The group concept of climate appears to be prevalent. Tagiuri (1968) defined climate as a summary concept concerning total environmental quality in a school or organization, described in terms of characteristics or attributes which are valued in the organization. Field and Abelson (1982) suggested that climate described the internal organizational environment as perceived by those within the organization. Hoy and Miskel's (1996) view of organizational climate concerned the general feel of a school, the internal organizational quality of school life, and also in terms of leadership characteristics and participant personalities. For purposes of the present study, school climate was pursued as a group concept, defined as the perception of teachers within each school of the internal environment of the organization.

Climate definitions differ as to which variables are identified as being important, and which method should be used to correctly assess climate (Anderson, 1982; Pallas, 1988). Originating in the 1960s, school-climate
research utilized "instruments, theory, and methods" (Anderson, 1982, p. 368) from organizational climate research as well as school effects research perspectives (Miskel & Ogawa, 1988). The first perspective offered narrow organizational climate preconceptualizations and generalizations, while the second perspective provided a much broader strategy marked by the simultaneous examination of many school-level factors for effect on academic performance (Miskel & Ogawa, 1988). One of these factors was school climate. Although initially connected to these perspectives, the school climate construct eventually emerged as a separate line of inquiry (Anderson, 1982).

In most of the research on schools as organizations, divergent theoretical perspectives produced differing climate viewpoints (Anderson, 1982; Miskel & Ogawa, 1988), largely due to conflicting ideas of what comprised climate. For example, an economic theoretical perspective such as Input-Output Theory assumes that some combination of inputs in a school creates a climate producing either positive or negative outputs (Anderson, 1982). Sociological theory assumes school climate results from a complex interaction of social relationships and educational objectives (Miskel & Ogawa, 1988), while ecological theory combines economics with environmental social processes and/or culture to examine functions of the entire organization (Anderson, 1982). Ecological theory is most often used for classroom research, while sociological theory has been most often used for school climate inquiries (Anderson, 1982).
In 1974, Moos proposed a social ecology system identifying climate as the interaction of individuals with other physical and social dimensions of the environment (Anderson, 1982). In this theory, climate was one of six dimensions used to study human environment. In a definitive meta-analysis of school climate research, however, Anderson (1982) stated a preference for Tagiuri's (1968) ecological theory, a broad approach which combined economic and sociological perspectives to study climate (Miskel & Ogawa, 1988). The entire school system could be examined using Tagiuri's four dimensions: (1) Ecology, or physical and material aspects; (2) Milieu, or background aspects regarding individuals and groups (i.e., SES, ability, race); (3) Social System, or relationships of persons and groups; and (4) Culture, or belief systems, values, executive structures, and meaning (Anderson, 1982; Miskel & Ogawa, 1988; Tagiuri, 1968).

In Tagiuri's (1968) definition of climate, variables other than personal traits of participants were emphasized. For example, the ecology category included building characteristics and school size. Under the milieu category were teacher and some student characteristics and morale. The social system category included variables regarding patterns or rules of interacting and operating in the school, such as student behavior, teacher shared decision-making, communication, instructional program, and interpersonal relationships. Within the culture category were variables
such as emphasis on academics, rewards and praise, and teacher commitment (Anderson, 1982; Tagiuri, 1968).

School effects studies simultaneously used variables which could be classified in many or all of Tagiuri’s (1968) dimensions. For example, Rutter, Maughan, Mortimore, and Ouston (1979) used ecology dimension variables (school size; age, decor, and maintenance of facilities) in 12 secondary schools to look for effects on the outcome variables attendance, achievement, behavior, and delinquency. McDill and Rigsby (1973) used milieu dimension variables such as racial and socioeconomic (SES) composition of student bodies, as well as teacher salaries, to examine relationships with student achievement or aspirations among high school students. Rutter and his colleagues also examined social systems dimension variables such as administrative organization, teacher decision-making participation, and teacher peer relationships; and McDill and Rigsby included participatory role involvement of school professionals in instructional activities as well as ability grouping of students. Cultural dimension variables were likewise used, such as emphasis placed on academics by school staff, and norms shared by students (McDill & Rigsby, 1973), and expectations of teachers and administrators for student academic performance (Rutter et al., 1979).

The findings of Rutter et al. (1979) showed large differences among 12 secondary schools in attendance, behavior, attainment, and delinquency rates of students, despite the earlier school experiences of the students or
what could be described as school intake patterns. There was a strong inference that individual schools influenced student differences in behavior and attainment found to exist between schools, over and above other changes which had occurred in the lives of students during the high school years. Although individual characteristics, family circumstances, and home background were shown to be highly associated with pupil outcome, there were also school-level differences found. Physical characteristics of schools (size, age, available space) did not significantly affect differences among schools, but school social institutional characteristics did affect differences among school outcomes. These social institutional characteristics consisted of academic emphasis, teaching actions, incentive and reward systems, learning conditions, and the extent to which students were able to assume responsibility (Rutter et al., 1979).

In their study on academic outcomes of students, McDill and Rigsby (1973) studied the extent to which educational and social environments of high schools vary, and tried to identify sources of variations in high school climates. Results indicated that student body socioeconomic (SES) composition had no real effect on the educational outcomes measured in the study, although it was acknowledged that weak SES measures were used, and further research into this link was encouraged. The researchers also recognized the limitation of their research as a cross-sectional rather than a longitudinal study, and as such open to criticism that climate differences
could be a function of differences in personal and background factors which students bring with them to the high school experience.

Pallas (1988) reported on data from the 1984 High School and Beyond Study, a national longitudinal investigation of experiences of high school youth, sponsored by the Center for Statistics, Office of Educational Research and Improvement. Respondents were secondary school teachers in an effective schools study which included a random sample of at least 30 full-time classroom teachers in each of 538 secondary schools. A 10-page questionnaire covered teacher attitudes, classroom and other teaching activities, background information, and school characteristics. With responses from 10,382 teachers, results indicated the strongest correlate of climate is average academic ability of entering students relative to the national norm. The proportion of economically disadvantaged and minority students in a school was shown to be related to school climate, suggesting that some factors beyond the control of most schools play a part in school climate. Also correlated with school climate was school location, with suburban and rural schools similar but urban schools different, and school size, with small schools in general having better climates than large schools.

Problems in the Measurement of School Climate

School climate as a construct is both important and complicated. The conceptual overlap which seems to exist between culture and climate poses questions about which construct is proper to use in many research situations. There is also debate over which organizational variables should
be used to best explain climate. Climate differences have been shown to exist in studies using different combinations of variables, although not attributable to such obvious factors as buildings or available resources (Rutter, et al, 1979).

There are questions about the appropriateness of studying school climate at all (Anderson, 1982). Some researchers believe that student background is inseparable from other school variables, thus confounding climate research results; but others think school climate research is not only possible but also desirable, offering a holistic view of climate which is realistic. In support of this pragmatic view, Anderson (1982) believes that "some composite of school characteristics does create a climate which accounts for a substantial portion of the variance in student outcomes" (p. 372). Rutter et al. (1979) likewise endorsed the holistic view of climate, observing that typical school effects research studies were unrealistic in failing to consider underlying internal aspects of school life such as attitudes, values, and social aspects.

Another concern is the validity of participant perceptions versus use of purely objective measures in school climate research. Anderson (1982) noted several problems inherent in using perceptual data. First, previous individual experiences, values, and needs influence perceptions. Second, using individual perceptions to measure group or organizational climate adds variance, since both individual and organizational differences produce variance. There is also question about whether climate can be considered
organizational without true consensus among those in the organization, with consensus considered to occur only when there is minimal variance of mean scores of individuals (Field & Abelson, 1982). And third, the accuracy of perceptual data is questioned, as it is difficult to distinguish perception from attitude (Anderson, 1982).

Perceptual data is nonetheless usually accepted as indicative of climate, since within organizations there are groups and individuals whose perceptions form a composite view of organizational climate. The prevailing view is that perceived behavior is more important than actual behavior, since it is perception which controls individual responses (Anderson, 1982; Halpin & Croft, 1962). In cautioning against using perceptual data exclusively to study climate, Miskel and Ogawa (1988) proposed a more balanced approach combining perceptual data with qualitative methods (e.g., observations, interviews) to get a complete climate picture by triangulating the data, or combining methodologies in a research study (Patton, 1990), to enhance validation of results (Miskel & Ogawa, 1988).

In defining climate, how well perceptions and orientations of participants in a school converge is critical (Hoy & Miskel, 1996). Research shows climate differences between schools, but agreement in participant perceptions about climate characteristics within settings (Hoy, Tarter, & Kottkamp, 1991; Stockard & Mayberry, 1992). Since most variation in teacher perceptions of climate occurred within and not among secondary

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schools, however, Pallas (1988) questioned the school climate model which derived from effective schools research for use in secondary schools.

Researchers in sociology and educational administration emphasized the vague nature of the climate construct, with lack of clarity in both its operationalization and conceptualization (Anderson, 1982; Miskel & Ogawa, 1988). Questions remain about whether organizational or individual aspects more accurately reflect the overall climate phenomenon (Anderson, 1982; Jones & James, 1979). Most researchers agree that characteristics of interacting variables should be combined, but there is no real consensus about which variables best explain climate. "In principle, just about everything may make a difference to behavior, yet to include everything is not useful" (Tagiuri, 1968, p. 14). A further concern is that some constructs are more abstract, and the greater degrees of abstraction cause constructs to become harder to operationalize, which in turn makes findings harder to compare (Anderson, 1982). Despite the general imprecision in defining school climate, a number of instruments have attempted to operationally define its varied aspects.

**Review of Major School Climate Instruments**

This section presents three of the most widely recognized instruments which operationally define school climate, and which were designed to assess specific conceptualizations of school climate. They were typically used in the context of a large study focusing on relationships between school climate and other school level variables. A fourth instrument is also
described, as it is the instrument selected for use in this study. The obvious
diversity in these measures underscores the complex task of assessing the
multi-faceted dimensions of school climate.

First, Halpin and Croft's (1962) *Organizational Climate Description*
*Questionnaire* (OCDQ) is based on a conceptualization of climate as quality
of faculty-principal relations, and the presence of two organizational
dimensions known as initiating structure and consideration. A broad
influence in school climate research (Miskel & Ogawa, 1988), the OCDQ
was developed to identify important aspects of teacher-principal and
teacher-teacher relationships. According to Hoy et al. (1991), the
instrument includes eight OCDQ subscales equally representative of two
interactive dimensions. Four subscales form the Teacher-Teacher battery
(Espirit, Intimacy, Hindrance, Disengagement), and four subscales form the
Teacher-Principal battery (Consideration, Aloofness, Thrust, Production
Emphasis). The following are examples of conceptual definitions
constructed within each of the OCDQ's two dimensions:

Teacher-Teacher Interactive Dimension (characteristics of
teachers): Espirit refers to “morale growing out of a sense of
both task accompaniment and the satisfaction of social needs”

Teacher-Principal Interactive Dimension (characteristics of
leader): Thrust refers to “dynamic behavior in which the
principal attempts to ‘move the organization’ through the
example the principal personally sets for teachers” (Hoy et al.,
Halpin and Croft (1962) also identified six basic climate profiles on a continuum (Open, Autonomous, Controlled, Familiar, Paternal, Closed), and used a questionnaire seeking professional staff perceptions to identify school climate in terms of where subordinate and leader interactions placed the school on the continuum (Anderson, 1982). Subsequent OCDQ revisions resulted in three simplified versions for elementary, middle, and secondary schools (Anderson, 1982). The secondary school instrument features 34 items aimed specifically at describing behavior of secondary principals and teachers, with typical items including “The principal rules with an iron fist” and “Teachers help and support each other” (Hoy et al., 1991, p. 53).

A second conceptualization of school climate, organizational health, defines a healthy organization as “one that not only survives in its environment, but continues to grow and prosper over the long term” (Miles, 1969, p. 378), one whose “technical, managerial, and institutional levels are in harmony” (Hoy & Miskel, 1996, p. 151). The Organizational Health Inventory (OHI), a 44-item descriptive questionnaire aimed at professional school staff, measures seven dimensions of organizational health interaction (Institutional Integrity, Principal Influence, Consideration, Initiating Structure, Resource Support, Morale, and Academic Emphasis). Typical items include “The principal is able to work well with his superintendent” and “Teachers in this school like each other” (Hoy et al., 1991, p. 72). Scores of subjects combine to provide an index of health, with the higher the score,
the healthier the school dynamics (Hoy et al., 1991). Three separate OHI climate instruments emerged over time, since leadership roles were found to differ with a school's grade levels, with secondary school leadership more complex than that of elementary and middle schools (Hoy & Miskel, 1996).

A third orientation of school social climate is conceptualized in terms of patterns that teachers and principals use to control students. According to Carlson (1964), control tends to be the most acute problem in public schools as service organizations. Hoy and Miskel (1996) offered an explanation for why this is so:

> Public schools . . . are service organizations that have no choice in the selection of clients, and the clients must (in the legal sense) participate in the organization. These organizations are confronted with clients who may have little or no desire for the services of the organization, a factor that accentuates the problem of client control. (p. 157)

The concept of pupil control is a necessity to school life. The Pupil-Control Ideology (PCI), a 20-item instrument with five possible item responses ranging from strongly agree to strongly disagree, includes items such as “It is desirable to require pupils to sit in assigned seats during assemblies” and “Pupils should not be permitted to contradict the statements of a teacher in class” (Willower, Eidell, & Hoy, 1967, p. 47-48).

Although not as complex a measure as the OCDQ or the OHI, the PCI differs in its perspective of school climate in that it includes students, focusing on student-teacher relationships. To provide a general view of school personality (Anderson, 1982), the PCI uses custodialism and
humanism on a continuum as ways to think about educator orientations toward controlling students (Lunenburg & Schmidt, 1989).

A fourth instrument for measuring climate will be used for this study. It utilizes three subscales derived from a study by Taylor and Tashakkori (1995), who used teacher data from the National Education Longitudinal Study (NELS) 1990 First Follow-up (see Ingels, Scott, Lindmark, Frankel, & Myers, 1992). Conducted by the National Center for Educational Statistics (NCES), the NELS collected data using a multistage, cluster-sampling design which primarily targeted over 25,000 tenth grade students at 1,296 schools. With either one or two teachers per student completing a questionnaire giving perceptions about the student and school-related matters, a data set of 9,987 teacher instruments was produced.

Taylor and Tashakkori (1995) constructed four composite variables using principal components analysis. From teacher perceptual items on climate, the school climate composite variable resulted in five factors, three of which will be used as subscales in this study. These three subscales were named by Taylor and Tashakkori (1995) as student discipline, faculty collegiality, and lack of obstacles to teaching. The reader is reminded that a thorough description of this instrument appears in chapter 3. An example of the items used in each of the three subscales follows:

**From the Student Discipline subscale:** Class cutting is a problem at this school (Taylor & Tashakkori, 1995).
From the Faculty Collegiality subscale: A great deal of cooperative effort exists among staff (Taylor & Tashakkori, 1995).

From the Obstacles to Teaching subscale: Students have attitudes that reduce academic success (Taylor & Tashakkori, 1995).

Although abbreviated, this review of climate instruments illustrates the wide diversity in conceptualizing school climate. The complexity inherent in defining school climate variables and their relationships is also highlighted.

Summary of Section on School Climate

Anderson's 1982 meta-analysis of research constructively synthesized the often confusing research base on school climate, but failed to show consensus. There may never be consensus, given the countless climate variables to examine, the many conceivable combinations of those variables, and the complexity of organizational and environmental interactions. Among several alternatives Anderson (1982) suggested to optimize school climate research were careful selection of relevant variables (that can be directly influenced); maximum variation of relevant variables while blocking for variables normally correlated with school context (e.g., SES, school size); and the use of outliers (top-performing schools), matching, and in-depth observation. Tagiuri (1968) pointed out that researchers must focus their efforts when studying climate, despite the fact that almost everything may make a difference to behavior.
The present study examined three climate characteristics (variables) within the framework of block scheduling. Selected outcome variables of student discipline, faculty collegiality, and obstacles to teaching (Taylor & Tashakkori, 1995), are discussed in the next sections.

Outcome Variables

Student Discipline. Block scheduling and student behavior are linked in the perspectives framing block scheduling, which indicate that number of disciplinary incidents will decrease with block scheduling. For example, the smaller classes and more interactive learning of block scheduling (Queen et al., 1997) should lead to a calmer, more personalized school climate (Fallon, 1995), with less isolation for both teachers and students (Kruse & Kruse, 1995; Irmscher, 1996), resulting in improved attitudes toward learning and discipline since problems often abate when students feel more invested in relationships. Compared to the stressful pace of traditional scheduling, the calmer and simpler school day of block scheduling promotes more focused learning (Canady & Rettig, 1995a) and discourages misbehavior.

Carroll (1990) criticized the typical American high school as "an impersonalized, unproductive, frenetic environment" (p. 365) for both students and teachers. High school teachers in traditional schools are under tremendous stress simply dealing with the large numbers of students in their classrooms each day, according to Canady and Rettig (1995a), who outlined three ways block scheduling may alleviate student discipline problems. First, with block scheduling, there are fewer transitions for
students. Many referrals occur during transitions between classes, when students sense there is inadequate supervision. Sometimes a problem which begins during a transition, will extend into the classroom, becoming a problem for the classroom teacher. Second, with teachers responsible for fewer students, and students answering to fewer teachers in a given day, the more manageable numbers of block scheduling provide greater potential for improved student-teacher affiliations, which in turn could curb student disrespect and misbehavior when explosive situations arise. Third, the longer instructional times provided by block scheduling allow teachers more time to deal with student problems. Time is so valuable in traditional scheduling’s short instructional periods, that teachers feel pressured to cover the curriculum. Stressed teachers are less likely to deal with troublesome students, and more likely to send them to the office, which contributes to a negative disciplinary climate in the classroom.

The impersonal, hectic pace of the typical single-period high school schedule is a daily fight for survival for both teachers and students (Canady & Rettig, 1995a). In many high schools, lack of student engagement in the learning process is commonplace (Sizer, 1986). Often, students manipulate their work load through a tacit understanding with teachers “in which they exchange attendance and compliant behavior for academic expectations” (Murphy, 1991) p. 52). Block scheduling theoretically leads to systemic enhancement of the academic environment (Edwards, 1995) and increased student engagement through interactivity in the classroom (Queen et al.,
1997), with more of a student-as-worker emphasis (Sizer, 1986), more cohesive learning (Canady & Rettig, 1995a), and better student-teacher relations (Fallon, 1995). Thus, block scheduling promotes positive student behavior through means such as increased engagement and better interpersonal relationships, rather than through teacher acquiescence and tacit intimidation by students.

**Faculty Collegiality.** The perspectives framing block scheduling suggest that faculty collegiality is naturally encouraged. According to Carroll (1990), when schools change to block scheduling, a major teacher concern becomes how to redesign lessons for longer instructional periods. This encourages teachers to share professional expertise, materials, and ideas, thus cultivating collegiality and collaboration.

Canady and Rettig (1995a) agree that block scheduling supports teacher professionalism and interrelationships through staff development and by increasing opportunities for collegiality and collaboration. With more teacher preparation time, plus sharing of common concerns, teachers naturally tend to become good resources for one another. An interactive emphasis on instruction further encourages professional consultation, team teaching, and interdisciplinary approaches.

**Obstacles to Teaching.** Traditional high school schedules limit instructional flexibility in terms of strategies teachers can use (Murphy, 1991). For example, time constraints make it extremely difficult for lab work or cooperative learning to succeed, or for creative approaches such as
simulations, role-playing, or concept development to be used (Canady & Rettig, 1995a). When instruction must be tailored to fit critically short time periods, lecture prevails as the most efficient way to get the job done. This lack of instructional diversity often leads to discipline problems.

Scheduling affects curriculum organization and delivery. By dividing the school day into seven or eight instructional periods, traditional scheduling offers many disconnected bits of information for students to process at once, with rarely the time to study or teach anything in depth. Student stress is heightened by the piecemeal approach, and dealing with too many teachers and demands. Students often fail to see the relevance of making an effort, and thus student apathy can occur. Teachers must push even harder to cover the prescribed curriculum in an insufficient time format which is further compromised by interruptions, administrative routines, and student problems (Canady & Rettig, 1995a).

Block scheduling offers benefits to teachers. Fewer classes, smaller student loads per semester (Shoenstein, 1996), increased preparation time, and decreased number of preparations (Canady & Rettig, 1995a) are aspects which reduce teacher stress. Fewer classes mean fewer administrative duties required in teaching classes and assessing students. Since students are also less stressed by learning and time management demands, they bring fewer problems to a more personalized school setting. Block scheduling thus presents fewer obstacles to the teaching process.
Chapter Summary

The current chapter began with a general review of high school scheduling, then concentrated on 4X4 block scheduling as the focus of this study. Although many block scheduling types exist, the most popular format is called 4X4 (or semestered) block scheduling. The positive effects of block scheduling reported in the literature include facilitated student learning and achievement, greater instructional variety, heightened teacher professionalism, increased interpersonal relationships in the overall school environment, and improved student behavior. The use of intensive scheduling in secondary schools has steadily escalated, yet block scheduling remains an understudied area in educational literature.

With elements of climate serving as outcome variables for the present study, the second part of the chapter focused on climate, particularly the school climate construct usually defined in terms of shared participant perceptions of behavior (Ashforth, 1985). As a multi-dimensional concept, climate is not easily studied. There are countless climate variables to examine, many possible combinations of variables, and complex organizational and environmental interactions. To optimize school climate research, Anderson (1982) suggested careful selection of relevant variables that can be directly influenced; maximum variation of relevant variables while blocking for variables normally correlated with school context (e.g., school size, SES); and the use of top-performing schools, matching, and in-depth observation. This study examined the interaction of block scheduling
and the climate variables student discipline, faculty collegiality, and obstacles to teaching (Taylor & Tashakkori, 1995) in light of the perspectives framing block scheduling.
CHAPTER THREE: METHODOLOGY

Introduction

Block scheduling has increasingly been used in schools during the last 10 years, with estimates that 50% of American high schools used the format by 1995 (Canady & Rettig, 1995a). In Louisiana, block scheduling began with three high schools in the 1995-96 school year, then mushroomed when an additional 50 schools adopted the format during the ensuing two years. Yet despite its increasing use in schools, block scheduling represents an understudied area in educational literature, with little empirical evidence regarding its effects in successive years at the high school level.

The fundamental purpose of this study was to examine the effects of block scheduling on overall school climate in high schools, and on three specific climate dimensions, specifically, student discipline, faculty collegiality, and obstacles to teaching. There were two secondary objectives:

1. To determine qualitative differences regarding the dimensions of climate which may exist among high schools that have been block scheduled for 3 or more years, high schools that have been block scheduled for 2 years, and high schools that are traditionally scheduled.

2. To determine qualitative differences regarding dimensions of climate which may exist between the school with the most positive teacher report of climate, and the school with the least positive teacher report
of climate, provided both schools had at least 3 years involvement with block scheduling.

For clarity, and to remind the reader of basic differences between 4X4 block scheduling and traditional (single-period) scheduling, Table 5 which first appeared in chapter 2 of this dissertation has been repeated in this chapter.

Researchers have cautioned against using perceptual data exclusively to study climate, preferring a triangulated approach which combines perceptual data with qualitative methods such as observations or interviews for a more complete climate picture (Anderson, 1982; Miskel & Ogawa, 1988). Of the four basic types of triangulation identified by Denzin (1978), methodological and data triangulation are used in a causal-comparative research design (Gall, Borg & Gall, 1996) in the current study to examine climate effects of high school scheduling type, a naturally occurring phenomenon not manipulated by the researcher. Methodological triangulation was employed, with both quantitative and qualitative data gathering and data analysis utilized. Data triangulation was actualized through use of multiple sources, including archival, survey, observational, and interview data.

The study was conducted using two phases of data collection. Phase I included a survey instrument seeking teacher perceptions of school climate, two researcher observations, and an interview with an administrator in each of the participating schools. Survey results were analyzed using quantitative techniques, while analysis of observational and interview data
Table 5  
Claims Made in the Literature Contrasting Traditional and Block Scheduling

<table>
<thead>
<tr>
<th>Dimensions of Contrast</th>
<th>Traditional Scheduling</th>
<th>4X4 Block Scheduling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher daily student load, instructional time</td>
<td>125-180/day for entire year, with larger class sizes; daily teach five or six 50-minute periods</td>
<td>60-90/day, new students at half year; smaller classes; teach three 90-minute blocks each day</td>
</tr>
<tr>
<td>Teacher daily preparation time</td>
<td>One class period (50 minutes)</td>
<td>One class period (90 minutes)</td>
</tr>
<tr>
<td>Classes per day</td>
<td>Six or seven</td>
<td>Four</td>
</tr>
<tr>
<td>Instruction</td>
<td>Teacher-oriented; teachers are lecturers; time lost in routine duties, beginnings, endings</td>
<td>Student-oriented; teachers are coaches, facilitators; fewer routine duties, class beginnings and endings</td>
</tr>
<tr>
<td>Flexibility and Productivity</td>
<td>Limited by time constraints</td>
<td>Enhanced by time element; student learning needs are better addressed</td>
</tr>
<tr>
<td>Student/teacher interpersonal relationships</td>
<td>Hectic time frame per class limits interpersonal exchanges</td>
<td>Teachers know students better, can give more individualized attention</td>
</tr>
<tr>
<td>Teacher peer relationships</td>
<td>In theory, instructional variety limited by short classes; less time for collegiality/collaboration</td>
<td>In theory, more class time abets experimentation; more preparation time boosts collaborative planning</td>
</tr>
<tr>
<td>Stress level</td>
<td>Greater, due to time crunch, grueling pace</td>
<td>Eased--fewer classes, more student/teacher interactions</td>
</tr>
<tr>
<td>Number of disciplinary incidents</td>
<td>In theory, greater; more transition time; less feelings of safety</td>
<td>In theory, fewer; less transition time, greater feelings of safety</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 5 (continued)

<table>
<thead>
<tr>
<th>Dimensions of Contrast</th>
<th>Traditional Scheduling</th>
<th>4X4 Block Scheduling</th>
</tr>
</thead>
<tbody>
<tr>
<td>School climate</td>
<td>Fast-paced, less personalized</td>
<td>Usually calmer, quieter, more personalized</td>
</tr>
<tr>
<td>Classroom climate</td>
<td>Quiet expected; emphasis on notes and lecture; less student engagement</td>
<td>More activity; classes are noisier, more interactive; students more engaged</td>
</tr>
</tbody>
</table>


involved qualitative methods. Phase II used archival data and teacher interviews to investigate climate differences in two of the 3-year block scheduled schools, which had been identified using Phase I results. Phase I data was utilized as needed for triangulation in Phase II. A research methodology flowchart is provided in Figure 2.

Context Terms and/or Variables

Terms used in the present study were operationally defined, and are presented in clusters by type.

Community type—a school context variable based on school location which shows classification of a high school as urban, suburban, or rural, using data from the Louisiana Department of Education (LDE) School District Profiles Report for School Year (SY) 1997-98.
Phase I
(21 high schools)

Sample of 3 groups of schools (13 districts)

Climate Survey (Sample of 883 teachers)

Administrator Interview and 2 observations per school

Mean Data (Chapter 4)

Factor Analysis
MANOVA
ANOVA

Phase II
(2 high schools)

Case Studies
(mean data used to choose schools)
Teacher interviews

Phase II data triangulated with Phase I interview and observational data

Figure 2. Research Methodology Flowchart

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In Louisiana, community type identification for schools is based on locale codes assigned by the U. S. Department of Commerce, Bureau of the Census. The data provide a description of a school based on its proximity to populous areas, and includes seven community types.

1. **Large City**—a city with a population greater than or equal to 250,000.
2. **Mid-size City**—a city with a population less than 250,000.
3. **Urban Fringe of a Large City**—any incorporated place or non-place territory defined as urban by the Census Bureau.
4. **Urban Fringe of a Mid-size City**—any incorporated place or non-place territory defined as urban by the Census Bureau.
5. **Large Town**—an incorporated place with a population of 25,000 or more.
6. **Small Town**—an incorporated place with a population between 2,500 and 25,000.
7. **Rural**—any incorporated place or non-place territory designated as rural by the Census Bureau.

To select a sample for the current study, the seven Census Bureau codes were collapsed into three categories:

1. **Urban**—a school with a Census Bureau locale code of 1 or 2.
2. **Suburban**—a school with a Census Bureau locale code of 3, 4, or 5.
3. **Rural**—a school with a Census Bureau locale code of 6 or 7.

**High school**—a school serving students in grades 9-12 or in grades 10-12.

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School size—a school context variable based upon number of high school students (population), as reflected in data from LDE Student Information System Reports for 1997-98.

Socio-economic status (SES)—a school context variable derived from a student background variable based on free and reduced price lunch data, provided by LDE 1997-98 Student Information System Reports. These data reflect the percentage of students qualified to receive free and/or reduced price lunch based on federal guidelines used to define poverty.

Scheduling Terms

4X4 block scheduling—a school scheduling configuration in which students enroll in four courses per semester, with courses meeting daily in 90-minute blocks of time. At the end of each semester, students earn one Carnegie unit of credit for each course successfully completed. Teachers have a 90-minute block for preparation, and teach three blocks per day.

Traditional scheduling—a school scheduling configuration in which a school day is divided into six to eight class periods of equal duration (usually 50-60 minutes). Teachers have one 50- or 60-minute preparation period, and teach five to seven classes per day.

Outcome Variables

Faculty collegiality—cooperative effort of staff members, reliance of staff members upon one another, shared staff beliefs about school mission, supportive department chair, continuous professional development, and feeling among staff that school is like a family (Taylor & Tashakkori, 1995).
Obstacles to teaching—student misbehavior, student inability to learn, student drug use, student attitudes and habits which reduce academic success, and routine duties which interfere with the teaching process (Taylor & Tashakkori, 1995).

Student discipline—absenteeism, class cutting, drug and/or alcohol abuse, gang activities, physical conflicts, weapons possession, robbery or theft, tardiness to class, vandalism, and verbal abuse of teachers (Ingels et al., 1992; Taylor & Tashakkori, 1995).

Chapter Organization

Chapter 3 is divided into three main sections. The first two sections each pertain to one phase of the study, including a statement of pertinent research hypotheses and/or questions addressed, identification of the sample, description of the instruments, level of analysis, and data analysis procedures. The third and final section provides a summary of the chapter.

Methodology for Phase I

Statement of Research Hypotheses and Question One

Four research hypotheses and one research question identified in the first chapter were addressed by Phase I of this study.

Hypothesis 1. Overall climate, measured by the variables Student Discipline, Faculty Collegiality, and Obstacles to Teaching, as reported by teachers, will be different among groups.

Hypothesis 2. Mean scores on the climate variable Student Discipline, as reported by teachers, will be highest for Group I high schools.
that have been block scheduled for three or more years, and lowest for Group III traditionally scheduled high schools.

**Hypothesis 3.** Mean scores on the climate variable Faculty Collegiality, as reported by teachers, will be highest for Group I high schools that have been block scheduled for three or more years, and lowest for Group III traditionally scheduled high schools.

**Hypothesis 4.** Mean scores on the climate variable Obstacles to Teaching, as reported by teachers, will be highest for Group I high schools that have been block scheduled for three or more years, and lowest for Group III traditionally scheduled high schools.

**Question 1.** Are there qualitative differences regarding climate among Group I high schools that have been block scheduled for 3 or more years, Group II high schools that have been block scheduled for 2 years, and Group III high schools that are traditionally scheduled?

**Identification of the Sample**

**The selection of schools.** The present study was conducted in the state of Louisiana, where there are a total of 1,445 public schools in 66 public school districts (LDE Louisiana Progress Profiles State Report for SY 1997-98). Of the 66 districts, 64 are parish systems and 2 are city systems. Block scheduled high schools were identified through LDE archival documents (LDE Bulletin 741, Application for Alternative School Status, Waiver of Time Requirements, 1997).
Based on LDE data for percentage free and reduced price lunch as a measure of SES, school size, and community type (LDE School District Profiles Report for SY 1997-98), block scheduled and traditional scheduled high schools were selected for the sample. The sample included 21 schools, in three groups of seven schools each, with a mean of 63 teachers per school.

Examining the link between block scheduling and school climate, the present study had a target population of all 4X4 block scheduled and all traditionally scheduled public high schools in Louisiana. A total of 44 Louisiana public high schools was the accessible population of high schools with 4X4 block scheduling.

Group I included high schools in a 4X4 block scheduling format for 3 or more years, with an accessible population of 18 schools. Group II included high schools in a 4X4 block scheduling format for 2 years, with an accessible population of 26 schools. Group III included high schools in a traditional scheduling format, with an accessible population in excess of 300 schools. Matching was based on SES, and to the degree possible, on school size and community type. All schools were purposefully selected. The groups of blocked scheduled schools were first matched (Tashakkori & Teddlie, 1998), then Group III was matched to Groups I and II.

Several procedures were used to select block scheduled schools for Groups I and II. First, due to a wide range of school size (from 80 to 1916 students in the school population), school size mean and standard deviation were calculated for the entire sample of 44 block scheduled schools. Any
school with a student population more than one standard deviation from the mean was excluded. After rounding, 30 schools with student populations of 400 to 1450 remained in the accessible population of block scheduled schools, with 15 schools in Group I, and 15 schools in Group II.

Second, LDE free and reduced price lunch data (used as a measure of SES) presented problems which could not be resolved for several schools from a large urban district. After all schools within that district were excluded from the accessible population of block scheduled schools, 10 schools remained in Group I and 12 schools remained in Group II.

Table 6 shows results of matched selection of Group I, II and III schools. The 21 schools in the final sample were located in 13 school districts, or 19.7% of the state total of 66 school districts. These 13 districts represented a geographical cross-section of the state.

**Characteristics of the teacher sample.** All full-time teachers in the 21 schools were provided survey forms and asked to participate in the study. A total of 1,320 teachers received survey forms, with the overall response rate of 66.9% reflecting responses from 883 teachers. Table 7 shows teacher response rates and gender, with data arranged by school, by group, and by total sample. The response rate of teachers in Groups I (68.6%) and III (69.8%) was higher than that of teachers in Group II (62%).

Descriptive statistics allowed for profiling respondents by ethnicity and certification, as shown in Table 8. In some demographic response categories reported in this and subsequent tables, missing data may cause

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Table 6  Final Groups for Matched Sample

<table>
<thead>
<tr>
<th>School</th>
<th>F/R %</th>
<th>School Size</th>
<th>Community Type*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group I (3 or more years Block Scheduling)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres</td>
<td>72</td>
<td>668</td>
<td>R</td>
</tr>
<tr>
<td>Blingham</td>
<td>34</td>
<td>868</td>
<td>R</td>
</tr>
<tr>
<td>Boothsfield</td>
<td>52</td>
<td>602</td>
<td>R</td>
</tr>
<tr>
<td>Charleston</td>
<td>39</td>
<td>1223</td>
<td>U</td>
</tr>
<tr>
<td>Clarkstonsville</td>
<td>32</td>
<td>1227</td>
<td>S</td>
</tr>
<tr>
<td>Davensport</td>
<td>27</td>
<td>1041</td>
<td>U</td>
</tr>
<tr>
<td>Frankfort</td>
<td>34</td>
<td>1450</td>
<td>S</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>41</td>
<td>1011</td>
<td></td>
</tr>
<tr>
<td><strong>Group II (2 years Block Scheduling)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicholson Park</td>
<td>28</td>
<td>935</td>
<td>S</td>
</tr>
<tr>
<td>Okeefe</td>
<td>45</td>
<td>1047</td>
<td>U</td>
</tr>
<tr>
<td>Ossenboro</td>
<td>32</td>
<td>1133</td>
<td>S</td>
</tr>
<tr>
<td>Pearland</td>
<td>50</td>
<td>1250</td>
<td>U</td>
</tr>
<tr>
<td>Rolfe</td>
<td>48</td>
<td>659</td>
<td>R</td>
</tr>
<tr>
<td>Sloan</td>
<td>37</td>
<td>1025</td>
<td>S</td>
</tr>
<tr>
<td>Stratford</td>
<td>39</td>
<td>537</td>
<td>R</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>40</td>
<td>941</td>
<td></td>
</tr>
<tr>
<td><strong>Group III (Traditional Scheduling)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinaberry</td>
<td>44</td>
<td>1053</td>
<td>R</td>
</tr>
<tr>
<td>Cypress Pointe</td>
<td>26</td>
<td>1020</td>
<td>S</td>
</tr>
<tr>
<td>Dogwood Circle</td>
<td>43</td>
<td>1297</td>
<td>U</td>
</tr>
<tr>
<td>Juniper</td>
<td>47</td>
<td>1166</td>
<td>R</td>
</tr>
<tr>
<td>Silver Maple</td>
<td>49</td>
<td>578</td>
<td>R</td>
</tr>
<tr>
<td>Sycamore</td>
<td>23</td>
<td>728</td>
<td>S</td>
</tr>
<tr>
<td>Yew</td>
<td>45</td>
<td>955</td>
<td>U</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>40</td>
<td>971</td>
<td></td>
</tr>
</tbody>
</table>

*R = Rural; S = Suburban; U = Urban

total number of respondents to vary. The typical respondent was female, by a margin of two to one, and white. Less than 15% of participants reported
Table 7  
**Teacher Response Rate and Gender**

<table>
<thead>
<tr>
<th>School</th>
<th>Total Teachers/ Responses</th>
<th>Response Rate (%)</th>
<th>Gender Number/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Female</td>
</tr>
<tr>
<td><strong>Group I (3+ years using block scheduling)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres</td>
<td>42/29</td>
<td>69.0</td>
<td>20/69</td>
</tr>
<tr>
<td>Blingham</td>
<td>65/23</td>
<td>35.4</td>
<td>17/74</td>
</tr>
<tr>
<td>Boothsfield</td>
<td>44/43</td>
<td>97.7</td>
<td>31/72</td>
</tr>
<tr>
<td>Charleston</td>
<td>76/52</td>
<td>68.4</td>
<td>42/81</td>
</tr>
<tr>
<td>Clarkstonsville</td>
<td>70/45</td>
<td>64.3</td>
<td>29/64</td>
</tr>
<tr>
<td>Davensport</td>
<td>62/38</td>
<td>61.3</td>
<td>21/55</td>
</tr>
<tr>
<td>Frankfort</td>
<td>100/85</td>
<td>85.0</td>
<td>51/60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>459/315</td>
<td>68.6</td>
<td>211/67</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>65.6/45</td>
<td>68.6</td>
<td>30/67</td>
</tr>
<tr>
<td><strong>Group II (2 years using block scheduling)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicholson Park</td>
<td>71/44</td>
<td>62.0</td>
<td>34/77</td>
</tr>
<tr>
<td>Okeefe</td>
<td>70/48</td>
<td>68.6</td>
<td>31/65</td>
</tr>
<tr>
<td>Ossenboro</td>
<td>66/49</td>
<td>74.2</td>
<td>36/73</td>
</tr>
<tr>
<td>Pearland</td>
<td>66/41</td>
<td>62.1</td>
<td>28/68</td>
</tr>
<tr>
<td>Rolfe</td>
<td>42/33</td>
<td>78.6</td>
<td>23/70</td>
</tr>
<tr>
<td>Sloan</td>
<td>65/48</td>
<td>43.1</td>
<td>20/71</td>
</tr>
<tr>
<td>Stratford</td>
<td>41/18</td>
<td>43.9</td>
<td>12/67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>421/261</td>
<td>62.0</td>
<td>184/70</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>60/37</td>
<td>62.0</td>
<td>26/70</td>
</tr>
<tr>
<td><strong>Group III (traditional scheduling)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinaberry</td>
<td>80/60</td>
<td>75.0</td>
<td>34/57</td>
</tr>
<tr>
<td>Cypress Pointe</td>
<td>69/49</td>
<td>71.0</td>
<td>23/47</td>
</tr>
<tr>
<td>Dogwood Circle</td>
<td>75/40</td>
<td>53.3</td>
<td>30/75</td>
</tr>
<tr>
<td>Juniper</td>
<td>72/43</td>
<td>59.7</td>
<td>31/72</td>
</tr>
<tr>
<td>Silver Maple</td>
<td>39/19</td>
<td>48.7</td>
<td>14/74</td>
</tr>
<tr>
<td>Sycamore</td>
<td>40/40</td>
<td>100.0</td>
<td>29/73</td>
</tr>
<tr>
<td>Yew</td>
<td>65/56</td>
<td>86.2</td>
<td>35/63</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>440/307</td>
<td>69.8</td>
<td>196/63</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>63/44</td>
<td>69.8</td>
<td>28/64</td>
</tr>
<tr>
<td><strong>Sample Total</strong></td>
<td>1,320/883</td>
<td></td>
<td>591/67</td>
</tr>
<tr>
<td><strong>Sample Mean</strong></td>
<td>66.9</td>
<td></td>
<td>28/67</td>
</tr>
</tbody>
</table>

**Note.** Percentages may not add to 100 due to rounding.
Table 8  Number/Percentage Teacher Ethnicity and Certification

<table>
<thead>
<tr>
<th>School</th>
<th>Ethnicity</th>
<th>Certified in All Subjects Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Acres</td>
<td>8/18</td>
<td>18/07</td>
</tr>
<tr>
<td>Blingham</td>
<td>5/11</td>
<td>17/07</td>
</tr>
<tr>
<td>Boothsfield</td>
<td>2/05</td>
<td>41/16</td>
</tr>
<tr>
<td>Charleson</td>
<td>7/16</td>
<td>42/16</td>
</tr>
<tr>
<td>Clarkstonsville</td>
<td>1/02</td>
<td>44/17</td>
</tr>
<tr>
<td>Davensport</td>
<td>6/14</td>
<td>32/12</td>
</tr>
<tr>
<td>Frankfort</td>
<td>15/34</td>
<td>67/26</td>
</tr>
<tr>
<td>Total</td>
<td>44/14</td>
<td>261/83</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicholson Park</td>
<td>4/18</td>
<td>39/17</td>
</tr>
<tr>
<td>Okeefe</td>
<td>6/27</td>
<td>41/17</td>
</tr>
<tr>
<td>Ossenboro</td>
<td>2/09</td>
<td>46/20</td>
</tr>
<tr>
<td>Pearland</td>
<td>6/27</td>
<td>34/15</td>
</tr>
<tr>
<td>Rolfe</td>
<td>2/09</td>
<td>30/13</td>
</tr>
<tr>
<td>Sloan</td>
<td>2/09</td>
<td>25/11</td>
</tr>
<tr>
<td>Stratford</td>
<td>18/08</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22/08</td>
<td>233/89</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinaberry</td>
<td>9/24</td>
<td>50/20</td>
</tr>
<tr>
<td>Cypress Pointe</td>
<td>1/03</td>
<td>46/18</td>
</tr>
<tr>
<td>Dogwood Circle</td>
<td>4/11</td>
<td>31/12</td>
</tr>
<tr>
<td>Juniper</td>
<td>5/14</td>
<td>35/14</td>
</tr>
<tr>
<td>Silver Maple</td>
<td>4/11</td>
<td>14/05</td>
</tr>
<tr>
<td>Sycamore</td>
<td>40/16</td>
<td></td>
</tr>
<tr>
<td>Yew</td>
<td>14/38</td>
<td>40/16</td>
</tr>
<tr>
<td>Total</td>
<td>37/12</td>
<td>256/84</td>
</tr>
<tr>
<td>Sample Total</td>
<td>103/12</td>
<td>750/85</td>
</tr>
</tbody>
</table>

Note. Percentages may not add to 100 due to rounding.
minority ethnicity, with the largest minority group (11.7%) being black. A large majority of respondents (87%) reported they were certified in the subjects they taught, with the three groups of schools quite similar, ranging from a high of 89% in Group II to a low of 85% in Group III.

Gender diversity was greatest in Group III, with 36% male teachers, while ethnic diversity was greatest in Group I, with 14% black teachers. Conversely, both male (30%) and black (8.4%) teachers comprised a smaller percentage of the Group II sample than was the case for the other groups.

Table 9 profiles respondents by years of experience and degree level. The majority of respondents (62%) reported the bachelor’s degree as their highest degree level, 35% reported master’s degrees, and 3% reported specialist or doctorate credentials. This indicates that participants overall tended not to pursue higher credentials. More Group I teachers (42%) had advanced degrees than did teachers in Groups II and III.

Forming 17% of the total sample, beginning teachers (0-3 years experience) were slightly more numerous in Groups I and III. Since Group III also had more mid-career teachers (4-9 years experience), the percentage of veteran teachers (10 or more years experience) in Group III (55%) was lower than in other groups. Across all groups, however, veteran teachers formed the majority of respondents at almost 60% of the total sample, with more than half of veteran teachers having 20 or more years of experience.

Table 10 shows the number of years that respondents reported they had taught at their present school. With the number of veteran teachers
Table 9  Number/Percentage of Teachers by Experience Level and Master's Degree

<table>
<thead>
<tr>
<th>School</th>
<th>Years Experience</th>
<th>Master's or Higher Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-3</td>
<td>4-9</td>
</tr>
<tr>
<td><strong>Group I (3+ years using block scheduling)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres</td>
<td>7/12</td>
<td>5/08</td>
</tr>
<tr>
<td>Blingham</td>
<td>2/03</td>
<td>5/08</td>
</tr>
<tr>
<td>Boothsfield</td>
<td>12/20</td>
<td>11/16</td>
</tr>
<tr>
<td>Charleston</td>
<td>8/12</td>
<td>14/16</td>
</tr>
<tr>
<td>Clarkstonsville</td>
<td>7/12</td>
<td>6/09</td>
</tr>
<tr>
<td>Davensport</td>
<td>11/19</td>
<td>14/21</td>
</tr>
<tr>
<td>Frankfort</td>
<td>20/34</td>
<td>17/26</td>
</tr>
<tr>
<td>Total</td>
<td>59/19</td>
<td>66/21</td>
</tr>
<tr>
<td><strong>Group II (2 years using block scheduling)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicholson Park</td>
<td>6/16</td>
<td>12/22</td>
</tr>
<tr>
<td>Okeefe</td>
<td>6/16</td>
<td>12/22</td>
</tr>
<tr>
<td>Ossenboro</td>
<td>11/29</td>
<td>9/17</td>
</tr>
<tr>
<td>Pearland</td>
<td>6/16</td>
<td>9/17</td>
</tr>
<tr>
<td>Rolfe</td>
<td>8/21</td>
<td>6/11</td>
</tr>
<tr>
<td>Sloan</td>
<td>1/03</td>
<td>5/09</td>
</tr>
<tr>
<td>Stratford</td>
<td>2/11</td>
<td>3/04</td>
</tr>
<tr>
<td>Total</td>
<td>38/14</td>
<td>55/21</td>
</tr>
<tr>
<td><strong>Group III (traditional scheduling)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinaberry</td>
<td>11/20</td>
<td>17/21</td>
</tr>
<tr>
<td>Cypress Pointe</td>
<td>7/13</td>
<td>14/17</td>
</tr>
<tr>
<td>Dogwood Circle</td>
<td>3/05</td>
<td>7/09</td>
</tr>
<tr>
<td>Juniper</td>
<td>6/11</td>
<td>9/11</td>
</tr>
<tr>
<td>Silver Maple</td>
<td>2/04</td>
<td>8/10</td>
</tr>
<tr>
<td>Sycamore</td>
<td>12/21</td>
<td>13/16</td>
</tr>
<tr>
<td>Yew</td>
<td>15/27</td>
<td>14/17</td>
</tr>
<tr>
<td>Total</td>
<td>56/18</td>
<td>82/27</td>
</tr>
<tr>
<td><strong>Sample Total</strong></td>
<td>153/17</td>
<td>203/23</td>
</tr>
</tbody>
</table>

Note. Percentages may not add to 100 due to rounding.
Table 10  **Number/Percentage Teachers by Years at Present School**

<table>
<thead>
<tr>
<th>School</th>
<th>Years at This School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-5</td>
</tr>
<tr>
<td><strong>Group I (3+ years using block scheduling)</strong></td>
<td></td>
</tr>
<tr>
<td>Acres</td>
<td>14/08</td>
</tr>
<tr>
<td>Blingham</td>
<td>9/05</td>
</tr>
<tr>
<td>Boothsfield</td>
<td>34/20</td>
</tr>
<tr>
<td>Charleston</td>
<td>23/14</td>
</tr>
<tr>
<td>Clarkstonsville</td>
<td>19/11</td>
</tr>
<tr>
<td>Davensport</td>
<td>26/15</td>
</tr>
<tr>
<td>Frankfort</td>
<td>43/26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>168/53</td>
</tr>
</tbody>
</table>

**Group II (2 years using block scheduling)**

<table>
<thead>
<tr>
<th>School</th>
<th>Years at This School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicholson Park</td>
<td>21/18</td>
</tr>
<tr>
<td>Okeefe</td>
<td>31/26</td>
</tr>
<tr>
<td>Ossenboro</td>
<td>26/22</td>
</tr>
<tr>
<td>Pearland</td>
<td>15/13</td>
</tr>
<tr>
<td>Rolfe</td>
<td>13/11</td>
</tr>
<tr>
<td>Sloan</td>
<td>10/08</td>
</tr>
<tr>
<td>Stratford</td>
<td>3/03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>119/45</td>
</tr>
</tbody>
</table>

**Group III (traditional scheduling)**

<table>
<thead>
<tr>
<th>School</th>
<th>Years at This School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinaberry</td>
<td>27/16</td>
</tr>
<tr>
<td>Cypress Pointe</td>
<td>25/15</td>
</tr>
<tr>
<td>Dogwood Circle</td>
<td>20/12</td>
</tr>
<tr>
<td>Juniper</td>
<td>20/12</td>
</tr>
<tr>
<td>Silver Maple</td>
<td>13/08</td>
</tr>
<tr>
<td>Sycamore</td>
<td>26/16</td>
</tr>
<tr>
<td>Yew</td>
<td>34/21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>165/53</td>
</tr>
</tbody>
</table>

**Sample Total** 452/51 | 158/18 | 106/12 | 170/19

**Note.** Percentages may not add to 100 due to rounding.

Signaling an older, more experienced teaching force in the schools sampled, it was surprising that 51% of teachers reported they had been at the present...
school for five or fewer years, indicating considerable teacher transience. Groups I and III posted the highest transience rates, at 53% each.

Table 11 shows the subject area speciality of respondents. Over 42% of total respondents taught courses other than core subjects. In the core subject areas, there were more responses from English and math teachers (33%) than from science and social studies teachers (25%).

Instrumentation and Procedures

Instrumentation. Phase I of this study involved one quantitative and two qualitative measures, copies of which appear in Appendix A, along with teacher and principal consent forms. The survey instrument was used to gather data on teacher perceptions of climate, using three subscales derived from a study by Taylor and Tashakkori (1995), as well as additional items from the National Education Longitudinal Study (NELS) 1990 First Follow-up (see Ingels et al., 1992) and researcher-constructed items. Qualitative instruments sought general school climate perceptual data at each school, using observations by two researchers, and an interview with the principal.

Quantitative instrumentation. As described in chapter 2, the Taylor and Tashakkori study (1995) utilized data from the NELS 1990 First Follow-up (see Ingels et al., 1992). Contacts with the federal government revealed that reliability data were not collected when the NELS was done, and therefore were not available. From single indicators in the teacher data set, Taylor and Tashakkori (1995) used principal components analysis to construct five composite variables representing dimensions of school climate
Table 11  Number/Percentage of Teachers by Subject Area

<table>
<thead>
<tr>
<th>School</th>
<th>English</th>
<th>Math</th>
<th>Science</th>
<th>Social Studies</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I (3+ years using block scheduling)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres</td>
<td>3/06</td>
<td>5/11</td>
<td>3/10</td>
<td>3/07</td>
<td>14/11</td>
</tr>
<tr>
<td>Blingham</td>
<td>3/06</td>
<td>3/07</td>
<td>5/16</td>
<td>2/05</td>
<td>9/07</td>
</tr>
<tr>
<td>Boothsfield</td>
<td>5/09</td>
<td>5/11</td>
<td>4/13</td>
<td>6/15</td>
<td>19/15</td>
</tr>
<tr>
<td>Charleston</td>
<td>7/13</td>
<td>5/11</td>
<td>2/06</td>
<td>5/12</td>
<td>30/23</td>
</tr>
<tr>
<td>Clarkstonsville</td>
<td>9/17</td>
<td>6/14</td>
<td>4/13</td>
<td>4/10</td>
<td>22/17</td>
</tr>
<tr>
<td>Davenport</td>
<td>8/15</td>
<td>6/14</td>
<td>5/16</td>
<td>5/12</td>
<td>9/07</td>
</tr>
<tr>
<td>Frankfort</td>
<td>19/35</td>
<td>14/32</td>
<td>8/26</td>
<td>16/39</td>
<td>28/21</td>
</tr>
<tr>
<td>Total</td>
<td>54/18</td>
<td>44/15</td>
<td>31/10</td>
<td>41/14</td>
<td>131/43</td>
</tr>
<tr>
<td>Group II (2 years using block scheduling)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicholson Park</td>
<td>7/17</td>
<td>4/11</td>
<td>6/21</td>
<td>5/13</td>
<td>18/18</td>
</tr>
<tr>
<td>Okeefe</td>
<td>7/17</td>
<td>6/16</td>
<td>5/17</td>
<td>6/15</td>
<td>22/22</td>
</tr>
<tr>
<td>Pearland</td>
<td>7/17</td>
<td>7/18</td>
<td>4/14</td>
<td>6/15</td>
<td>16/16</td>
</tr>
<tr>
<td>Rolfe</td>
<td>4/10</td>
<td>5/13</td>
<td>3/10</td>
<td>6/15</td>
<td>13/13</td>
</tr>
<tr>
<td>Sloan</td>
<td>3/07</td>
<td>4/11</td>
<td>4/14</td>
<td>7/18</td>
<td>8/08</td>
</tr>
<tr>
<td>Stratford</td>
<td>4/10</td>
<td>3/08</td>
<td>2/07</td>
<td>4/10</td>
<td>3/03</td>
</tr>
<tr>
<td>Total</td>
<td>41/17</td>
<td>38/15</td>
<td>29/12</td>
<td>40/16</td>
<td>100/40</td>
</tr>
<tr>
<td>Group III (traditional scheduling)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinaberry</td>
<td>9/19</td>
<td>9/17</td>
<td>5/16</td>
<td>8/20</td>
<td>28/22</td>
</tr>
<tr>
<td>Cypress Pointe</td>
<td>6/13</td>
<td>8/15</td>
<td>4/13</td>
<td>6/15</td>
<td>24/19</td>
</tr>
<tr>
<td>Dogwood Circle</td>
<td>4/08</td>
<td>10/19</td>
<td>4/13</td>
<td>7/17</td>
<td>14/11</td>
</tr>
<tr>
<td>Juniper</td>
<td>9/19</td>
<td>7/13</td>
<td>4/13</td>
<td>5/12</td>
<td>17/13</td>
</tr>
<tr>
<td>Silver Maple</td>
<td>3/06</td>
<td>3/06</td>
<td>3/10</td>
<td>4/10</td>
<td>6/05</td>
</tr>
<tr>
<td>Sycamore</td>
<td>6/13</td>
<td>7/13</td>
<td>5/16</td>
<td>5/12</td>
<td>17/13</td>
</tr>
<tr>
<td>Total</td>
<td>48/16</td>
<td>53/18</td>
<td>31/10</td>
<td>41/14</td>
<td>129/43</td>
</tr>
<tr>
<td>Sample Total</td>
<td>143/17</td>
<td>135/16</td>
<td>91/11</td>
<td>122/14</td>
<td>360/42</td>
</tr>
</tbody>
</table>

Note. Percentages may not add to 100 due to rounding.

Relevant to the present study are three of these variables, which Taylor and Tashakkori (1995) named student discipline, faculty collegiality, and
lack of obstacles to teaching. Table 12 summarizes factor pattern coefficients of the chosen dimensions.

Table 12  Factor Pattern Coefficients for Oblimin-Rotated School Climate Factors

<table>
<thead>
<tr>
<th>Item Summary</th>
<th>Coefficient</th>
<th>( h^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Discipline</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class cutting is a problem at this school.</td>
<td>.87</td>
<td>.74</td>
</tr>
<tr>
<td>Tardiness to class is a problem at this school.</td>
<td>.86</td>
<td>.70</td>
</tr>
<tr>
<td>Absenteeism is a problem at this school.</td>
<td>.81</td>
<td>.69</td>
</tr>
<tr>
<td>Tardiness and class cutting interferes with teaching.</td>
<td>.61</td>
<td>.57</td>
</tr>
<tr>
<td>Physical conflict is a problem at this school.</td>
<td>.59</td>
<td>.45</td>
</tr>
<tr>
<td>Verbal abuse of teachers is a problem at this school.</td>
<td>.47</td>
<td>.44</td>
</tr>
<tr>
<td><strong>Faculty Collegiality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A great deal of cooperative effort exists among staff.</td>
<td>.80</td>
<td>.69</td>
</tr>
<tr>
<td>Teachers can count on staff members to help out.</td>
<td>.77</td>
<td>.56</td>
</tr>
<tr>
<td>Department colleagues share beliefs about school mission.</td>
<td>.72</td>
<td>.55</td>
</tr>
<tr>
<td>Teachers at school are continuously learning.</td>
<td>.66</td>
<td>.54</td>
</tr>
<tr>
<td>School seems like a big family.</td>
<td>.57</td>
<td>.52</td>
</tr>
<tr>
<td>There is broad agreement among faculty about school mission.</td>
<td>.55</td>
<td>.59</td>
</tr>
<tr>
<td>Department chair's behavior is supportive.</td>
<td>.54</td>
<td>.32</td>
</tr>
<tr>
<td><strong>Lack of Obstacles to Teaching</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are incapable of learning material.</td>
<td>.69</td>
<td>.43</td>
</tr>
<tr>
<td>Students have attitudes that reduce academic success.</td>
<td>.67</td>
<td>.54</td>
</tr>
<tr>
<td>Drug/alcohol abuse interferes with teaching.</td>
<td>.56</td>
<td>.45</td>
</tr>
<tr>
<td>Student misbehavior interferes with teaching.</td>
<td>.54</td>
<td>.47</td>
</tr>
<tr>
<td>Routine duties interfere with teaching.</td>
<td>.51</td>
<td>.30</td>
</tr>
</tbody>
</table>

Adapted from Taylor & Tashakkori (1995)

A 42-item questionnaire (see Appendix A) was used to solicit teacher perceptions of school climate, utilizing the three composite variables shown in Table 12, five additional items measuring student discipline from the
NELS 1990 First Follow-up (see Ingels, et al., 1992), and 19 researcher-constructed items regarding teacher attitudes and preferences, general scheduling information, and demographic data. Response choices were arrayed from strongly disagree to strongly agree, or from serious problem to not a problem. Questionnaire items for Student Discipline and Student-related Obstacles to Teaching were recoded as necessary so higher numbered response choices reflected positive climate. Cronbach's alpha reliability coefficients were utilized to confirm internal consistency of responses, and factor analysis was used to establish construct validity (Gall et al., 1996; Tashakkori & Teddlie, 1998). At each of the 21 schools, Phase I surveys and consent forms (see Appendix A) were distributed to all teachers. Results are presented in Chapter 4.

Qualitative instrumentation. Phase I included two qualitative instruments and an administrator consent form (see Appendix A). First, a researcher-developed observation form utilized seven open-ended questions to solicit observer perceptions of student discipline, faculty collegiality, and obstacles to teaching (Taylor & Tashakkori, 1995). Second, a seven-item researcher-developed interview protocol in a standardized, open-ended format (Patton, 1990) was used at each school to solicit demographic data as well as administrator perceptions of the school-level discipline program, student discipline, faculty collegiality, obstacles to teaching, school strengths, and school weaknesses. Before use in the present study, these
instruments were submitted to an external panel of expert judges as a test of face validity (Gall et al., 1996; Tashakkori & Teddlie, 1998).

**Procedures.** The superintendent of each parish or city school system was contacted by telephone to secure permission to enter selected schools. The principal at each school was then contacted by telephone and invited to participate. The study was described in detail, and a procedure was agreed upon for the distribution of Phase I questionnaires and consent forms to the faculty on the day of the site visit. With the exception of three schools which opted to handle the questionnaires at a later time through established school procedures, questionnaires were distributed to teachers early on the morning of the school visit. Completed questionnaires and consent forms were collected by researcher at day's end. For the ensuing three-day period, a large postage-paid, pre-addressed envelope was left with office personnel at each site to facilitate collection and return to researcher of additional teacher questionnaires and consent forms.

All Phase I qualitative data were collected on the day each school was visited, with the visits occurring during a three-month period between November 5, 1998 and February 2, 1999. Two researchers were at each school site, and acting as complete observers (Patton, 1990), provided general perceptions of school climate using the observation form. One researcher interviewed the principal (or designee), using a standardized open-ended interview format (Patton, 1990). During the course of the study, a total of four researchers other than the primary researcher were involved.
in collecting observational data, and one researcher other than the primary researcher was involved in administrator interviews. Researchers involved in data collection were trained in advance to use qualitative instruments.

**Level of Analysis**

To address the research hypotheses, quantitative data were aggregated to the school level for analysis. To answer research question 1, qualitative data were aggregated to school level and then to group level.

**Data Analysis**

For Phase I quantitative data, descriptive statistics were used to present school demographics for the three groups (Gravetter & Wallnau, 1992; Hinkle, Wiersma, & Jurs, 1998), and a multivariate analysis of variance (MANOVA) was utilized to test for main effects on overall climate, followed by ANOVA tests for significant differences on the individual climate variables among the three groups of schools (Gravetter & Wallnau, 1992; Stevens, 1986). The Tukey test was then used on the significant individual climate variable to determine which of the groups differed (Hinkle et al., 1998). An alpha level of .05 was used for all tests.

Phase I qualitative data were analyzed using unitizing and categorizing processes (Lincoln & Guba, 1985) to find emerging themes. The data were used to answer research question one regarding qualitative differences among the three groups of schools. The data were also used as needed in Phase II data analysis for selected schools.
Phase II of the Study

Statement of Question Two

Question 2, which was identified in the first chapter, was addressed by Phase II of this study: What differences exist regarding the dimensions of climate between the school with the most positive teacher report of climate, and the school with the least positive teacher report of climate, provided both schools had at least 3 years involvement with block scheduling?

Identification of the Sample

The present study utilized mixed purposeful sampling methods. First, extreme or deviant case sampling was used to select the two Group I case study schools, based on quantitative scores showing a very low or very high mean on overall climate (Patton, 1990). Second, using a staff roster and a school master schedule, proportional stratified sampling was used to select a representative number of teachers at each of the two schools for interviews. Teachers were proportionately selected from the core subject areas and high school grade levels, and the principal was asked to verify the group as representative of the school faculty in terms of gender and ethnicity.

The sample at the positive outlier school. The sample for Frankfort High School included 12 teachers, or 12% of the total faculty, selected from core subject areas and across high school grade levels. To make best use of
teacher release time, two individual and two focus group interviews were utilized. There were five participants in each focus group. Table 13 shows gender, ethnicity, experience level, and degree level of the sampled teachers. With one-third of the sample male, and one-fourth black, the sample was representative of the Frankfort faculty. A large majority (83%) of those interviewed were veteran teachers with 10 or more years experience; and two-thirds of the sample had advanced degrees, a greater proportion than the overall faculty at 43%.

<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Master's Degree or Higher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Black</td>
</tr>
<tr>
<td>1-9</td>
<td>2/17</td>
<td>1/08</td>
<td>1/08</td>
</tr>
<tr>
<td>20+</td>
<td>2/17</td>
<td>5/42</td>
<td>2/17</td>
</tr>
</tbody>
</table>

Table 14 shows sampled teachers by grade level and by subject area. The sample was balanced across grade levels, except for having four 11th grade teachers and only two 12th grade teachers. Although both mathematics and social studies disciplines were proportionately represented in the sample, with three teachers from each discipline, only one English teacher and two science teachers were available for interviews. Two foreign
<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Grade Level of Students Taught</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>English</td>
<td>1/08</td>
<td></td>
</tr>
<tr>
<td>Foreign Language</td>
<td>1/08</td>
<td>1/08</td>
</tr>
<tr>
<td>Mathematics</td>
<td>1/08</td>
<td>1/08</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1/08</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>1/08</td>
<td>1/08</td>
</tr>
<tr>
<td>Social Studies</td>
<td>1/08</td>
<td>1/08</td>
</tr>
<tr>
<td>Totals</td>
<td>3/25</td>
<td>3/25</td>
</tr>
</tbody>
</table>

Language teachers and a 10th grade physical education teacher were also included.

The sample at the negative outlier school. The sample at Blingham High School included eight teachers, or 12% of the total faculty, selected from core subject areas and across high school grade levels. To make best use of teacher release time, two individual interviews and one focus group interview of six participants were utilized. In Table 15, the sampled teachers are profiled by gender, ethnicity, experience level, and degree level. With one-fourth of the sample male, and one-eighth black, the sample was slightly below gender and ethnicity proportions of the total faculty, but in general representative of the faculty, according to the principal. A large
Table 15  Number/Percentage of Interviewed Blingham High School Teachers (n = 8) by Years of Experience, Gender, Ethnicity, and Degree Level

<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Master's Degree or Higher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Black</td>
</tr>
<tr>
<td>1-9</td>
<td>1/12</td>
<td>1/12</td>
<td>2/25</td>
</tr>
<tr>
<td>10-19</td>
<td>1/12</td>
<td>1/12</td>
<td>1/12</td>
</tr>
<tr>
<td>20+</td>
<td>5/63</td>
<td>1/12</td>
<td>4/50</td>
</tr>
<tr>
<td>Total</td>
<td>2/25</td>
<td>6/75</td>
<td>1/12</td>
</tr>
</tbody>
</table>

majority (75%) of those interviewed were veteran teachers with 10 or more years experience; and 63% of the sample had advanced degrees, a greater proportion than the overall faculty (39%).

Table 16 shows sampled teachers by grade level and subject area.

The sample was balanced across 10th and 11th grade levels, but included three 9th grade teachers and only one 12th grade teacher. The sample was likewise balanced across English and mathematics teachers, with two from each discipline, but included one social studies and three science teachers.

Instrumentation and Procedures

Instrumentation. A researcher-developed, standardized open-ended interview protocol (Patton, 1990) was used for teacher interviews at each school, with the seven major questions based on Phase I quantitative and qualitative data as well as background information. Designed to take no
Table 16  Number/Percentage of Interviewed Blingham High School Teachers (n = 8) by Subject Area and Grade Level of Students Taught

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Grade Level of Students Taught</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td></td>
<td>1/12</td>
<td>1/12</td>
<td>2/25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>1/12</td>
<td>1/12</td>
<td>2/25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td>1/12</td>
<td>1/12</td>
<td>1/12</td>
<td>3/38</td>
<td></td>
</tr>
<tr>
<td>Social Studies</td>
<td></td>
<td>1/12</td>
<td>1/12</td>
<td>1/12</td>
<td>1/12</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>3/38</td>
<td>2/25</td>
<td>2/25</td>
<td>1/12</td>
<td>8/100</td>
</tr>
</tbody>
</table>

more than 30 minutes per individual participant, and 45 to 60 minutes for focus group interviews (Patton, 1990), the interview protocol was submitted to an external panel of expert judges as a test of face validity (Gall et al., 1996; Tashakkori & Teddlie, 1998). The interview protocol, teacher consent form, and teacher interview school profile form appear in Appendix B.

Procedures. Once quantitative results indicated schools for second phase data collection, the school administrator was contacted. Selected teachers were in turn contacted and invited to participate. On the date chosen for the interviews, each teacher was interviewed during that teacher’s planning time. All individual interview responses were written by interviewer and then read back to the teacher for confirmation. A tape recorder was used for focus group interviews to fully capture interview responses (Patton, 1990). Teachers were asked to confirm responses as
needed and/or at regular intervals, with additions or deletions noted into the record and confirmed. Taped responses were later transcribed.

Level of Analysis

To answer research question two, qualitative data were collected in two Group I schools. The data were then analyzed at the school level.

Data Analysis

Several methods of quality control were utilized. First, members confirmed their responses during individual interviews. Second, group interviews provided an automatic measure of quality control on data collection in that participants served as checks and balances on one another by weeding out inaccurate or extreme views (Patton, 1990). Third, Phase I data were triangulated with Phase II data.

Chapter Summary

Several statistical techniques were used to analyze the data gathered in the present study. Construct validity of the teacher survey instrument was established by using factor analysis, and internal consistency was assessed using Cronbach's alpha. To test for group main effects on overall climate, multivariate analysis of variance (MANOVA) was utilized. This was followed by ANOVA tests for significant differences on individual climate variable(s) among the three groups of schools, and the Tukey test to determine which of the groups differed. Observational and interview data were analyzed using unitizing and categorizing processes (Lincoln & Guba, 1985) to find emerging themes.
CHAPTER FOUR: PHASE I RESULTS

Introduction

The primary purpose of this study was to examine the effects of block scheduling on school climate in high schools. Phase I of the two-phase study focused on surveying teachers in a sample of 21 schools. In addition to the teacher survey, the principal or designee was interviewed, and general observational data were collected by two researchers at each school site. Phase II data collection featured teacher interviews in two Group I schools identified as outliers through Phase I quantitative results. The purpose of the interviews was to ascertain differences which existed between the school with the most positive teacher reports of climate and the school with the least positive teacher reports of climate. Teacher interview data and Phase I qualitative data were triangulated to form a more complete picture of the two schools.

This chapter presents results from the first phase of the study, and is divided into three major parts. The first part provides quantitative results related to four research hypotheses. The second part provides Phase I qualitative results related to the overall climate. Finally, the third part presents a chapter summary.

Quantitative Procedures

Descriptive Statistics

Table 17 shows Phase I teacher survey item means and standard deviations by group and for the total sample. As needed, items were
Table 17  Teacher Survey Item Means and Standard Deviations, by Group

<table>
<thead>
<tr>
<th>Item</th>
<th>Group Mean (Standard Deviation)</th>
<th>Sample Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most staff members will help out even if not a part of their official assignment.</td>
<td>I (n = 315) 3.32(.65) II (n = 261) 3.22(.64) III (n = 307) 3.18(.69)</td>
<td>3.24(.66)</td>
</tr>
<tr>
<td>Most departmental colleagues share values and beliefs about the central mission of the school.</td>
<td>I (n = 315) 3.31(.62) II (n = 261) 3.25(.64) III (n = 307) 3.29(.66)</td>
<td>3.29(.64)</td>
</tr>
<tr>
<td>Level of student misbehavior (e.g., noise, horseplay, fighting) does not interfere with teaching.</td>
<td>I (n = 315) 2.94(.88) II (n = 261) 3.00(.81) III (n = 307) 2.80(.83)</td>
<td>2.91(.85)</td>
</tr>
<tr>
<td>Many students are capable of learning the material taught.</td>
<td>I (n = 315) 2.92(.86) II (n = 261) 2.83(.89) III (n = 307) 2.91(.80)</td>
<td>2.89(.85)</td>
</tr>
<tr>
<td>Amount of student tardiness and class cutting does not interfere with teaching.</td>
<td>I (n = 315) 3.10(.76) II (n = 261) 3.11(.72) III (n = 307) 2.98(.78)</td>
<td>3.06(.76)</td>
</tr>
<tr>
<td>Routine duties and paperwork do not interfere with teaching.</td>
<td>I (n = 315) 2.53(.81) II (n = 261) 2.34(.81) III (n = 307) 2.35(.88)</td>
<td>2.41(.84)</td>
</tr>
</tbody>
</table>

Response choices for the following items:
1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree

*(table continues)*
<table>
<thead>
<tr>
<th>Item</th>
<th>Group</th>
<th>Sample Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I (n = 315)</td>
<td>II (n = 261)*</td>
</tr>
<tr>
<td>Department chair/curricular area coordinator's behavior toward staff is supportive, encouraging.</td>
<td>3.47(.64)</td>
<td>3.41(.57)</td>
</tr>
<tr>
<td>Teachers at school continually learn and seek new ideas.</td>
<td>3.26(.62)</td>
<td>3.11(.55)</td>
</tr>
<tr>
<td>There is great deal of cooperative effort among staff members.</td>
<td>3.22(.66)</td>
<td>3.07(.63)</td>
</tr>
<tr>
<td>There is broad agreement among faculty about the central mission of the school.</td>
<td>3.10(.63)</td>
<td>3.04(.56)</td>
</tr>
<tr>
<td>School seems like a big family; everyone is so close and cordial.</td>
<td>2.79(.74)</td>
<td>2.75(.71)</td>
</tr>
<tr>
<td>Student attitudes/habits do not greatly reduce their chances for academic success.</td>
<td>2.47(.84)</td>
<td>2.29(.80)</td>
</tr>
<tr>
<td>Student drug use does not interfere with teaching.</td>
<td>3.04(.70)</td>
<td>2.89(.70)</td>
</tr>
<tr>
<td>There is sufficient time in each period to give most students the individual attention needed.</td>
<td>2.93(.78)</td>
<td>2.72(.79)</td>
</tr>
</tbody>
</table>

(table continues)
Table 17 (continued)

<table>
<thead>
<tr>
<th>Item</th>
<th>Group Mean (Standard Deviation)</th>
<th>Sample Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I (n = 315)*</td>
<td>II (n = 261)*</td>
</tr>
<tr>
<td>Most class preparation can be completed during my planning time.</td>
<td>2.45(.95)</td>
<td>2.24(.93)</td>
</tr>
<tr>
<td>I know student strengths and weaknesses within the first month of school.</td>
<td>3.01(.61)</td>
<td>3.04(.64)</td>
</tr>
<tr>
<td>There is enough time to do what I want to do with students in each class period.</td>
<td>2.80(.77)</td>
<td>2.66(.78)</td>
</tr>
<tr>
<td>Response choices for the following item: 1=not at all; 2=not very much; 3=somewhat; 4=very much.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like the scheduling format used at my school.</td>
<td>3.45(.89)</td>
<td>3.25(.93)</td>
</tr>
<tr>
<td>Response choices for the following items (Indicate degree item is a student problem at school): 1=serious problem, 2=moderate problem, 3=minor problem; 4=not a problem.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absenteeism.</td>
<td>2.38(.84)</td>
<td>2.22(.79)</td>
</tr>
<tr>
<td>Item</td>
<td>Group Mean (Standard Deviation)</td>
<td>Sample Mean (Standard Deviation)</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td></td>
<td>I ((n = 315)^a)</td>
<td>II ((n = 261)^a)</td>
</tr>
<tr>
<td>Class cutting.</td>
<td>3.16(.71)</td>
<td>3.13(.76)</td>
</tr>
<tr>
<td>Drug and/or alcohol use.</td>
<td>2.81(.80)</td>
<td>2.60(.89)</td>
</tr>
<tr>
<td>Gang activities.</td>
<td>3.35(.71)</td>
<td>3.19(.73)</td>
</tr>
<tr>
<td>Physical conflicts among students.</td>
<td>3.13(.62)</td>
<td>2.95(.63)</td>
</tr>
<tr>
<td>Possession of weapons.</td>
<td>3.63(.56)</td>
<td>3.54(.55)</td>
</tr>
<tr>
<td>Robbery or theft.</td>
<td>2.96(.81)</td>
<td>2.93(.74)</td>
</tr>
<tr>
<td>Tardiness.</td>
<td>2.47(.87)</td>
<td>2.54(.86)</td>
</tr>
<tr>
<td>Vandalism.</td>
<td>3.02(.79)</td>
<td>3.00(.76)</td>
</tr>
<tr>
<td>Verbal abuse of teachers.</td>
<td>2.84(.96)</td>
<td>2.72(1.01)</td>
</tr>
</tbody>
</table>

*Number of cases per item varied due to incomplete items.
recoded so higher numbered response choices indicated positive perceptions. A four-part Likert-type scale was used, offering response choices pertinent to each group of items. For each survey item, the highest possible rating was 4.0, the lowest possible rating 1.0, and the mid-point of possible ratings 2.5. A brief discussion of findings for the entire sample is presented prior to the discussion of findings for each group.

Sample means. Sample respondents most strongly agreed that the behavior of department chair/curricular area coordinator was supportive toward staff (\( \bar{x} = 3.41 \)), that colleagues within departments were cohesive around the central mission of the school (\( \bar{x} = 3.29 \)), and that staff members were willing to help one another even if the task was not part of their job assignment (\( \bar{x} = 3.24 \)). To a lesser degree, respondents agreed that teacher pursuit of learning and acceptance of new ideas was continuous at their schools (\( \bar{x} = 3.15 \)), and that staff members were cooperative (\( \bar{x} = 3.10 \)). Teachers also tended to agree that there was cohesion among the overall faculty about the central mission of the school (\( \bar{x} = 3.05 \)), that teachers were able to learn student strengths and weaknesses within the first month of school (\( \bar{x} = 2.98 \)), that teachers were able to give students individualized attention within the time frame of each class period (\( \bar{x} = 2.71 \)), and that there was a feeling that their schools were like families, with close and cordial relationships (\( \bar{x} = 2.70 \)). Closer to a neutral response, teachers nonetheless tended to agree that they were able to accomplish instructional
plans to the extent desired with students within the time frame of a class period ($\bar{x} = 2.61$).

Teacher ratings also indicated that the following behavior infractions did not seriously interfere with teaching: student tardiness and class cutting ($\bar{x} = 3.06$), student drug use ($\bar{x} = 3.00$), level of overall student behaviors ($\bar{x} = 2.91$), and student ability to learn the material being taught ($\bar{x} = 2.89$). Two impediments to instruction were indicated by teachers, namely routine duties and paperwork ($\bar{x} = 2.41$), and student attitudes and habits ($\bar{x} = 2.38$). Teachers tended to disagree that they were able to prepare for classes within the planning time allowed ($\bar{x} = 2.23$).

The discipline item that was least problematic across all groups was weapons possession ($\bar{x} = 3.58$), indicating that sampled teachers did not perceive this as a concern at their schools. Respondents pointed to relatively minor problems in their schools with gang activities ($\bar{x} = 3.30$), class cutting ($\bar{x} = 3.10$), vandalism ($\bar{x} = 3.02$), physical conflicts among students ($\bar{x} = 3.02$), and robbery or theft ($\bar{x} = 2.95$). Although verbal abuse of teachers ($\bar{x} = 2.81$) and drug and/or alcohol use ($\bar{x} = 2.69$) were perceived to be less than serious student behavior problems, teachers nonetheless indicated these behaviors presented greater problems than gangs, class cutting, vandalism, and fighting. The discipline areas which respondents indicated as greatest student behavior problems at their schools were absenteeism ($\bar{x} = 2.24$) and tardiness ($\bar{x} = 2.44$).
As shown in Table 17, standard deviations were similar across groups on the survey items. This indicates that across the three groups, teachers' perceptions were similar. A noticeable exception, however, was the item concerning scheduling format preference, which is discussed more fully in the next subsection.

**Scheduling preferences.** Responses to the questionnaire item "I like the scheduling format used at my school" are presented as percentages by group in Table 18. As expected, the majority of teachers at block scheduled schools indicated they liked the scheduling format at their school very much, with Group I evidencing 65% approval and Group II giving a less enthusiastic 51% approval. Compared to Group I, a lower approval rate from Group II teachers may be due to their more recent change to the new scheduling format, and thus the shorter span of time over which adaptation could occur. Group III teachers gave 47% approval in responding "very much" to traditional scheduling.

When the two positive response categories, "somewhat" and "very much," were combined, however, 93% of respondents in Group III were positive about traditional scheduling, whereas Groups I and II respondents were less appreciative of block scheduling, at 86% and 81% respectively. One possible explanation is that Group III teachers had no scheduling experience other than traditional scheduling, whereas Groups I and II schools moved into a block scheduling format from a traditional scheduling format during the prior 2 to 4 years. Given that teachers in Groups I and II
Table 18  Percentage of Teacher Responses to Questionnaire Item
"I like the scheduling format used at my school"

<table>
<thead>
<tr>
<th>Response Choice</th>
<th>Group I (n = 313)</th>
<th>Group II (n = 259)</th>
<th>Group III (n = 304)</th>
<th>Total (n = 876)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>7%</td>
<td>7%</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Not very much</td>
<td>7%</td>
<td>12%</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>Somewhat</td>
<td>21%</td>
<td>30%</td>
<td>46%</td>
<td>32%</td>
</tr>
<tr>
<td>Very much</td>
<td>65%</td>
<td>51%</td>
<td>47%</td>
<td>55%</td>
</tr>
</tbody>
</table>

schools were exposed to both types of scheduling, they had a basis of comparison when forming an opinion. However, overall teacher approval of their school's scheduling type, whether block or traditional, was indicated with a mean score of 3.37, as shown in Table 17.

Also presented in Table 17, variances for the item on scheduling preference for the two block scheduled groups (.89 and .93, respectively) were greater than that of the traditional scheduling group (.68), indicating that Group III teachers differed less. This lends credence to the rationale that teachers in the block scheduled groups had a basis for comparing scheduling types.

Factor Analysis

Most human behavior is marked by the interaction of multiple variables, which calls for multivariate methods of data analysis. An often utilized multivariate method is factor analysis, a statistical procedure for
reducing a set of variables by combining those which are moderately or highly correlated into factors (Gall et al., 1996).

A factor is a mathematical expression of the idea, theme, or dimension present in the combined variables (Afifi & Clark, 1984), with the correlations of the variables with the factors called the factor structure (Kline, 1998). Factor analysis was used for two purposes in this study. One purpose was as a measure of construct validity. The second was to identify dimensions of climate that could be used in subsequent analysis.

Consistent with the procedures used by Taylor and Tashakkori (1995), teacher questionnaire items were factor analyzed using principal components analysis with an oblimin rotation. A large sample size "relative to the number of variables (n = 500 for 20 variables)" ensures significance, according to Stevens (1986, p. 344). The number of respondents in the present study met this criterion. Those factors with an eigenvalue greater than one were retained (Afifi & Clark, 1984; Stevens, 1986), provided that at least one of the following criteria was also met: the factor was consistent with prior research, and/or the factor was interpretable.

The criterion set for acceptance of an item was a factor pattern coefficient of $| .55 |$ or greater in order to maintain simplest structure (Kline, 1998; Stevens, 1986). Of the 27 items included in the factor analysis, 24 items were retained. These procedures led to the extraction of four factors, which will be discussed more fully below. To estimate reliability, Cronbach's alpha was used, resulting in alphas of .85, .83, .69, and .69 for
the four factors, respectively. The factor pattern coefficients and reliability estimates are presented in Table 19.

According to Gorsuch (1983) and Stevens (1986), communalities ($h^2$) with a value of .40 or below are considered low, while those between .41 and .69 are moderate, and .70 and above are high. Communalities for the four factors in the present study ranged from .33 to .68. Two communalities were in the low range; the remaining communalities were moderate, with values of .42 and above. In the present study, the four factor solution shown in Table 19 accounted for 50.3% of total variance.

Nine NELS items regarding student behaviors emerged as Factor 1, which was termed Student Discipline and which accounted for the largest percentage (23.8%) of variance explained. This factor contained items regarding student fights, drug use, robbery or theft, vandalism, weapons, verbal abuse of teachers, gang activities, class cutting, and tardiness. Communalities were moderate, ranging from .44 to .51.

Factor 2, which was named Faculty Collegiality, concerned teacher cooperation, cohesiveness as a school faculty, and willingness to grow professionally. This factor accounted for the second largest percentage (12.37%) of variance explained, and communalities ranged from .38 to .68.

Obstacles to Teaching, which Taylor and Tashakkori (1995) found to be one factor, emerged in the present study as two factors. Factor 3 included items pertaining to management of time. The term used to describe this dimension was Time-related Obstacles to Teaching. Factor 4
Table 19  **Factor Pattern Coefficients and Communalities for Oblimin-Rotated Factors for School Climate**

<table>
<thead>
<tr>
<th>Item</th>
<th>Coefficient</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Discipline</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical conflicts among students are a problem at this school.</td>
<td>.71</td>
<td>.51</td>
</tr>
<tr>
<td>Drug and/or alcohol use is a problem at this school.</td>
<td>.70</td>
<td>.49</td>
</tr>
<tr>
<td>Robbery or theft is a problem at this school.</td>
<td>.70</td>
<td>.49</td>
</tr>
<tr>
<td>Vandalism is a problem at this school.</td>
<td>.70</td>
<td>.51</td>
</tr>
<tr>
<td>Possession of weapons is a problem at this school.</td>
<td>.69</td>
<td>.50</td>
</tr>
<tr>
<td>Verbal abuse of teachers is a problem at this school.</td>
<td>.68</td>
<td>.51</td>
</tr>
<tr>
<td>Gang activities are a problem at this school.</td>
<td>.67</td>
<td>.46</td>
</tr>
<tr>
<td>Class cutting is a problem at this school.</td>
<td>.66</td>
<td>.47</td>
</tr>
<tr>
<td>Tardiness is a problem at this school.</td>
<td>.63</td>
<td>.44</td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>5.71</td>
<td></td>
</tr>
<tr>
<td><strong>Percentage variance explained</strong></td>
<td>23.80</td>
<td></td>
</tr>
<tr>
<td><strong>Cronbach's alpha reliability</strong></td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td><strong>Faculty Collegiality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is a great deal of cooperative effort among staff members.</td>
<td>.82</td>
<td>.68</td>
</tr>
<tr>
<td>Teachers in this school are continually learning and seeking new ideas.</td>
<td>.74</td>
<td>.56</td>
</tr>
<tr>
<td>There is broad agreement among the entire school faculty about the central mission of the school.</td>
<td>.73</td>
<td>.54</td>
</tr>
<tr>
<td>I can count on most staff members to help out anywhere, anytime, even though it may not be part of their official assignment.</td>
<td>.69</td>
<td>.49</td>
</tr>
<tr>
<td>This school seems like a big family; everyone is so close and cordial.</td>
<td>.69</td>
<td>.48</td>
</tr>
<tr>
<td>Most of my departmental colleagues share my beliefs and values about the school's central mission.</td>
<td>.65</td>
<td>.42</td>
</tr>
<tr>
<td>Department chair/curricular area coordinator behavior toward staff is supportive and encouraging.</td>
<td>.61</td>
<td>.38</td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>2.97</td>
<td></td>
</tr>
<tr>
<td><strong>Percentage variance explained</strong></td>
<td>12.37</td>
<td></td>
</tr>
<tr>
<td><strong>Cronbach's alpha reliability</strong></td>
<td>.83</td>
<td></td>
</tr>
</tbody>
</table>

*(table continues)*

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Table 19 (continued)

<table>
<thead>
<tr>
<th>Item</th>
<th>Coefficient</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time-related Obstacles to Teaching</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have sufficient time in each class period to give</td>
<td>.80</td>
<td>.66</td>
</tr>
<tr>
<td>most of the students I teach the individual attention they need.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is enough time to do all the things I want to do with my</td>
<td>.79</td>
<td>.63</td>
</tr>
<tr>
<td>students in each class period.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most of the class preparation I need to do can be completed</td>
<td>.71</td>
<td>.50</td>
</tr>
<tr>
<td>during my planning period.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I get to know the strengths and weaknesses of most of the students</td>
<td>.57</td>
<td>.33</td>
</tr>
<tr>
<td>I teach within the first month of school.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>1.95</td>
<td></td>
</tr>
<tr>
<td><strong>Percentage variance explained</strong></td>
<td>8.13</td>
<td></td>
</tr>
<tr>
<td><strong>Cronbach’s alpha reliability</strong></td>
<td>.69</td>
<td></td>
</tr>
<tr>
<td><strong>Student-Related Obstacles to Teaching</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The amount of student tardiness and class cutting in this school</td>
<td>.74</td>
<td>.56</td>
</tr>
<tr>
<td>interferes with my teaching.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The level of student misbehavior (e.g., noise, horseplay, or</td>
<td>.72</td>
<td>.54</td>
</tr>
<tr>
<td>fighting in halls, cafeteria, or student lounge) at school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>interferes with my teaching.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The attitudes and habits students bring to my class</td>
<td>.68</td>
<td>.47</td>
</tr>
<tr>
<td>greatly reduce their chances for academic success.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many students I teach are not capable of learning the material</td>
<td>.67</td>
<td>.46</td>
</tr>
<tr>
<td>I am supposed to teach them.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>1.44</td>
<td></td>
</tr>
<tr>
<td><strong>Percentage variance explained</strong></td>
<td>6.01</td>
<td></td>
</tr>
<tr>
<td><strong>Cronbach’s alpha reliability</strong></td>
<td>.69</td>
<td></td>
</tr>
</tbody>
</table>

related to general student behaviors, capability, tardiness, class-cutting, and attitudes. The term used to describe this subscale was Student-related Obstacles to Teaching. Factor 3 accounted for 8.13% of variance, while Factor 4 accounted for 6.01% of variance. Communalities for Factor 3.
ranged from .33 to .66, and communalities for Factor 4 ranged from .46 to .56. These factors were subsequently used to test for differences among the three groups of schools, as will be discussed in the next section.

Table 20 shows that correlations among the four factors were generally weak. As expected, highest correlation (r = .356) was between Student Discipline and Student-related Obstacles to Teaching. Student Discipline was weakly correlated with Faculty Collegiality (r = .195) and with Time-related Obstacles to Teaching (r = .141). Time-related Obstacles to Teaching was uncorrelated with Student-related Obstacles to Teaching.

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>.195</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>.141</td>
<td>.166</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>.356</td>
<td>.226</td>
<td>.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Components Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

Hypotheses Testing

Four research hypotheses developed for the present study concerned determination of statistically significant climate differences among the three groups of schools, including overall climate and the four factors which emerged through factor analysis. Research Hypothesis 1 predicted that overall climate would be different among the groups. Research Hypotheses
2, 3, and 4 predicted that there would be significant differences on each of the four factors among the three groups, with Group I showing highest means and Group III showing lowest means. Hypothesis 2 concerned Student Discipline; Hypothesis 3 concerned Faculty Collegiality; and Hypotheses 4 concerned both Time-related Obstacles to Teaching and Student-related Obstacles to Teaching.

Means and standard deviations for the three groups on the climate factors are presented in Table 21, which also shows an unweighted mean of the means for each group. The pattern predicted in hypotheses for group differences in the present study was that teachers in Group I schools would have the most positive perceptions of climate and teachers in Group III schools would have the least positive perceptions of climate. For overall mean climate, and for both Faculty Collegiality and Time-related Obstacles to Teaching, means followed the pattern predicted in the hypotheses. Regarding Student Discipline, although Group I posted the highest mean score, the predicted pattern did not hold true, with Group II having the lowest mean score. Again, this may reflect the difficulty of adapting to a new scheduling format. Group means for Student-related Obstacles to Teaching were the opposite of predicted pattern. Group III had the highest mean score, followed by Group II, with Group I having the lowest mean score. Group I standard deviation indicates that teachers within the group differed to a great extent in their perceptions of Student-related Obstacles to Teaching.
Table 21  **Means and Standard Deviations for Climate Variables and Mean Climate, by Groups**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group I Mean(SD) (n = 315)</th>
<th>Group II Mean(SD) (n = 261)</th>
<th>Group III Mean (SD) (n = 307)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student discipline</td>
<td>2.955(.219)</td>
<td>2.908(.224)</td>
<td>2.935(.214)</td>
</tr>
<tr>
<td>Faculty collegiality</td>
<td>3.141(.220)</td>
<td>3.117(.097)</td>
<td>3.062(.190)</td>
</tr>
<tr>
<td>Time-related obstacles to teaching</td>
<td>2.812(.156)</td>
<td>2.689(.186)</td>
<td>2.432(.096)</td>
</tr>
<tr>
<td>Student-related obstacles to teaching</td>
<td>2.740(.324)</td>
<td>2.821(.168)</td>
<td>2.935(.196)</td>
</tr>
<tr>
<td>Overall mean climate</td>
<td>2.912(.196)</td>
<td>2.884(.101)</td>
<td>2.793(.142)</td>
</tr>
</tbody>
</table>

Either scheduling type or number of years in block scheduling was unique to each group of schools, thus schools were nested within groups. The main group effect was the focus of this research. The design of the present study presented a limitation in that it precluded identification of effects as being school effects or school and teacher interaction effects when statistical tests were conducted (Maxwell & Delaney, 1990). The error term used for all tests was schools within group.

For statistical tests, degrees of freedom were small because teacher data were aggregated to school level. In addition, the magnitudes of differences between groups were small. Therefore, statistical power was weak. However, even if there were more statistical power, the small magnitudes of differences point to a lack of differences between groups.
In Table 22, MANOVA results are shown. Based on the Wilks' Lambda criterion, the main effect for group on overall climate, as measured by the four factors, was significant \[ F(8,30) = 2.8399, p<.05 \]. Subsequent ANOVA procedures for group main effect showed one factor as statistically significant, Time-related Obstacles to Teaching \[ F(2,18) = 11.20, p<.05 \]. Student Discipline \[ F(2,18) = 0.07, p>.05 \], Faculty Collegiality \[ F(2,18) = 0.31, p>.05 \], and Student-related Obstacles to Teaching \[ F(2,18) = 0.21, p>.05 \] were non-significant.

<table>
<thead>
<tr>
<th>Table 22 F Values—Group Effect on Overall Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANOVA F</td>
</tr>
<tr>
<td>MANOVA F Four Factors</td>
</tr>
<tr>
<td>F (8,30) = 2.8399*</td>
</tr>
</tbody>
</table>

*\( p<.05 \)

Tukey post hoc tests were conducted on the significant factor, Time-related Obstacles to Teaching. Groups differed in the hypothesized direction, with Group I having the highest means and Group III the lowest means. Both Group I and II schools had longer class periods than Group III schools, and could be expected to show more positive means. In addition, Group I teachers perceived fewer time-related obstacles to teaching. With the point at which meaningful change can occur estimated to be at about the 3-year mark (Fullan, 1991; Canady & Rettig, 1995a), the change to
block scheduling could be expected to be fully institutionalized in Group I
schools.

Summary of Phase I Quantitative Results

Four factors were identified through principal components analysis
using an oblique rotation. Cronbach's alpha for these factors were
acceptable. Means and standard deviations were computed for the four
factors using the raw data. A mean overall climate score was also computed
for each group.

Overall mean climate, Faculty Collegiality, and Time-related
Obstacles to Teaching had means which followed the hypothesized pattern,
that is, Group I with the highest means and Group III with the lowest
means. For the factor Student Discipline, although Group I posted the
highest mean score, Group II had the lowest mean score. The predicted
pattern was reversed for the factor Student-related Obstacles to Teaching.

MANOVA results showed a significant main effect for overall climate.
Subsequent ANOVA revealed significant differences on one factor, Time-
related Obstacles to Teaching. Tukey tests indicated that groups differed in
the hypothesized direction.

Phase I Qualitative Results

One intent of the present research was to determine whether
qualitative differences existed among the groups, that is, high schools that
had been block scheduled for 3 or more years, those that had been block
scheduled for 2 years, and those that were traditionally scheduled. At the
onset of the study, the three groups of schools were matched using SES, school size, and community type. Schools were from 13 school systems located in distinct areas of Louisiana (central, eastern, north-central, and southern regions), representing a geographical cross-section of the state.

Phase I qualitative data were collected during one-day site visits to each of the 21 schools in this study. To ascertain whether differences existed among the three groups of schools, two whole-school observations, as well as an administrator interview, were used to collect data at each school site. Interviews at each school were conducted with the principal, except in three cases when the principal was away from the school and an assistant principal, as the principal's designee, was interviewed. Two researchers provided general observational perceptions about school environment. Administrator interviews sought demographic data (administration, teacher turnover rate, and student body characteristics); information regarding student discipline, faculty collegiality, time-related obstacles to teaching, and student-related obstacles to teaching; and three main school strengths and school weaknesses.

Using the constant comparative method (Lincoln & Guba, 1985), observational and interview data were combined first at school level, and then aggregated to group level for analysis. Relevant data from teacher surveys were also used in the analysis for triangulation purposes. The present section is divided into five subsections. The first subsection presents group demographic data regarding administration, teacher
turnover rate, and student body ethnicity; and background information. The second, third, and fourth subsections present results for each of the three groups, in the following order: context; general findings relative to the areas identified as factors in this study (Student Discipline, Faculty Collegiality, Time-related Obstacles to Teaching, and Student-related Obstacles to Teaching); school strengths; school weaknesses; and a summary. The fifth subsection presents a cross-group analysis and discussion, while the final subsection summarizes Phase I qualitative data.

Demographic Data

Demographic information gathered through the 21 administrator interviews is shown in Table 23 for all schools. The data appear as group means for administrative depth (represented by number of assistant principals) and experience level (represented by number of years the principal had been in education, in administration, and in administration at the present school), teacher turnover rate, and ethnic makeup of the student population.

Administrative depth was greatest in Group III schools, with 0.9 and 1.0 more assistant principals than in Group I and Group II schools, respectively. Group I principals had more years of overall administrative experience, with Group II principals having less experience as educators, as administrators, and as administrators at the present school. The fact that Group III principals had been in education and in administration at their present schools for a longer time than principals in either of the other
Table 23  **Demographic Results of Administrator Interview, by Groups**

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group I</td>
</tr>
<tr>
<td>Number of assistant principals</td>
<td>2.0</td>
</tr>
<tr>
<td>Principal's years in education</td>
<td>26.1</td>
</tr>
<tr>
<td>In administration</td>
<td>16.3</td>
</tr>
<tr>
<td>In administration at the present school</td>
<td>6.7</td>
</tr>
<tr>
<td>Teacher turnover rate(^a)</td>
<td>10%</td>
</tr>
<tr>
<td>Student body ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>68.1</td>
</tr>
<tr>
<td>Black</td>
<td>30.9</td>
</tr>
<tr>
<td>Other</td>
<td>1.0</td>
</tr>
</tbody>
</table>

\(^a\)Teacher turnover rates ranged from 0.5% to 30% in Group I, from 5% to 10% in Group II, and from 5% to 20% in Group III.

Groups, may speak to the issue of change. Having long-term educators as principals in these schools could reflect a lack of administrative awareness of more up-dated educational techniques and methods, a complacency which sometimes occurs in a job over time, the desire to maintain the status quo as the path of least resistance, or even that they had invested many years building and shaping the school and felt the school was effective. In short, in Group III schools where traditional scheduling prevailed, there may have been an underlying resistance to change on the part of administrators.
Although Table 23 shows similar mean teacher turnover rates across the three groups, the means of Groups I and III were skewed by the rate in one school. Group I had the highest mean turnover rate of 10%, with the rates of six of the seven schools clustered between 0.5% and 15%, while one school reported a turnover rate of 30%. The mean turnover rate of 7.4% for Group II was lowest, with all seven schools clustered between 5% and 10%. With a mean turnover rate of 8.6% for Group III, six of the seven schools reported turnover rates of between 5% and 10%, while one school had a rate of 20%.

Only 1% of the Group I student population was reported as other than white or black. In each of Groups II and III, however, mean student body ethnicity was skewed by the population of one school. In Group II, the 4% of students reported as other than white or black was highly influenced by a large population (20%) of native American students in one school. In Group III, the 3.8% of students reported as other than white or black was also highly influenced by one school designated as the English Second Language school in its district, with a full 17% of its student population comprised of Asian, Spanish, and Bosnian students.

Background Information

On the day of each school site visit, observers were asked to note instances of administrator interactions with others in the school environment, and of administrator sightings in areas other than the school
office. This information was sought to indicate some degree of leadership visibility and hands-on involvement in the schools.

To provide background information prior to the discussion regarding student disciplinary problem areas in each school, administrators were asked about school-level policy regarding discipline. Two terms frequently used by the administrators were “step process” and “zero tolerance policy.” The “step process” allowed for successively more stringent consequences as a student accumulated referrals for the same offense. Although used for most infractions (e.g., tardiness, disrupting the class), the step process was not utilized in the more serious cases which called for immediate or special punitive action.

The “zero tolerance policy” was described as a process whereby law enforcement officials were promptly contacted when an incident occurred, with consequences imposed by outside agencies as well as by the school. In most cases, a fine of between $50 and $250 was imposed, and the students involved were held at the jail until a parent appeared to pay the fine. In most districts, there was a court hearing which required appearances by student(s), parent(s), and school official(s). The student was usually required to have counseling; in some cases, counseling was also required of the parent(s).

**Group I Schools**

Mean survey scores for Group I teachers, which varied across items from 2.38 to 3.63, are discussed throughout the Group I narrative which
follows. Standard deviations showed the degree to which Group I teachers
differed when scoring an item, and varied between .56 and .96, with a
higher standard deviation indicating greater variation among teachers
within the group. Only the standard deviations which were most extreme
are discussed.

Context. Observers were asked to indicate leadership visibility at the
schools in terms of administrator interactions with others, and sightings in
areas other than the school office. Group I administrators were observed
interacting often with both students and teachers, with the exchanges
marked by smiles and easy conversation. In four schools, observers noted
an administrative presence throughout the school (cafeteria, grounds, halls),
while in three schools, administrators were seen in fewer areas.

Group I administrators reported student ability as average in three
schools, above average in three schools, and low in one school. In six
schools, the school-level discipline policy was based on district policy, while
one school “followed state guidelines.” Three schools intensified the district
policy by adding more stringent consequences for some offenses. Discipline
policy at all schools included in-school suspensions, a district-enforced “zero
tolerance policy” for fighting, and a step process for handling the bulk of
referrals. At five of the seven schools, alternative sites were available as
part of the discipline program for housing students periodically or, if
warranted, for a semester or school year. At two large schools, as an added
safety and security measure, hand-held radios were used by administrators, maintenance personnel, coaches, and office staff for communications.

All Group I schools had a security officer, but the officer was full-time in only five of the schools. At one of these schools, the officer worked mostly with truancy problems, as that was the area in which he was most needed. Five security officers were school district employees. With one officer paid by the sheriff's office, and one officer paid by a community grant, there was a demonstrated community interest in providing a safe school environment.

Gates and/or fences were observed at one school, and a teacher at another site claimed these were needed at her school. Students were required to wear identification (ID) tags at three schools, and at a fourth school to carry ID tags in their pockets. At six schools, hall passes were required for students not in class during instructional times.

Most schools had procedures in place to monitor student behavior. In one school, teachers acted as hall monitors throughout the school day, assigned to this duty an hour at a time when they were not teaching. At another school, hall monitors were on duty before and after school, and during lunch and break times, but not during instructional periods. Teachers were punctual to duty stations in all Group I schools during the day of the school visit. One measure of vigilance noted in five schools was that all teachers were at their classroom doors for supervision of students during transitions.
Wide halls at one school allowed students to pass one another easily, without physical contact during transitions. Nonetheless, less spacious halls at five other schools allowed efficient movement of students, with minimal physical contact and time lost in transitions. At another location, students had to move outdoors to change classes.

Problems were noted by observers at several Group I schools. Transitions were rowdy at one school, and at another location classes seemed noisy, over and above a noise level expected of interactive class activities, with thin walls exacerbating the effect. Overcrowded classes were noted at another site, with 30 or more students seen in many classes. In one school, classroom lighting was less than adequate.

Three Group I schools had trophy cases, or trophies prominently displayed on shelves. Attitude signs, school spirit banners, school organization posters, and wall murals painted by art department students were each observed in two schools. The single undecorated school had a sterile appearance, with no evidence of school spirit or identity. Other noteworthy aspects of overall atmosphere in Group I schools included chimes at one school, giving a quiet reminder to all to change classes; and at another school, classical music which played softly during the day, heard only in the halls.

**Student discipline.** The overall layout of six schools was conducive to good student management, with classrooms nested within instructional areas, buildings close in proximity for easy transitions between classes, and
sufficiently open spaces which aided visual supervision of students. At the
seventh school, buildings had been added as needed, resulting in a crowded
layout with no apparent plan. At this site, the principal said that visual
supervision of students was difficult, and that students often "escaped"
during the day.

Overall, student discipline was mediocre to poor at two schools, where
students were allowed out of classes during instructional periods, and were
often unsupervised while they moved freely about the campus.
Administrators reported tardiness as problematic at five schools, and
claimed teacher inconsistency in enforcing discipline policy on tardies at two
schools was a major contributor to the problem. One of these
administrators stated he did not consider tardiness an administrative
problem but rather a teacher problem. While some teachers would
consistently enforce tardy rules and thus had no problem, other teachers
would inconsistently enforce tardy rules and therefore had problems with
students who tested the limits. One school was targeting the problem, and
strongly encouraging teachers to be more consistent.

Group I teachers indicated tardiness as a mild to moderate problem
(\(\bar{x} = 2.47\)), with the standard deviation for the item (.87) reflecting apparent
differences among teachers in rating tardiness as a problem at their schools.
Another discipline area which teachers indicated as more a moderate than a
minor problem was student absenteeism (\(\bar{x} = 2.38\)). In like manner,
administrators reported absenteeism as a major concern at four schools, one of which had a problem with both teacher and student absenteeism.

Six administrators indicated that inconsistency with discipline was a problem with some teachers at their schools. In general, teachers who had difficulty in consistently managing students were said to be less effective with instruction.

As observed, five schools were orderly. Most survey items regarding discipline were not rated as serious problems by Group I teachers. Teachers tended to agree that drug and/or alcohol use ($\bar{x} = 2.81$), gang activities ($\bar{x} = 3.35$), physical conflicts among students ($\bar{x} = 3.13$), robbery or theft ($\bar{x} = 2.96$), and vandalism ($\bar{x} = 3.02$) were of minor concern at their schools. Weapons possession ($\bar{x} = 3.63$) was not seen by teachers as problematic.

Only one administrator claimed a problem with class cutting, while four said class cutting was a minor concern. At two schools, observers noted students frequently in hallways or on school grounds during instructional periods. One was the school at which a problem had been claimed, but at the other school the problem was said to be minor. Teachers tended to agree that class cutting ($\bar{x} = 3.16$) was a minor problem in their schools.

According to administrators, verbal abuse was problematic in one school, where outbursts frequently occurred in classes. Verbal abuse was reported as a minor problem in three schools, with one administrator saying such outbursts occurred mostly with special education students, while the other two described the problem as student use of inappropriate language,
deliberate disobedience, and disrespect. Teachers tended to agree that verbal abuse ($\bar{x} = 2.84$) was a minor problem in Group I schools. On the day of the school visit, observers noted frequent instances of profanity on the grounds of one school.

**Faculty collegiality.** Although all administrators reported teachers as both congenial and professional, four hesitated about using the word "cooperative" to describe teachers. Three administrators reported teachers as cooperative only when needed, such as when a time frame made teamwork the only solution, while one administrator admitted limited teacher cooperation at his school. Overall, four principals said teachers mostly chose to work alone. On the other hand, teachers indicated that there was cooperative effort among staff members ($\bar{x} = 3.22$), and that most staff members helped out, even if the work was not part of their job assignment ($\bar{x} = 3.32$).

In general, teachers gave other positive messages about work atmosphere at their schools, agreeing that their schools seemed like a big family ($\bar{x} = 2.79$), that the department chair or curricular area coordinator's behavior toward staff was supportive ($\bar{x} = 3.47$), and that the overall faculty was cohesive around the central school mission ($\bar{x} = 3.10$). Although two administrators reported that cohesiveness within departments needed improvement, teachers ($\bar{x} = 3.31$) as well as five administrators indicated that faculty members within departments were cohesive around the school's central mission.
Two administrators described teachers as having low expectations for student learning and little confidence in student ability levels. In contrast, at two other schools, administrators reported that teacher morale was high, and at a third school, the principal described morale as improving. Teachers tended to agree with these more positive perceptions. Indeed, results from the survey indicated that teachers tended to agree that they were continually willing to learn and to seek new ideas ($\bar{x} = 3.26$).

**Time-related obstacles to teaching.** Administrators indicated that paperwork burdens impeded teaching in two Group I schools. Observers supported this, noting that teachers spent much time dealing with tardy students and discipline referrals in those schools. Although teachers were neutral in judging whether or not routine duties and paperwork interfered with teaching ($\bar{x} = 2.53$), the standard deviation of .81 indicated that Group I teachers were divided in rating the item, suggesting that paperwork demands may be more problematic for some teachers than others. One administrator said teachers were relieved of extra paperwork whenever possible at his school, while another said there were too many demands on the time of all teachers, such as accounting for absences and tardies, and completing discipline referrals. Still another administrator stated that some teachers resented the extra paperwork involved in sending assignments for students who were not in the classroom; in most cases, these students were being disciplined either through in-school suspensions or placement at an alternative site.
Observers noted interruptions during classes as a possible obstacle to teaching in four schools, although administrators failed to report such problems. Students were often in and out of classes, and excessive intercom activity occurred during classes. Intercom interruptions included general announcements from the office, student names being read for honors won or as members of a team or organization, students being called to the office, or students being dismissed for athletic purposes.

Teachers tended to agree that there was sufficient time in each class period to provide students with the individual attention they needed ($\bar{x} = 2.93$) and to do what the teacher wanted to do with students during each class period ($\bar{x} = 2.80$). Teachers also tended to agree that they were able to determine student strengths and weaknesses within the first month of school ($\bar{x} = 3.01$). Teachers were neutral ($\bar{x} = 2.45$) as to whether planning time was sufficient for them to prepare for classes. However, this item had the largest standard deviation (.95) for Group I teachers, indicating teachers differed to a great extent in rating this item.

Student-related obstacles to teaching. Group I teachers agreed that the amount of student tardiness and class cutting at their schools did not interfere with teaching ($\bar{x} = 3.10$). Teachers likewise tended to agree that the general level of student misbehaviors, such as noise, horseplay, or fighting, did not impede teaching ($\bar{x} = 2.94$).

On the whole, administrators did not consider drug possession and/or use on campus a major problem, or an impediment to learning. Teachers
tended to agree ($\bar{x} = 3.04$) that student drug use was not an obstacle to teaching at their schools. At all schools, a “zero tolerance” drug policy was thought effective in deterring students from having drugs on campus. Two administrators volunteered that alcohol was the drug of choice among students at their schools, more an off-campus than an on-campus problem.

Noted by administrators as a substantial impediment to teaching at six schools was student and parent apathy and/or attitudes, with one administrator saying that home apathy had a “strong negative impact” on student attitudes. Teachers were neutral ($\bar{x} = 2.47$) in rating whether student attitudes and habits greatly reduced student chances for academic success. With a standard deviation of .84 on the item, teachers were divided in rating the item, suggesting that student attitudes and habits affect academic success more in some classes or schools than in others.

Six administrators said poor student work ethic interfered with teaching, with several saying that students would not work hard, were not motivated, and that many who held jobs outside of school either did not have time or did not choose to spend time on schoolwork. In short, most administrators felt students and many parents did not appear to value education. However, student ability levels did not seem to be a problem in Group I schools, as both administrators and teachers ($\bar{x} = 2.92$) indicated that many students were capable of learning the material taught.

Observers noted instances of seemingly good student-teacher rapport in six schools, marked by pleasant exchanges, smiles, and positive
reinforcement. Relationships appeared strained, however, in one school, where unpleasant words were exchanged in several instances, and students mumbled complaints following teacher reprimands. A possible explanation emerged in the interview with the principal, who claimed that students sought more voice in discipline policy and felt school discipline was oppressive, which hampered student-teacher relationships at times.

Observers noted moderate expectations for learning at three schools, after classroom observations revealed instances of student time off-task, mundane activities such as paper-and-pencil assignments from workbooks or texts, and inconsistent expectations from teacher to teacher. At another school, expectations were generally low, with unchallenging student work and/or lost instructional time regularly observed. High expectations were noted in three schools, where varied activities were planned, instructional time was maximized, and thought-provoking independent student work called for analysis, decision-making, or other critical thinking skills.

School strengths. In response to an open item seeking three school strengths, administrators unanimously named a good faculty that was willing to change. Claiming to have community schools, four administrators said there was established tradition and culture at their schools. Good leadership in the form of administrative organization and teamwork, and a good student population, were each named by three administrators.

Two administrators cited teacher and administrator resourcefulness, evidenced by securing grants and/or optimally using Title I money to benefit
the entire school technologically. Finally, parent support and student achievement were each named once as a strength.

**School weaknesses.** Responding to an open item seeking three school weaknesses, four administrators cited parent apathy and/or difficult parents as a problem, and four named student apathy, poor work ethic, and/or attitudes. Claiming that more vocational course offerings were needed, three administrators cited low academic expectations and/or high failure rates as a weakness.

Three administrators said replacing faculty with certified and trained personnel was a problem, that more staff as well as more time for staff development was needed. Named three times were student problems, such as special population students not learning to overcome handicaps, low achievement of minority students, and students needing but not getting a voice in discipline policy. Student and teacher absenteeism, and inadequate facilities, were each named twice as weaknesses.

**Summary of Group I schools section.** Administrators indicated that teachers who were inconsistent with discipline undermined instructional success in their classrooms. Both administrators and teachers reported the major Group I discipline problems as absenteeism and tardiness, with class cutting, drug/alcohol use, physical conflict among students, robbery/theft, vandalism, and verbal abuse of lesser concern. Observational data indicated that most schools were orderly. Although cooperation among
teachers was questioned by administrators, teachers gave mostly positive messages about work atmosphere and collegiality at their schools.

While both observers and administrators noted that paperwork interfered with teaching in some schools, teachers indicated that it is indeed more problematic in some schools than in others. Observers also noted excessive interruptions in some schools during instructional time. Teachers were neutral as to whether planning time was sufficient to prepare for classes. While teachers were divided in assessing the problem of student and parent apathy and/or attitudes, most Group I administrators reported it as an interference with teaching. However, student ability levels were indicated as sufficient for academic success.

In naming school strengths, administrators unanimously cited a good faculty that was willing to change. Most frequently named weaknesses were parental apathy and/or difficulty, and student apathy, work ethic, and/or attitudes.

**Group II Schools**

As shown in Table 17, mean survey scores for Group II teachers varied from 2.22 to 3.54. Mean scores were discussed throughout the Group II narrative. Standard deviations varied between .55 and 1.01, indicating that Group II teachers differed when scoring individual items, with a higher standard deviation indicating greater variation among teachers within the group. Only the standard deviations which were most extreme were discussed in the narrative.
Context. On the day of the school visit, the Group II administrators were observed interacting often with both students and teachers. The exchanges were marked by pleasantries, smiles, and use of first names. During the school day, administrators in three schools were seen in two of the three areas (cafeteria, grounds, halls), and only in the halls in four schools. Administrators reported that student ability was average in five schools, above average in one school, and low average in one school.

In all Group II schools, school-level discipline policy was based on district policy. Two administrators claimed that district policy was intensified at their schools, with consequences added for some infractions. At one school, as an added safety and security measure, hand-held radios were used by administrators, office personnel, and maintenance staff for on-campus communications.

Five schools had a “zero tolerance policy” for fighting, with the district enforcing the policy when needed in four of the five schools. At one of these schools, although the sheriff was willing to enforce the policy as written, the policy was actually ineffective due to the district attorney’s refusal to cooperate. As part of the discipline program, all Group II schools used a step process, and five schools also used in-school suspensions. All seven schools had access to alternative sites where students in disciplinary trouble could be housed periodically or long-term.

Two Group II schools had a security officer, and three of the seven schools required students to wear ID tags. Gates and/or fences were not
observed at any schools, although metal detectors were used at one school (said to be a holdover from earlier, more troubled times). In five schools, hall passes were required for students outside of the classroom during instructional times.

Several schoolwide procedures were directed toward monitoring student behavior in Group II schools. In one school, teachers were stationed in halls throughout the day, assigned to this duty at times when they were not teaching. In three schools, all teachers were at their classroom doors for supervision during transitions. In all Group II schools, teachers were punctual to duty stations.

During transitions between classes, wide halls at five schools allowed students easy passage, free of physical contact. At one two-story facility, transitions were eased by staircases on either end of the central hall which were designated as one-way only, so that students were not hampered or delayed in passing. At two schools where observed transitions were loud and somewhat disorderly, hallways were crowded, and some students pushed and shoved one another as they passed through the halls.

Two Group II schools displayed trophies, and posters or banners about school organizations. There were school spirit signs in three schools, one of which had an impressive display of posters and details regarding colleges and scholarships. One school was undecorated, giving no evidence of activities, organizations, pride, or other school identity.
Student discipline. The overall layout at five schools was conducive to good student management. Classrooms were nested within disciplines, with buildings close in proximity to one another. In several schools, one building served all instructional needs. Visual supervision of students was relatively unhampered in five schools, especially in large open areas where students congregated at break times. Classroom areas at two schools, however, were part of a complex layout, with many short, winding halls and turns that restricted visual supervision of students.

Student discipline did not appear problematic at Group II schools, other than the noisy transitions at two sites. One administrator said most behavior problems at his school were with the special education population. The reader is reminded that survey choices on discipline items included 1 = serious problem, 2 = moderate problem, 3 = minor problem, and 4 = not a problem. Teachers as a group indicated a mild to moderate problem at their schools with student drug and/or alcohol use ($\bar{x} = 2.60$). Their ratings implied relatively minor problems with gang activities ($\bar{x} = 3.19$), physical conflicts among students ($\bar{x} = 2.95$), robbery or theft ($\bar{x} = 2.93$), and vandalism ($\bar{x} = 3.00$). Concerning weapons possession, teachers perceived very little problem in their schools ($\bar{x} = 3.54$).

Teachers indicated that student absenteeism was a moderate problem in Group II schools ($\bar{x} = 2.22$), and administrators concurred, reporting a major concern at four schools and a minor concern at three schools. At one school, there was a particularly high rate of absenteeism
among the native American student population. Both teachers ($\bar{x} = 3.13$) and administrators indicated that class-cutting was a minor problem in Group II schools. Class-cutting had been targeted at two schools where it was a concern, and incidents were decreasing. However, administrators said tardiness was a minor concern in only two schools, while teachers indicated it to be a minor to moderate problem ($\bar{x} = 2.54$), with the standard deviation of .86 indicating teachers differed in rating the degree to which tardiness was a problem at their schools.

One administrator credited his school's strict stance on verbal abuse for the school's success in curbing the problem, claiming there was no tolerance for the behavior. Verbal abuse was a minor concern at three schools, reported to occur mostly with younger students at one location. Administrators at the other two schools described the problem as one of teacher disrespect and use of inappropriate language. Teachers implied a mild problem with verbal abuse ($\bar{x} = 2.72$). The standard deviation for the item (1.01), however, was higher than that of any other Group II survey item, indicating that there were considerable differences among teachers in rating the severity of a verbal abuse problem, which aligns with administrator reports of differences among their schools.

Faculty collegiality. Administrators in Group II schools said teachers were congenial, professional, and cooperative. However, the administrator in one school said departmental cohesiveness was not strong, and at three other schools, some departments were said to be more cohesive than others.
Teachers tended to be more positive, agreeing that departmental faculty shared beliefs and values about the central mission of the school ($\bar{x} = 3.25$). The reader is reminded that survey choices on items other than discipline items included 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree.

Teachers generally gave positive messages about overall work atmosphere at their schools. They tended to agree that most staff members helped out, even if the work was not part of their job assignment ($\bar{x} = 3.22$), that the behavior of the department chair or curricular area coordinator toward staff was supportive ($\bar{x} = 3.41$), that there was cooperative effort among staff members ($\bar{x} = 3.07$), that there was overall faculty cohesiveness around the central school mission ($\bar{x} = 3.04$), and that their schools seemed like a big family ($\bar{x} = 2.75$). As observed, teacher rapport with students seemed good in all seven Group II schools, with positive reinforcement, smiles, and first names of students used.

**Time-related obstacles to teaching.** Asked whether administrative duties, including paperwork, impeded teaching at their schools, two administrators said some teachers complained about the extra paperwork required for the special education population. Interviews and observations in tandem revealed a problem in five Group II schools, sometimes manifested as instructional time wasted while teachers handled discipline referrals, attendance paperwork, and assignments for in-school suspended
students. Teachers likewise perceived duties and/or paperwork as an interference with teaching ($\bar{x} = 2.34$).

Although administrators did not report interruptions of instructional time as problematic, observers noted a problem in two Group II schools, where students were often in halls, and/or frequent and excessively loud intercom announcements interrupted classes. All classroom work ceased when an announcement was made. In addition to general announcements and messages from the office, intercom interruptions included individual students being called to the office, and athletes being called for early dismissal. Students who were expecting to be called sometimes packed their books early, waited to be called, and did not participate in classroom activities. In two other schools, there were similar but fewer interruptions.

Survey items also concerned how time affected teaching. Group II teachers tended to disagree that most class preparation could be completed during their planning time ($\bar{x} = 2.24$), and were more neutral in assessing whether they had sufficient time to do what they wanted to do with students in each class period ($\bar{x} = 2.66$) or whether there was sufficient time in each class period to provide the individual attention students needed ($\bar{x} = 2.72$). On the other hand, teachers tended to agree that they were able to identify student strengths and weaknesses within the first month of school ($\bar{x} = 3.04$).

**Student-related obstacles to teaching.** Student absenteeism was reported by three administrators to interfere with teaching, and by two
administrators to be a limited concern at their schools. At four schools, administrators said tardiness and class cutting were minor overall hindrances to teaching, said to occur habitually with the same students. Teachers tended to agree that neither tardiness and class cutting ($\bar{x} = 3.11$), nor the general level of student behaviors such as noise, horseplay, and fighting ($\bar{x} = 3.00$), seriously interfered with teaching.

On the whole, administrators said possession and/or use of drugs did not obstruct teaching, as it was not a problem on campus. A zero tolerance drug policy at all schools was thought to effectively deter students from having drugs on campus. Teachers tended to agree that student drug use did not interfere with teaching ($\bar{x} = 2.89$). Three administrators reported a limited concern at their schools with some students suspected of drug use. In general, the students were lethargic in class, did not participate, and did not complete homework. One administrator said off-campus drug problems were increasing with both students and parents.

According to five administrators, a substantial problem existed regarding student and parent apathy and/or attitudes. Teachers tended to agree that student attitudes reduced chances for academic success ($\bar{x} = 2.29$). Only one administrator claimed a problem with low student skills at his school, and teachers tended to agree that most Group II students were capable of learning the material taught ($\bar{x} = 2.83$). Four administrators said poor student work ethic substantially interfered with teaching, while another said the biggest problem was that students did not turn in work.
Named as factors which compounded the problem were outside student jobs at one school, and student off-task behaviors in classes at another school.

At two schools, teacher attitude was a reported impediment to teaching. Administrators at those schools said some veteran teachers resisted change, and were reluctant to adopt new methods. At three schools, teacher morale was reported to be low, with teachers opposed to doing anything beyond their instructional duties. Contributing to the reported teacher morale problem was the consistent public refusal to approve a tax for teacher salaries, which had not been increased in 10 years. Administrators also named teacher absenteeism at one school and somewhat negative teacher attitudes at another school as problems. Observers noted negative teacher comments in one school, where several teachers claimed to dislike block scheduling, and in another school, where a teacher said there was too much emphasis on honor students at the expense of ordinary students who formed the bulk of the student population. Contrary to administrator reports, however, teachers tended to agree that most teachers were willing to learn and to seek new ideas ($\bar{x} = 3.11$).

Teacher expectations as an impediment to teaching were also considered. At three schools, administrators said expectations were high. Observers agreed, noting that instructional time in those schools was well used, with students challenged by varied activities, different instructional methods, and assignments which called for critical thinking. In one school,
the administrator said parental low expectations greatly impeded student learning, and consequently led to lowered teacher expectations.

One administrator noted that teacher inconsistency with discipline interfered with teaching at his school. He credited the problem to inexperienced or uncertified teachers confronted by difficult students.

**School strengths.** Group II administrators responded to an open-ended item seeking three school strengths. Six administrators named a good faculty and staff, with five adding that the faculty was willing to change. Also cited by six administrators as a strength was having high academic expectations for teaching and for student learning at their schools, supported by good academic programs and a variety of quality curricular offerings. Named next most often by four administrators as a strength was that the school provided a safe and well-disciplined environment. Two administrators cited a well supported extra- and co-curricular program. Finally, student population, facilities, and leadership were each named by one respondent as a strength.

**School weaknesses.** Responding to an open item seeking three main weaknesses of the school, five administrators cited a lack of community interface and support as a weakness, and five named student absenteeism. Five administrators also claimed problems with teacher absenteeism, despite six administrators having previously cited faculty as a strength. Three administrators said student deficiencies in work ethic and social skills created real problems at their schools. Named twice as a weakness
was staffing problems, while one administrator said more administrative positions were urgently needed in his district. Each named once, and said to be akin to the absenteeism problem, were parent apathy, low teacher morale, and the great distances students must travel to attend centralized schools. One administrator named as a weakness an attempt by the school to implement too many innovations too quickly. At this school, lead teachers embraced change, and were eager to implement each innovation as fast as possible. There were teachers at the school who felt overwhelmed by being asked to do too many things at once, and not being allowed the time to fully implement a change and master it before being asked to take on a new challenge.

**Summary of Group II schools section.** As in Group I, both administrators and teachers reported the most serious Group II discipline problem as student absenteeism. Unlike Group I, tardiness was less of an administrative concern in Group II schools. Indicated as a minor to moderate problem was drug and/or alcohol use. Class cutting, gang activities, vandalism, physical conflicts among students, robbery/theft, and drug/alcohol use were minor concerns. Observational data showed most schools to be orderly. Teachers gave mostly positive messages about work atmosphere and collegiality at their schools.

Triangulation of survey, interview, and observational data revealed paperwork to be a time-related obstacle to teaching in Group II schools. Observers noted excessive interruptions at two schools during instructional
time, while teachers indicated that planning time was insufficient to prepare for classes. Five administrators noted student and parent apathy and/or attitudes as a major student-related obstacle to teaching, and teachers agreed that student attitudes were problematic. Student ability levels were indicated as sufficient for academic success.

Most administrators cited a good faculty that was willing to change, and high expectations for teaching and learning, as strengths. Most frequently named weaknesses were a lack of community interface and support, and absenteeism of both students and teachers.

**Group III Schools**

As shown in Table 17, mean survey scores for Group III teachers varied from 1.99 to 3.55. Mean scores were discussed throughout the Group III narrative. Standard deviations varied between .57 and .93, indicating that Group III teachers differed when scoring individual items, with a higher standard deviation indicating greater differences among teachers within the group. Only the standard deviations which were most extreme were discussed in the narrative.

**Context.** On the day of the school visit, six Group III administrators were observed interacting often with both students and teachers, while one administrator was observed interacting solely with teachers. As in Groups I and II, exchanges appeared to be positive, with first names used and conversations marked by smiles and laughter. Observers indicated an administrative presence throughout the school (cafeteria, grounds, halls) in
only one school. Administrators were observed outside of their offices in two of the three areas in five schools, and only in hall areas in one school.

Administrators reported that student ability was average in six schools, and above average in one school. As in Group I, the school level discipline program of six Group III schools was based on district policy, while one school followed its own discipline code described by its principal as "very firm." District policy in four schools had been intensified by adding more stringent consequences for some infractions. As a safety and security measure, hand-held radios were used in three schools by administrators, office personnel, and maintenance staff for on-campus communications.

All Group III schools had a "zero tolerance policy" for fighting. As part of the discipline program, all Group III schools also used a step process as well as in-school suspensions. Alternative discipline sites, where students could be housed on a periodic or long-term basis, were available to six schools. Security officers were in two Group III schools, where one officer was full-time and the other was part-time. This represented far fewer security officers than in Group I, where all seven schools had officers. Gates and/or fences were observed at three Group III schools, more schools that in the other groups. Students were required to wear ID tags at two schools, one of which also required students to wear uniforms. At four schools, rules stated that students must have passes if outside of class during instructional times.
Several Group III schools had procedures in place to monitor student behavior. Halls in one school were monitored on and off all day by an assistant principal, while in another school, teachers served as hall monitors throughout the day, including class times. Teachers were assigned to this duty at times when they were not teaching. As in Groups I and II, all Group III teachers were punctual to duty stations on the day of the school visit. As in Group I, all teachers in five schools were at their classroom doors for supervision of students during transitions, as a measure of vigilance.

Wide halls at two schools allowed students to pass easily during transitions, with minimal physical contact. At one of these buildings, the layout afforded exceptional visibility down two wide hallways at a time. At four locations, hallways were narrow, with three of these schools managing orderly transitions despite the crowdedness which frequently delayed student movement. Physical contact among students did not appear to cause many problems at these locations. At a school which needed renovations, students had to go outdoors between classes to use the walkways, which was problematic in inclement weather, as was the case the day of the school site visit.

Far more facility problems were noted at Group III schools than at schools in Groups I and II. The outside of one school building was quite dirty, and another school was badly in need of renovations, with at least one building on campus condemned by authorities. At two Group III locations,
there was obvious overcrowding, with large class sizes noted. One of these school plants was outdated and needed extensive maintenance. Unlike Groups I and II schools, four Group III schools had temporary buildings in outer fringe areas of the campus, a signal that existing buildings were inadequate to handle student body size. At one school, there were no covered entrances to the outside buildings, a problem for students on rainy days. With these temporary buildings accessed by a maze of walkways, and located outside of the main buildings, student supervision problems were exacerbated in these areas, as were transition problems of students walking greater distances to get to classes. Lighting was poor at another two schools, with students having to work in dark classroom areas.

At two schools, trophies and school spirit signs were prominently displayed. At four other schools, school spirit signs were conspicuous in hallways. At one of these schools, lockers of football players had been decorated for an upcoming state playoff game. Only one school had bare halls, giving the building almost an unoccupied appearance.

**Student discipline.** The overall layout at three schools aided good student management, with instructional areas in close proximity to one another, and enough time allowed for class changes. Buildings at three other schools were widespread, requiring an excessive amount of student movement between classes, and complicating supervision of students during the school day. Conversely, the layout at the seventh school was extremely crowded, with more classroom space a critical need. School layout was an
obvious difference between Group III and the other groups, both of which had more schools with layouts beneficial to student management efforts.

As observed, student discipline was orderly at five Group III schools. Surveyed Group III teachers tended to agree there was a mild to moderate problem at their schools with student drug and/or alcohol use (\(\bar{x} = 2.64\)). As in Groups I and II, a mild problem was signaled by teachers regarding gang activities (\(\bar{x} = 3.35\)), physical conflicts among students (\(\bar{x} = 2.97\)), robbery/theft (\(\bar{x} = 2.96\)), and vandalism (\(\bar{x} = 3.35\)); and teachers indicated that weapons possession was even less problematic (\(\bar{x} = 3.55\)).

As in Groups I and II schools, Group III teachers indicated student absenteeism (\(\bar{x} = 2.11\)) as a moderate problem. Tardiness (\(\bar{x} = 2.33\)) was also identified as a moderate problem by Group III teachers, unlike Groups I and II teachers who indicated a less serious tardiness problem. Aligned with teacher views regarding absenteeism, administrators indicated a minor concern at two schools and a major concern at five schools, with a large portion of the absentees reported to be special education students in one of these schools. At one school, there was a particularly high rate of absenteeism among the native American student population. Four administrators reported tardiness as a problem, but two of the schools had targeted the problem and administrators felt the situation was improving. Teachers (\(\bar{x} = 3.00\)) and administrators also agreed that class-cutting was a minor problem in Group III schools. Two administrators reported class cutting as a concern, but the problem had been targeted at one school.
Verbal abuse was a concern indicated by administrators at four Group III schools. At one of these schools, the administrator noted an escalation of verbal abuse with a recent influx of students whose families moved into the rural community from a nearby urban area. There was a minor concern at one school with verbal abuse, described as students not showing proper respect to elders. As in Groups I and II, teachers indicated verbal abuse was a minor problem ($\bar{x} = 2.85$), but responses to this item varied markedly from teacher to teacher, with the standard deviation of .93 the highest for Group III teachers.

Although one administrator reported that total inclusion brought discipline concerns to her school, there were other discipline problems not reported by the Group III administrators. For example, at an urban school, students were permitted to wear nose rings and spiked hair in colors such as lime green and purple. Also observed at this school were students who loudly opened food packages, offered food to friends, and ate during class times. There were no observed instances of redirection by either teachers or administrators.

Faculty collegiality. As in Group II, all Group III administrators said teachers in their schools were congenial, professional, and cooperative. Five administrators said departmental cohesiveness was strong, while two others said departmental cohesiveness needed improvement. As in Groups I and II, teachers tended to agree that there was cooperative effort among staff.
members ($\bar{x} = 3.01$), and that departmental colleagues shared beliefs and values about the central mission of the school ($\bar{x} = 3.29$).

In six schools, observers noted many instances of seemingly good student-teacher rapport, with easy communications, smiles, positive reinforcement, and first names used. However, in one school, there were widespread disciplinary problems, a plausible explanation for the uneasy relationships observed between students and teachers. In many cases, students were disrespectful to teachers, who did not take issue but rather ignored the behaviors. At this school, teachers tended to avoid confrontation with the students who were least cooperative.

As in Groups I and II, Group III teachers generally gave positive messages about overall work atmosphere at their schools, signaling that there was broad agreement of overall faculty around the central mission of the school ($\bar{x} = 3.01$), supportive behavior of department chair or curricular area coordinator toward staff ($\bar{x} = 3.36$), and helpfulness of staff members even if the work was not part of their job assignment ($\bar{x} = 3.18$). However, unlike Groups I and II, teachers were neutral about their schools seeming like a big family ($\bar{x} = 2.57$). The standard deviation for this item (.77) indicated that teachers differed considerably when scoring the item.

**Time-related obstacles to teaching.** Four Group III administrators reported that administrative duties, including paperwork, were obstacles to teaching at their schools, with one administrator saying that paperwork demands were indeed excessive for all teachers. Named as problem areas...
were discipline referrals, absence and tardy records, and assignments needed for in-school suspensions or students at alternate sites. Another administrator claimed that administration at his school absorbed much of the paperwork burden. Unlike Group I teachers who were neutral, teachers in Group III indicated that duties and/or paperwork interfered with teaching ($\bar{x} = 2.34$).

Although administrators did not claim problems with interruptions of instructional time, observers noted a problem in five schools, where there was excessive student tardiness, students in and out of classes, and/or intercom interruptions during class times. Intercom messages included calling students to the office, general announcements, and calling lists of student names for various organizations or for athletic purposes.

Other survey items also concerned how time affected teaching. Unlike teachers in Groups I and II, teachers in Group III were neutral about whether they had sufficient time to provide the individual attention that students needed in each class period ($\bar{x} = 2.47$), with the standard deviation of .75 suggesting that teachers had different opinions regarding this item. Also unlike teachers in the other groups, Group III teachers disagreed that there was enough time in a class period to do what they wanted to do with students ($\bar{x} = 2.36$), and that most class preparation could be completed during their planning time ($\bar{x} = 1.99$). The class preparation item had the highest standard deviation (.93) for a Group III item response, indicating that Group III teachers differed in assessing
whether or not they had enough planning time to prepare for classes. On the other hand, as in Groups I and II, teachers tended to agree that they were able to discern student strengths and weaknesses within the first month of school ($\bar{x} = 2.90$).

**Student-related obstacles to teaching.** Four Group III administrators reported that both student absenteeism and tardiness interfered with teaching at their schools. An administrator reported tardiness as a minor concern at an additional school, where he said teachers were inconsistent in enforcing discipline policy on tardies. As did teachers in Groups I and II, teachers in Group III signaled that neither amount of student tardiness and class cutting ($\bar{x} = 2.98$), nor general level of student behaviors such as noise, horseplay, and fighting ($\bar{x} = 2.80$), seriously interfered with teaching.

All Group III schools had in place a “zero tolerance policy” on drugs, and administrators said possession and/or use of drugs did not impede teaching, as it was not a problem on campus. Like Groups I and II teachers, Group III teachers tended to agree ($\bar{x} = 3.05$) that student drug use did not interfere with teaching. Three administrators reported a limited concern at their schools with students suspected of drug use, who were lethargic and/or who slept in class, and who failed to complete assignments.

Just as in Groups I and II, five Group III administrators reported student and parent apathy and/or attitudes as a substantial problem at their schools. Unlike Group I teachers who were neutral, but like those in Group II, teachers in Group III indicated that student attitudes and habits
reduced chances for academic success ($\bar{x} = 2.37$). Student ability levels were reported as problematic in one school, with the principal saying that too many social promotions had produced students who lack the skills to succeed at the high school level. However, five administrators singled out poor student work ethic rather than a lack of skills as an impediment to teaching. As did teachers in the other two groups, teachers tended to agree that most students in Group III schools were capable of learning the material taught ($\bar{x} = 2.91$).

According to five administrators, teacher attitudes did not impede teaching in Group III schools. Teachers concurred in this judgment, agreeing with colleagues in Groups I and II that teachers at their schools continually learn and seek new ideas ($\bar{x} = 3.08$). The standard deviation of .57 was the lowest for Group III on any item, suggesting there were fewer differences among teachers in rating this item. Conversely, observers noted negative teacher comments about school at two locations. At one school, teachers complained about scheduling and salaries, while at another school, teachers complained about societal problems and bad student attitudes.

Teacher expectations as an impediment to teaching were also addressed. At three schools, observers noted expectations as below average, since class time was wasted and expectations were inconsistent from teacher to teacher. Most class time featured teacher lecture and ordinary paper-and-pencil student tasks. In general, observers noted average expectations at three schools, where there was less wasted time and more
variety of instructional methods, although still some unchallenging student activities. In one Group III school, above average expectations for student learning were observed. Instructional time was well used, students were challenged to think and question, and different instructional methods were employed.

Three administrators reported that teacher inconsistency with discipline impeded teaching at their schools, although one school was targeting this problem. Administrators indicated that teachers who had difficulty in consistently managing students were considered less effective with instruction.

**School strengths.** In response to an open item seeking three school strengths, five administrators cited good faculty and staff. In related responses, each named once as a strength were faculty skills, faculty morale, faculty attitudes, and faculty willingness to change. Also cited five times were parents, school district, and community. Student population; a balance between academic and co-curricular program, with high academic standards; and forward-thinking administrative teamwork were each named twice. Finally, named once as a strength was good facilities.

**School weaknesses.** Responding to an open item seeking three school weaknesses, six administrators cited parent and/or student apathy and work ethic, and four administrators named inadequate facilities. Three administrators claimed a lack of community support and/or funding. Each named twice as weaknesses were discipline; student attendance; and
inadequate number of vocational courses, chiefly for the at-risk population. Finally, each named once as a weakness were lack of attention to detail, and high teacher turnover.

**Summary of Group III schools section.** Both administrators and teachers reported the most serious Group III discipline problems as student absenteeism and tardiness. Teachers identified drug/alcohol use as a minor to moderate problem. Observational data showed most schools to be orderly. For the most part, teachers gave positive messages about work atmosphere and collegiality at their schools.

Survey, interview, and observational data revealed paperwork to be a time-related obstacle to teaching in Group II schools. Teachers also signaled time problems with providing adequate individual attention to students during classes, being able to do what teachers wanted to do with students during the time frame of one class period, and managing class preparation needs within the planning time allowed. A majority of administrators named student and parent apathy and/or attitudes as a major student-related obstacle to teaching, and teachers agreed that student attitudes were problematic. Student ability levels were indicated as sufficient for academic success.

In naming school strengths, most administrators cited good faculty and staff; and parents, school district, and community. Most frequently named weaknesses were parent and/or student apathy and poor student work ethic, and inadequate facilities.
Cross-Group Analysis and Discussion

Table 24 shows dimensions of contrast by groups, with contrasts drawn from observations, interviews, and from teacher survey data which

Table 24  Areas of Contrast by Group

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<th>Area of Contrast</th>
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<td>I</td>
<td>II</td>
<td>III</td>
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<tr>
<td><strong>Overall environment</strong></td>
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<tr>
<td>Administrators are visible throughout the school</td>
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<tr>
<td>Physical plant in poor condition</td>
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<td>X</td>
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<tr>
<td>Less stringent school-level discipline</td>
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<td>X</td>
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<tr>
<td><strong>Faculty collegiality</strong></td>
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<tr>
<td>Strong teacher cooperation</td>
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<td></td>
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<tr>
<td>Departmental cohesiveness</td>
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<td>X</td>
<td></td>
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<tr>
<td>School is like family; faculty is cohesive; staff is helpful; supportive behavior of department chair or curricular area coordinator</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td><strong>Time-related obstacles to teaching</strong></td>
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<tr>
<td>Teacher duties and paperwork not burdensome</td>
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<tr>
<td>Time elements items (4)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Student-related obstacles to teaching</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absenteeism; general level of student misbehaviors not problematic</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tardiness and class cutting not problematic</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Drug/alcohol use</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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appears in Table 17. Where multiple data sources existed, the data were triangulated. All identified differences among groups were reported.

Tables 25 and 26 show school strengths and school weaknesses, as claimed by one or more administrators during interviews. These tables not only define areas of contrast by group, but also clearly illustrate strengths and weaknesses held in common across groups. Only one strength reported by administrators broke along scheduling lines. Faculty skills, morale, and attitudes was claimed as a strength by Group III, the traditionally scheduled group, and not by the block scheduled groups.

Only three group strengths reported by administrators were common to all three groups, although not equally voiced—a good faculty willing to change, leadership, and student population. The strongest response pertained to faculty, with 86% of total administrators eager to praise the faculty at their schools. Conversely, leadership and student population were each named as a strength by only six administrators (29%).

Three group weaknesses reported by administrators were common to all three groups—parent apathy or difficult parents, student apathy and poor work ethic, and student and teacher absenteeism. Student apathy/poor work ethic was named as a weakness by 13 administrators (62%), and parent apathy was voiced 11 times (52%). While student and teacher absenteeism was named nine times (43%), two responses were pertinent to students only.
Table 25  **Group Strengths Reported by Administrators**

<table>
<thead>
<tr>
<th>Item</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community and parent support</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Community school/established tradition</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra- and co-curricular program</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Good faculty, willing to change</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>High academic expectations/standards</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Resourcefulness</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safe, well-disciplined school</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Student achievement</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student population</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

One reported area of weakness which broke along scheduling lines was staffing problems, particular to the block scheduling groups. Five of the 14 administrators in the combined block scheduled groups (36%) voiced a need for more staff as well as more staff development. There were five specific types of staffing problems cited. One problem concerned replacing teachers who left at mid-year, when new courses began in block scheduled schools, and at a time when there frequently was a shortage of certified teachers. A second problem concerned attracting teachers who had not
Table 26  Group Weaknesses Reported by Administrators

<table>
<thead>
<tr>
<th>Item</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absenteeism of students, teachers</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Discipline</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Distances students must travel</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>High teacher turnover</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Inadequate facilities</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Lack of attention to detail</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Lack of community support/funding</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Low academic expectations/high failure rates</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Low teacher morale</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Need vocational course offerings</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Parent apathy/difficult parents</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Student apathy; poor work ethic, attitudes, social skills</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Staffing problems</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Student problems</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Too many innovations too quickly</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

previously taught in a block scheduling configuration, and who were apprehensive about reconfiguring lesson plans and units to fit the new time format. Third, there was a problem with teacher supply and demand,
particularly in rural areas. Fourth, there was a need for on-going staff
development for all teachers, focused primarily on instructional
methodologies, and particularly for teachers who were new to block
scheduling. Finally, Group II had a critical shortage of administrative
positions, a problem which needed to be addressed.

Discipline, high teacher turnover, and lack of attention to detail were
reported weaknesses which were particular to the traditionally scheduled
Group III, and therefore also broke along scheduling lines. Discipline was
named twice as a concern, and high teacher turnover as well as lack of
attention to detail were each named once by administrators. That these
concerns were voiced by so few Group III administrators implied that these
were more school-level than group-level concerns.

"Administrative presence," or the visibility of administrators
throughout the campus, was strongest in Group I schools. Administrators
at these schools were seen more often in the halls, in the cafeteria, and on
the grounds than were their counterparts at schools in the other two groups.
This greater visibility occurred despite the fact that schools in Group III had
more administrators per school. Perhaps contributing to the administrative
presence among Group I principals was that they had both more years of
administrative experience and fewer years at their present school than
Group III principals. Being visible on campus may have been a mechanism
for establishing their leadership role. Nonetheless, the willingness of Group
I principals to exert an administrative presence on campus had noticeable
positive effects for the faculty and students. It provided a sense of vigilance and of caring, and seemed to be a causative factor in reducing student discipline concerns in comparison to schools in the other two groups.

Differences in facilities existed between Group III and the other groups. Illustrating that schools within the group were likewise different, however, four Group III administrators named facilities as a weakness, while one administrator named facilities as a strength. Only Group III schools had temporary buildings in place, signaling the inadequacy of existing buildings for the size of the student body. The presence of these buildings crowded four school campuses, necessitated mazes of walkways and excessive student movement between classes, and complicated student supervision in outlying areas. Furthermore, another Group III school, which did not have temporary buildings, was overly crowded, indicating that either temporary buildings or additions to existing buildings were needed for classroom space. Facilities were such in Group III that a building at one of its schools had been condemned for student use.

Since facilities contribute to overall working conditions, the poor facilities in Group III schools could have been a factor in the 8.6% teacher turnover rate. Also, since supervision problems were exacerbated by the temporary buildings in outlying areas of Group III schools, another possible link to facilities was the higher number of administrators in Group III. It is
possible that more administrators were hired into Group III schools so that "administrative presence" would be more apparent.

Although school-level discipline policy was remarkably similar in the three groups, discipline policy in Group II schools was less rigorous. For example, only five Group II schools had a zero-tolerance policy for fighting, whereas all schools in the other groups had such a policy. Furthermore, the only school in the study which reported an unenforced zero tolerance policy was a Group II school. Vigilance was also less apparent in Group II, with fewer school sites having hall monitors, or having teachers at classroom doors during transitions. Two-way radios were used at only one school for better campus communications, and only one school had a security officer on campus. While having campus security personnel could be viewed either as a precautionary measure or as a response to prior safety concerns, it nonetheless affords an element of safety and vigilance to high schools.

The fact that Group II had the lowest teacher turnover rate, despite less aggressive school-level discipline, could signal that a more rigorous school-level discipline program was unnecessary, due to a stable and more experienced faculty that was better equipped to deal with student discipline at the classroom level. In the same vein, administrators reported fewer instances of Group II teacher inconsistency with discipline than did administrators in the other groups, perhaps because of the stable teaching force. With administrators tying instructional ineffectiveness to teacher
inconsistency with discipline, it is an interesting finding that absenteeism, tardiness and class cutting, and the general level of student misbehaviors were indeed found to interfere less with teaching in Group II schools. Perhaps students were more familiar with teachers and teacher reputations at their schools, and thus less likely to misbehave. It is also conceivable that, when compared with experienced administrators, the less seasoned Group II administrators who were also most short-handed in terms of auxiliary staff, were less complacent, more enthusiastic and hands-on, and more focused on supporting instruction, which in turn empowered teachers.

There were similarities as well as differences found in the qualitative data. In general, the groups were more alike than different regarding student discipline, with the greatest discipline concerns across groups being absenteeism, tardiness, drug or alcohol use, and verbal abuse of teachers. The literature claimed that student discipline would improve with the onset of block scheduling, mostly because of fewer transitions during the school day, and thus fewer occasions for student misbehavior (Reid, 1996). In the present study, however, any differences between groups were subtle.

Although overall discipline was not problematic in sampled schools, absenteeism surfaced as the greatest concern across groups. Reasons advanced for student absenteeism included parent apathy, and the great distances students must travel to attend consolidated schools. Teacher absenteeism was attributed mainly to low teacher morale. In this study,
Absenteeism was found to be least problematic in the 3-year block scheduled group, and most problematic in the traditionally scheduled group, reinforcing block scheduling literature claims that students appear to attend school more regularly in a block scheduled school. Since the instructional pace in block-scheduled classes is faster, students seem to have more difficulty recovering from absences (Averett, 1994; Usiskin, 1995). At some schools which were subjects of previous studies, decreased student absences were claimed after the implementation of block scheduling (Baylis, 1983; Pisapia & Westfall, 1997c).

In general, teachers across groups gave mostly positive messages about faculty collegiality. However, differences among groups emerged through triangulation of survey and interview data. Compared to the other groups, cooperative staff effort was stronger in block-scheduled Group I schools, while departmental cohesiveness was stronger in block-scheduled Group II schools. Teachers within groups were consistent in rating five additional faculty collegiality items, represented by survey data only, indicating a more positive perception by Group I teachers, a less positive perception by Group II teachers, and the least positive perception by Group III teachers. These items concerned a family atmosphere at schools, the broad agreement of faculty about school mission, staff helpfulness, teacher willingness to continually learn, and supportiveness of department chair or
curricular area coordinator. Across groups, teachers gave lowest ratings to the item concerning family atmosphere at school.

Regarding faculty collegiality, the fact that block scheduled Groups I and II consistently earned higher means than the traditionally scheduled Group III, may speak to literature claims that block scheduling naturally encourages teacher sharing, professionalism, and relationships. This is due to the sharing of professional expertise, materials, and ideas in a block scheduling configuration by teachers, who become highly concerned with how to redesign lessons for longer instructional periods (Canady & Rettig, 1995a; Carroll, 1990).

Although the concern was pervasive across groups, triangulation of survey and interview data pointed to differences among groups regarding the extent to which teacher duties and paperwork interfered with teaching. Problems were described by administrators across groups as excessive paperwork required for discipline referrals, special education students, absenteeism and tardiness records, and student grade and/or progress reports (as often as every two to three weeks in some block scheduled schools). Several administrators said paperwork demands on all teachers were excessive. Group I emerged as different from the other groups on this item, with teaching less impeded by duties and paperwork.

Four additional survey items concerned time elements associated with teaching, asking whether there were enough time for teachers (1) to
accomplish what they wanted with students during a class period, (2) to give individual attention to students who needed it within the time frame of a class period, (3) to discern student strengths and weaknesses within the first month of school, and (4) to complete most class preparation during the planning time allowed. Means were highest for Group I on the first, second, and fourth items, and for Group II on the third item. In all cases, the mean for Group III was lowest. While all groups were different, it is important that these time-related items clearly differentiated between block scheduled groups (I and II) and the traditionally scheduled group (III), showing block scheduling helped to provide the time needed to support elements of instruction.

Survey means across groups indicated that teachers perceived a need for more preparation time in the sampled schools. Whereas teachers in block scheduled schools were neutral in rating the item, neither agreeing nor disagreeing that there was enough time, teachers in the traditionally scheduled schools unequivocally indicated that the time allowed was not adequate. This finding speaks to claims in the literature that teacher planning would be facilitated by the increased preparation time of the block scheduling format, coupled with the decreased number of preparations (Cannady & Rettig, 1995a; Shoenstein, 1996).

Student apathy, which arises when students fail to see the relevance of making an effort, emerged as a significant obstacle to teaching in the
high schools which formed this sample. It was named as a weakness by
50% of administrators in the combined block scheduled groups, and 86% of
administrators in traditionally scheduled group. Although the proportions
of the overall problem are alarming, this finding may speak to claims in the
literature that block scheduling reduces student apathy. Canady and Rettig
(1995a) indicated that the longer time format of block scheduled class
periods affords more diversity in instructional strategies, which better
captures student interest. Also, there were claims that block scheduling
lessens student stress in two ways: (1) students are better able to focus on
fewer subjects, teachers, and demands at a time (Canady & Rettig, 1995a;
Carroll, 1990); and (2) the demands on students are fewer, because the
longer instructional time format lessens teacher stress in covering the
prescribed curriculum (Stockard & Mayberry, 1992). In short, the literature
argued that block scheduling provided better conditions for teaching and
learning, allowing a more positive and meaningful connection with
education for students, which in turn lessened student apathy.

Also identified as a serious problem in the sampled high schools was
parent apathy, cited by 36% of administrators in the combined block
scheduling groups, and by 86% of administrators in traditionally scheduled
schools as a weakness. One administrator linked student apathy, or
negative attitudes, to parent or "home" apathy. Administrators in all
groups tied a poor work ethic at school to minimum-wage student jobs
outside of school, with students more focused on keeping up peer-group appearances than on school success. Parents tended to defend the priorities of their children, namely, that a minimum-wage job was more important than education, which indicated to administrators the negative attitude of both students and parents toward education as a long-term investment.

Akin to parent apathy, a lack of parent and community support also surfaced as a problem across groups. Although some Group II schools had issues with the community, which had failed for 10 years to approve a tax for needed teacher raises, there were other parental support issues across groups, especially with parents who took an adversarial stance when their children were cited by school authorities for disciplinary or academic deficiencies. Also articulated by administrators was the failure of parents to reinforce the importance of school with their children, to assist with extra-curricular activities, and to attend night and/or weekend functions despite invitations and urging from the school. Ironically, there were some administrators who named parent and community support as a strength.

Chapter Summary

In the present study, results of the factor analysis were used to test the four hypotheses, which predicted that the three groups of schools would significantly differ on overall climate as well as on the dependent variables Student Discipline, Faculty Collegiality, Time-related Obstacles to Teaching, and Student-related Obstacles to Teaching. Quantitative results
revealed that both overall climate and Factor 3 (Time-related Obstacles to Teaching) were significantly different among the three groups of schools, as predicted in Hypotheses 1 and 4. Raw means revealed Factor 3 group differences to be consistent with the direction predicted in Hypothesis 4, with Group I (block scheduled for 3 years) highest and Group III (traditionally scheduled) lowest. Group means for Factor 2 (Faculty Collegiality), not shown to be significant, also followed the predicted directionality pattern.

It is particularly important in the present study that Time-related Obstacles to Teaching was the single factor shown by ANOVA and post hoc tests to be significantly different among the three groups of schools. This result provides empirical evidence for time allocation claims in block scheduling literature.

Qualitative results focused on answering whether there were qualitative differences among high schools that have been block scheduled for 3 or more years, high schools that have been block scheduled for 2 years, and high schools that are traditionally scheduled. Based on interview, mean survey, and observational data, results showed differences as well as similarities among groups.

The greatest student discipline concern in the sampled schools was student absenteeism. To a lesser extent, tardiness, drug or alcohol use, and verbal abuse of teachers also emerged as student discipline concerns.
Revealed as significant obstacles to teaching were student apathy/attitudes and poor work ethic, parent apathy, teacher duties and paperwork, and insufficient teacher preparation time.

Several findings in the qualitative data reinforced block scheduling literature claims. First, student absenteeism was least problematic in block scheduled (Group I) and most problematic in traditionally scheduled schools (Group III). Second, on the faculty collegiality items, the block scheduled groups consistently earned higher means than the traditionally scheduled group. Third, the time-related elements associated with teaching differentiated between block scheduled groups and the traditionally scheduled group, showing block scheduling to provide the time needed to support instructional elements. Fourth, student apathy, although a problem of alarming proportions, was indicated to be more prevalent in traditionally scheduled schools.
CHAPTER FIVE: PHASE II RESULTS

Introduction

The primary purpose of this study was to examine the effects of block scheduling on school climate in high schools. Phase I data collection focused on surveying teachers in a sample of 21 schools, with qualitative data also collected in the form of an interview with an administrator as well as two researcher observations at each school site. Phase II of this study involved selection of two of these schools for more intensive study, using purposeful sampling (Patton, 1990). Details regarding the sampling were presented in Chapter 3 and are again provided in this chapter.

Phase II focused on qualitative data collection at two Group I schools identified as outliers through Phase I quantitative results. By probing more deeply into the contextual aspects of these two schools, Phase II qualitative data collection sought to provide an explanation for climate differences which existed within the group.

The present chapter presents Phase II data collection results, and is divided into five major sections. The first section briefly discusses the study of outliers. The second section addresses case study research, qualitative sampling, and Phase II sampling and procedures. The third section presents context information and a short case study on each of the two schools, while the fourth section features a cross-case analysis and discussion. The final section presents a summary of the chapter.
The Study of Outliers

Outliers are cases that deviate from predicted pattern, that vary from what is usually expected (Stringfield, 1994). Studies of outliers are common to the field of school effectiveness research, according to Stringfield (1994). The interest lies in studying why some schools are effective while others are not, despite having a similar type of school population. Using the outlier research design necessitates first identifying positive outlier schools that perform above what is expected, negative outlier schools that perform below what is expected, and typical cases that perform as expected.

Since outlier schools for the present research were selected for case studies based on dependent variables rather than on the basis of contextual variables, the more common practice (Teddlie, 1994), the researcher recommends adjusting the outlier design for subsequent research regarding outlier selection. The intent of the present study was to explain existing climate differences within Group I, which included schools with 3 or more years of block scheduling. Selected for in-depth study from this group were the school with the most positive teacher reports of climate and the school with the least positive teacher reports of climate, with school climate defined as the overall mean of the four dependent variables for each school.

Case Study Research, Sampling, and Procedures

According to Yin (1994), a case study is "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not
clearly evident" (p. 13). A single subject is examined in-depth for each case study, with large quantities of data collected. This requires using varied qualitative and sometimes quantitative data collection methods (Gall et al., 1996). Data and methods are triangulated to arrive at themes or conclusions about the subject or entity.

The case study method is comprehensive, and best used to study particular people, problems, or situations in great depth for better understanding (Patton, 1990). It is an approach often used for studies in social science research, in fields such as psychology and sociology, and in practice-oriented fields such as education and social work (Yin, 1994).

**Qualitative Sampling**

Sampling logic is an area which highlights the contrasts between qualitative and quantitative research methods (Patton, 1990). Qualitative research requires purposeful selection of small samples rather than random sampling of large, representative samples as used in quantitative research. Further, qualitative inquiry usually stresses selection of "information-rich cases" (Patton, 1990, p. 169) which yield the greatest insight, while quantitative inquiry stresses generalizability to a population. Thoroughly studied cases can provide significant information, explaining why or how things happen, or providing a better understanding of quantitative results.

**Sampling and Procedures**

Phase II of the present study utilized mixed purposeful sampling methods. Extreme or deviant case sampling was used to select the two case
study schools, which represented the most positive and the least positive teacher reports of mean climate among Group I schools, while proportional stratified sampling was used to select participants at each school for interviews. With teachers proportionately selected from core subject areas and high school grade levels, the principal was asked to verify the group as representative of the school faculty in terms of gender and ethnicity. Pseudonyms were used for school names to guarantee anonymity of all participants, thus allowing respondents to be as candid as possible.

Case study data were collected on a one-day site visit to each of the two selected schools, and augmented by archival data as well as Phase I qualitative data to form a complete picture of the schools. A researcher-developed instrument (see Appendix B) in a standardized, open-ended format (Patton, 1990) was employed for teacher interviews, and a general observation was conducted at each school during the site visit.

To make maximum use of teacher release time, both individual and focus group interview(s) were used at each of the two schools. Individual interview responses were read back to the teacher to confirm accuracy, with additions and/or deletions noted into the record and confirmed. Group interviews provided an automatic measure of quality control on data collection, in that participants served as checks and balances on one another by weeding out inaccurate or extreme views (Patton, 1990). Focus group interview responses were captured using both written notes and a tape recorder, with taped responses later transcribed and the data triangulated...
with individual interview data. All interview data were analyzed at the school level using unitizing and categorizing processes (Lincoln & Guba, 1985) to find emerging themes, triangulated with observational and archival data, and then triangulated with analyzed Phase I data to answer Question 2 of this study: What differences exist regarding the dimensions of climate between the school with the most positive teacher report of climate, and the school with the least positive teacher report of climate, provided both schools had at least 3 years involvement with block scheduling?

Phase II case studies employed multiple methodological sources and procedures. Interviews and observations were used for data collection, in addition to archival data provided by school administrators and Louisiana Department of Education (Bulletin 1472, One Hundred Forty-Ninth Annual Financial and Statistical Report 1997-98; LDE School District Profiles Report for SY 1997-98). The context of each school was explored using general background information and archival data to describe the civil parish, the school district, and the school. An exploration of the data gained through teacher interviews was then provided in narrative form, using the categories of administration; areas identified as factors in this study (Student Discipline, Faculty Collegiality, Time-related Obstacles to Teaching, and Student-related Obstacles to Teaching); staff development; and block scheduling. A later section in this chapter explores comparisons and contrasts between the two schools in a cross-case analysis and
discussion. For the analysis section, Phase I frequency data were used to augment Phase II archival, observation, and interview data.

Case Studies

School Contexts

Table 27 presents context information regarding the case study schools. Archival data was provided by administrators at the two schools. Additionally, Louisiana Department of Education data (LDE Bulletin 1472, One Hundred Forty-Ninth Annual Financial and Statistical Report 1997-98; LDE Louisiana Progress Profiles State Report for SY 1997-98) were used to describe and compare the civil parishes, the school districts, and the schools. Where available, state-level data were added for comparison purposes.

The civil parishes and districts. The civil parish in which Frankfort High School was located was suburban, linked by highway to a nearby major metropolitan area. As shown in Table 27, economic indicators reflected a relatively affluent parish when compared to others in the state, with the percentage of parish residents living below poverty level well under state average, an unemployment rate only 0.1% above state average, and a per capita income which exceeded the state average by $1,000. With almost 60% of the parish labor force engaged in white-collar work, the local school district was a major employer. Several industries in the area were also leading employers and hired mostly blue-collar parish workers.

The school district in which Frankfort was located operated from a heavily endowed parish tax base, allowing it to provide competitive teacher
Table 27  Civil Parish, School District, and School Context Data for Case Study Schools, 1997-98 School Year

<table>
<thead>
<tr>
<th>Item</th>
<th>Frankfort High School</th>
<th>Blingham High School</th>
<th>State Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Parish</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community type</td>
<td>Suburban</td>
<td>Rural</td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>48,000</td>
<td>44,000</td>
<td></td>
</tr>
<tr>
<td>Below poverty level</td>
<td>15%</td>
<td>31%</td>
<td>23.6%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>6.7%</td>
<td>8.2%</td>
<td>6.6%</td>
</tr>
<tr>
<td>Per capita income</td>
<td>$20,700</td>
<td>$18,300</td>
<td>$19,700</td>
</tr>
<tr>
<td>School District</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average full-time teacher salary</td>
<td>$35,200</td>
<td>$27,900</td>
<td>$31,100</td>
</tr>
<tr>
<td>Per pupil expenditure</td>
<td>$8,500</td>
<td>$5,200</td>
<td>$5,600</td>
</tr>
<tr>
<td>Percent of budget devoted to instruction</td>
<td>68.2%</td>
<td>68.5%</td>
<td>68.9%</td>
</tr>
<tr>
<td>The School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty w/Master's degree or higher</td>
<td>43%</td>
<td>39%</td>
<td>39.8%</td>
</tr>
<tr>
<td>Number of students</td>
<td>1,450</td>
<td>868</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>34%</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>65%</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>Free/reduced price lunch</td>
<td>34%</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>Percent college-bound</td>
<td>41%</td>
<td>18%</td>
<td>37.6%</td>
</tr>
</tbody>
</table>

salaries and per pupil expenditures which well exceeded state averages, as shown in Table 27. Additionally, area industries were generous supporters of local education, often underwriting grants that provided large sums of money over multi-year periods. Most adjacent urban and suburban school districts were not as well supported. In fact, many residents settled in the area due to the progressive school district, with several large subdivisions springing up in the past 10-15 years. Teachers described the school district...
as supportive of school efforts "as long as it works," while an administrator said the district supported any expenditures for safety's sake.

On the other hand, the civil parish in which Blingham High School was located was rural. As shown in Table 27, economic indicators reflected a parish that was below average by state standards, with the percentage of parish residents living below poverty level as well as the unemployment rate well above state average, and the per capita income $3,400 less than state average. Many of the almost 43% of the parish labor force engaged in white-collar work were employed by the local school district. A large manufacturing industry, also a leading employer in the area, hired many of the approximately 35% of parish residents who were blue-collar workers.

Funding for the district in which Blingham was located rested upon a limited tax base, with the teacher pay scale and the per pupil expenditure below state average, as shown in Table 27. Although neighboring school districts served student populations that were ethnically comparable to the district in which Blingham was located, those districts were financially better supported. According to the principal, getting well-trained, certified teachers was a problem, due to the below-average pay scale and also due to location, since Blingham was far removed from heavily populated areas.

Selection of the case study schools, both block scheduled for 3 or more years, was based on teacher reports of climate rather than on contextual variables, the more common practice for outlier studies (Teddlie, 1994). As shown in Table 27, the case study schools were contextually similar as to
student population, indicated by comparable ethnicity and identical SES (34%). However, the schools were also contextually different, in that one was a large suburban school of 1,450 students, and the other was a smaller rural school of 868 students. One would think the smaller, rural school more likely to maintain a good school climate (Teddlie, 1994), but in fact, the larger school had the most positive teacher reports of climate, while the smaller school had the least positive teacher reports of climate of the Group I schools. As the case studies will reveal, with wise decision-making, a personalized school environment was achieved at the larger school. Conversely, lingering problems in the smaller school undermined effectiveness.

What is certain is that the wide disparity in district resources, as illustrated by teacher salary and per pupil expenditure figures in Table 27, was a major contributor to differences that existed between the two schools. The wealth of the district in which the larger school was located vastly affected the success of the school, allowing advantages that the smaller school simply did not have. While one district enjoyed a surplus of resources, the other district suffered a scarcity of resources, operating on a modest budget. However, it is important to remember that resources alone cannot ensure success. The case studies will illustrate that, more than simply the availability of resources, it was the exceptional use of those resources that kept all players in the larger school focused on the fundamental goal of instructional effectiveness.
The schools. Frankfort High School was one of two consolidated high schools in its district. As seen in Table 27, the percentage of faculty with at least a Master's Degree was above state average, a statistic encouraged by a good district pay scale which attracted applicants. Almost two-thirds of Frankfort's large student population was white, and approximately one-third of the student population participated in the federally subsidized Free and Reduced Price Lunch Program, an indicator of relative poverty of students. A high percentage of Frankfort students attended college, and the principal described general student ability level at the school as average.

On the other hand, Blingham was the only high school in its small district, which had several elementary schools feeding into consolidated middle and high schools. As seen in Table 27, unlike Frankfort, the percentage of Blingham faculty with a Master's Degree or higher was below state average, but similar to Frankfort, three out of five Blingham students were white. Just as at Frankfort, approximately one-third of students participated in the Free and Reduced Price Lunch program, and the principal described general student ability level as average. The number of Blingham college-bound students was less than 50% of the state average.

Table 28 contains data over a period of 2 to 5 years for Frankfort High School, Blingham High School, and the state on student achievement and student participation indicators. The American College Test (ACT) data was comparable for a period of more than 3 years, but the remainder of the data is shown for 3 or fewer years. The Graduate Exit Exam (GEE)
### Frankfort High School, Blingham High School, and Louisiana Indicators for Student Achievement and Student Participation

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$^a$Includes both public and nonpublic schools.

$^b$Data is not comparable with data prior to 1995-96, at which time both regular and special education students were included in calculations.

$^c$Because of reporting differences among districts, no state suspension or expulsion averages are shown prior to 1996-97.
data was not comparable with data prior to 1995-96, when the state began including both regular and special education students in the calculations. Additionally, no state suspension or expulsion averages were available prior to school year 1996-97, due to reporting differences among districts. With these caveats in mind, an analysis of the data shows trends which can be interpreted in terms of school-level effects which occurred in each of the schools since the implementation of block scheduling in school year 1995-96.

Academic indicators suggested that block scheduling had a positive effect at Frankfort High School. ACT composite results showed an upward trend over the 5-year period. The initial decrease of 0.2 points at the onset of block scheduling was countered by an overall 0.4 point increase during the 3 years of block scheduling. Compared to the state average composite, which increased 0.1 point over the 5-year period, Frankfort showed twice as much gain, and for 1997-98 was above state average. During the 3-year period, GEE results likewise showed gains, with passing rates in language arts rising by 5%, and in mathematics by 1%. In comparison, over the 3-year period, the state average rose by 1% in language arts, but decreased by 1% in mathematics, widening the gap between the higher mathematics passing rates of Frankfort and the state average.

Blingham academic indicators suggested that block scheduling had a minor but overall positive effect, except for the GEE mathematics indicator. ACT composite results showed a slight upward trend over the most recent 4 years of the 5-year period, with scores increasing by 0.1 point during the 3-
year period when block scheduling was used. Over the 4-year period, Blingham retained its position relative to the state, that is, 1.8 points below state average, after a dramatic relative drop in scores at the beginning of the 5-year period. GEE passing rates showed a gain of 3% in Language Arts, but a loss of 4% in mathematics during the 3 years of block scheduling. In comparison, over the 3-year period, the state average rose by 1% in language arts, but decreased by 1% in mathematics, with the gap between state averages and the lower Blingham passing rates narrowing from 3% to 1% in language arts, but widening from 9% to 12% in mathematics.

Since block scheduling was implemented at Frankfort, figures for both student attendance and dropouts improved, with both indicators above state average. Student attendance at Frankfort rose by 0.4%, and dropouts decreased by 0.7%. In contrast, in-school suspensions rose significantly during the second and third years of block scheduling, to a rate more than double the state average. Although this seems alarming, it could simply indicate that a diligent student control mechanism was put in place at the school, as indicated by interviewed teachers. More importantly, while in-school suspensions rose almost 7%, out-of-school suspensions dropped to almost zero, indicating that students being disciplined were kept in the school environment where they could continue to learn, rather than removed from the environment. Both the out-of-school suspension rate and the expulsion rate at the school were well below state average.
Contrary to claims in the literature that block scheduling would improve student attendance, Blingham student attendance worsened by 3.3% over the 3-year block scheduled period, with the gap between state average and the below-average Blingham attendance rate widening from 0.1% to 2.8%. However, a 1.7% decrease in student dropouts during the 3-year period placed Blingham above state average by 0.3% on this indicator. The size of the differences over a 2-year period on these two indicators suggested that perhaps students who were regularly absent were potential dropouts, who had not yet dropped out but intended to do so.

In-school suspensions at Blingham, which decreased by 0.8% while the state average rose by 3.3%, were at state average during the 2-year period for which data were available. Both out-of-school suspensions, which decreased by 1.3%, and expulsions, which decreased by 0.9%, were well below state average. The large relative decreases in all three discipline indicators could signal that, over the 2-year period, either there was relatively less discipline trouble at the school, or there was less done about discipline at the school. The latter seems more likely the case, when triangulated with teacher interview data regarding the laissez-faire Blingham administrative stance on discipline.

The physical plants. The high school buildings at both Frankfort and Blingham were situated on an approximately 20-acre tract, with parking areas, stadium, track facility, and baseball complex along the perimeters. At Frankfort, the school complex included a large main building, three
classroom buildings, and a gymnasium, all connected by covered walkways. The main building housed administrative offices; several classroom wings; areas for guidance, student health, library, auditorium, cafeteria, and music practice rooms; and a school store which sold items featuring the school logo and colors. In the commons area, banks of lockers sat in a "locker pit," located two steps below floor level so visual supervision of students was not constricted. Many students were observed using the two carpeted locker pit steps along the perimeter for seating as they socialized during lunch break.

Classroom buildings and main building wings were well-equipped and lighted, with acoustics aided by indoor-outdoor carpeting. Some classrooms were spacious, while others had been designed for smaller classes. Halls in these areas featured subject-specific displays as well as wall murals painted by art department students. Classroom wings and buildings were divided into nested content areas, with each area containing a large, well-equipped faculty work room. Frequent departmental meetings were held in these faculty rooms. On the well-landscaped campus, benches and a wooden pavilion provided outdoor student seating, with shrubs and blooming flowers in several garden areas. School areas were clean and well tended, with maintenance staff observed cleaning and tidying up throughout the day of the site visit.

At Blingham, the main complex featured three 1950s-era buildings, and two buildings added in the 1970s when district high schools were consolidated to the present location to achieve full integration. These two-
story buildings were joined by open walkways on the ground floor, and
glassed-in walkways on the upper floor. The older buildings housed
classrooms, cafeteria, faculty lounge, and student health areas. One new
classroom building formed a quadrangle of sorts with the three older
buildings, while the second new building located toward the front of the
property had administrative and guidance areas on the main floor, and
classrooms on the second floor. Along the outer perimeter of the quadrangle
were self-contained library, auditorium, and gymnasium facilities.

Dividers with mounted eye-level posters and signs ran down the
center of several wide halls, to channel student traffic into one-way lanes.
Some particularly wide hall areas housed pockets of lockers. Original
student artwork, including murals, was seen in instructional areas. On the
day of the school visit, most campus areas were clean, but several buildings
looked run-down. Peeling and/or faded paint gave the older buildings a
dilapidated appearance, while hallways and classrooms were dark, with
lighting an obvious need. The lack of landscaping contributed to a stark
campus appearance, with only a few small shrubs and trees dotting the
mostly open areas. In the center of the dirt and grass quadrangle area sat
two wooden benches, which hardly looked inviting.

Frankfort High School

The administration. There were two principals and two assistant
principals at Frankfort High School. One principal had a conventional role,
while the second principal headed a school within a school for the small
population of gifted and talented students as well as low-performing and learning disabled students. Across the board, interviewed teachers gave the administration credit for good discipline, academic emphasis, support of teachers, and excellent organizational skills.

With its impressive resources, Frankfort was able to provide extra personnel to relieve some of the burdens normally placed on teachers, reflecting administrative efforts at organizing for greatest effectiveness. For example, a full-time attendance clerk handled absence and tardy paperwork, distributing a daily printout which teachers retained for their records. There was a full-time copy clerk who took copy requests from teachers. Monitors were hired for parking lot, cafeteria, and break time supervision of students, with teachers not required to stand duty. Additionally, a full-time staff development professional planned and coordinated on-going teacher training and in-services.

Communications were enhanced by daily bulletins, printed and distributed throughout the campus for both teachers and students. These communiques contained reminders about activities around school, such as club happenings, graduation practice, students excused for various reasons, ACT and advanced placement testing information, and interview dates for new positions. On the day of the site visit, the intercom was heard only for routine early morning activities, before the start of the first class.

The school was also highly departmentally organized, with department chairs given an additional unencumbered time block to handle
extra paperwork and duties inherent in the position. The department chair received and checked all lesson plans for benchmarks, standards, and at least three instructional strategies plus hands-on activities per period; observed classes within the department, with a formative supervision role; met weekly with administrators for site-based decision-making; and reported back to department members through regularly scheduled departmental meetings. One teacher described the school as "a well-oiled machine," with good communications. Teachers worked on their own professional development plan by disciplines within departments, and used peer coaching to police the quality of instruction. An assistant principal said that as the school grew and the faculty expanded, departments took on a new emphasis to provide for teacher support and collegial relationships.

The school was focused on academics, with goals for both faculty and students, and everyone apparently worked toward increasing student achievement. Teachers said there were no interruptions of class time at all, noting "never, that's a no-no." Insofar as instructional strategies, one teacher said the principal was learning to appreciate cooperative strategies, and was "willing to change and grow. Remember, he was a straight-line traditional." Teachers voiced satisfaction with working conditions, calling Frankfort a "professional environment," and saying there were people in line who would love to have their jobs.

Student discipline. Teachers described administration as "very good about discipline," and the principal as someone supportive of teachers in
general. "If he notices you are writing a large number of referrals lately, he'll question you. But he will back you up." An assistant principal handled discipline, and most infractions followed a step procedure leading to detention, suspension, and possibly expulsion. For students booked for some type of problem with the law, the school district had an alternative site where students individually pursued Carnegie units required for high school graduation. The full-time campus security officer, described by teachers as having an excellent overall relationship with students, annually spoke to incoming freshmen about expectations for behavior.

According to the Frankfort principal, in-school suspensions accounted for the disposition of most disciplinary infractions, with less than 1% of incidents leading to external suspensions. The in-school suspension (ISS) program at the school was centralized, staffed by full-time personnel who collected student assignments from teachers, and then monitored students as they completed their work in isolation from the general population, not allowed to interact with others at all on suspension day(s).

There was a high standard of vigilance at the school, with a proactive rather than reactive overtone. Monitors were hired for parking lot, yard, cafeteria, and hall duty. Although free of duty, teachers were required to stand outside of the classroom door during class changes, and one teacher said the principal "checks to see if we are doing it and lets us know if he sees we are not out there." The student dress code was strictly enforced. In
fact, on the day of the site visit, one student found to be out of compliance with dress code was observed being escorted to the office for discipline.

The number one discipline referral was for inappropriate language with teachers, a problem described by teachers as minimal. Teachers said some students were fairly disrespectful and impolite, but it usually "went back to homes where students are not taught proper behavior toward adults or respect for authority." According to both administrators and teachers, neither absences nor tardies posed a problem at Frankfort, with the student attendance rate at 94%. One teacher said problems "go centrally through the attendance office, and teachers are basically free of this." The few absence and tardy problems were said to occur habitually with the same students, or during first period due to late busses. Habitually tardy students were sent to the discipline office, and punished first by detention, then by in-school suspension. Observers noted that student transitions were smooth between classes, and students were in classrooms during instructional times. Class cutting was also described by teachers as minimal, with any problems handled through the discipline office.

Asked about fighting, drugs, and gangs, teachers consistently replied that fighting has been drastically reduced during the past 2 years. Local authorities assisted the school district in enforcing a zero tolerance fighting policy, with problems immediately handled. Authorities were contacted, the students involved were picked up, parents were required to pay a $250 fine when they claimed their children, and both students and parents were
required to attend counseling before the child was reinstated at school. One teacher estimated an 80% decrease the first year the security officer was on campus, while another jokingly added “the $250 might have something to do” with the reduced incidences of fights.

According to teachers, there was no campus drug problem; “it’s isolated here, if it is here.” Most teachers said that if students used drugs, it was not at school, but most indicated an increasing drug problem in the community. Teachers described noticing some symptoms of drugs, like lethargy and apathy, but also said it was difficult to draw the line between a student who is on drugs, and a student who is just not an early riser but has to be at school for 7:00 AM. Several teachers claimed to be naive, and unable to distinguish whether students were on drugs or not.

It would not be easy for students to have drugs at Frankfort. All students entered the school at a central door, with monitors on duty. There were random student searches for drugs, weapons, and beepers or cell phones not allowed on campus. According to the principal, there also were frequent random checks of student bags and lockers. Additionally drug dogs were brought in twice each year, or more if there was probable cause.

Teachers reported gangs in the community, although not visible at school, with students “forbidden to display” any gang membership signs. A male teacher reported “‘wanna-bes’ who imitate, pretend,” but added that there was “no little clique claiming territory” at the school. Illustrating the positive school environment, one teacher remarked, “I don’t think anybody
wants to come on campus and be identified as a gang member. It's just not cool, not done. Not the status quo."

**Faculty collegiality.** Frankfort teachers spoke of good working relationships, saying "no one is too proud to consult with others in order to improve" and that peer tutoring was really a strong point within the faculty. One teacher who had been in three other schools, called the Frankfort faculty the "best faculty I've ever seen." Interviewed teachers described cordial, cooperative, sharing relationships with "no one-upmanship," and claimed Frankfort teachers had "the utmost respect for each other."

Teacher attitudes toward new ideas and professional improvement were described as "aggressive" and "kind of refreshing" by two teachers new to the school. Another teacher proudly described the school as "a first-to-do school. We're on the ball. We're the pilot person." Teachers felt most faculty members were willing to work for improvement and open to new ideas, and that attempts to institute change were met positively.

With such a large faculty, teachers admitted they did not know all faculty members, and that the school had become more departmentalized as the it had grown. The principal explained that the school operated through site-based management, structured with a team approach to promote good communications between and among departments. Team members included department heads, a role that was rotated within departments so that different faculty members had an opportunity to serve on the site-based team. Departmental meetings were emphasized for teacher interactions.
**Time-related obstacles to teaching.** Although all teachers remained at school for 40 minutes after students left each day, some complained that this time was often "encumbered for other than planning," implying that too much teacher time was involved in professional development, at the expense of instructional planning. A teacher of many years standing at the school, while conceding that indeed "a lot of time" was involved, said that most teachers benefitted greatly from the staff development provided.

The pace of the 4X4 schedule was described as frantic. "It’s like, every two and a half weeks we give out progress reports, and two and a half weeks after that you have report cards." Moving at a pace equivalent to double-time, teachers also had to prepare lesson plans and grade regular homework. Teachers said that team meetings and staff development demands further compromised their available time.

Teachers said that paperwork was a burden on their time, claiming that providing assignments for in-school suspended (ISS) students was particularly problematic. Usually not notified to send work for ISS students until just prior to first block, teachers said that if they were to instruct their first-block students, they could not take time at that moment to prepare and send assignments, yet were often rushed to get paperwork to ISS personnel immediately. Communications between teachers and ISS personnel were described as "very poor," and ISS demands said to be excessive, in that teachers had to first call the parent, then write a referral on the student, and finally provide written assignments for the student's ISS.

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On the plus side, teachers expressed appreciation for a new computer grading program which not only alleviated some of the paperwork burden, but also saved time. Teachers entered their grades using the software as they went along, and could then access those cumulative grades for the next progress report or report card. Teachers appreciated the convenience of the program, and praised administrators for providing class rolls with student names already entered, saying “all you’re responsible for is entering your data that you bring into it.”

**Student-related obstacles to teaching.** Frankfort teachers described the student population as quite capable, with only a small percentage extremely weak as far as natural ability. Additionally, most students had good attitudes, although said to be “extremely lazy,” with a low tolerance for frustration in trying to figure things out for themselves. Teachers also said students were grade-oriented, had a limited attention span, and that there was “a hesitancy on their part with critical thinking. You almost have to trick them into thinking.” Illustrating the push at Frankfort for quality education, and the teacher awareness that students must be actively involved in education in order to learn how to think, one teacher said that although students “want the teacher to just lay things out clearly, and then parrot that back on a test, that’s not really what we’re trying to do here.” Specific segments of the student population were described further by teachers, who said that younger students lacked a sense of responsibility for their own learning and for doing what was expected of them; and that many
at-risk students were far below grade level, with some having low ability and/or significant skill level deficiencies.

"Approximately 60-80% of juniors and seniors" at Frankfort had after-school jobs, which teachers described as a serious interference with teaching and learning. One teacher said he felt he was "in direct competition with these fast-food places, these minimum-wage places that are keeping the kids up all night." Teachers described students as reporting to class tired, with the attitude that they just had to endure the class so they could make it to work later. One teacher commented that students "know almost immediate rewards with that paycheck they're getting weekly, and here we are trying to explain to them Milton or Frost." Another voiced that employers of high school students should be made to demand a report card showing that students are doing well in school, and if not, to fire the students, since school should be the first priority at high school age.

Most teachers indicated that Frankfort professionals had very good attitudes. However, one teacher said there were a few faculty members who "either had not been trained or who had not bought into the training," and placed "a lot of blame on the student" for a lack of achievement. Further, she explained that "sometimes it's just their mannerisms or ways they deal with the students" which led to problems. Additionally, the principal mentioned that there were a few teachers who had preconceived notions about the ability of some individual students to learn. The prevailing view,
however, was that teachers were “very open to change and new ideas,” with a professional commitment to teaching all students well.

**Staff development.** Staff development was an on-going investment made with commitment by the district in which Frankfort was located. A full-time staff development coordinator was part of the regular Frankfort faculty, and time was built into the schedule for teachers to meet regularly for professional development as a group every other week. On their own time, teachers also met weekly in small groups. The district had a long-standing reputation for awareness and implementation of innovations. Aspects of on-going professional development at the school were described as workshops and in-services focusing on the latest instructional strategies (e.g., cooperative learning, reading strategies, multiple intelligence), writing projects, and testing. Teachers claimed that the training was usually carried over into teaching, planning, and classroom activities, with one teacher saying “everybody does some kind of portfolio” with students.

All interviewed teachers involved in the initial decision to change to block scheduling felt that they were well prepared before teaching in a block format. According to teachers, the school district provided teachers a wealth of staff development. Although the decision to implement the new format came at the end of the second year, the faculty took an additional year for teachers, administrators, parents, and the community to get ready, with most training geared toward adding effective instructional strategies. Several new teachers said they had no experience with block scheduling.
prior to being hired at Frankfort, but during the summer were paid for more workshops than they "cared to attend." The in-servicing was helpful, they said, since most of it was geared toward teaching strategies for productively using 90 minutes of instructional time. These new teachers also claimed a smooth transition to block scheduling.

For the prior 3 years, Frankfort professionals had been allowed to determine their own staff development needs. One teacher proudly claimed, "It's coming from us now, and not from somebody else." With staff development driven by the school improvement plan, it was goal-oriented and site-specific. At the time of the interviews, the staff was engaged in study groups which worked on one of three broad school goals. Teachers chose the goal in which they were most interested; formed groups to study the issues weekly, at a place and time convenient to the group; and also engaged in bi-weekly, whole-faculty sharing sessions. Groups were disciplinary or inter-disciplinary, depending upon who chose to work together. Teachers expressed enthusiastic commitment to professional development, and were eager to share what they were doing at Frankfort to improve teaching and learning. One teacher reported that "even in study groups, we have been trained by someone who is supposed to be the guru of study groups, and she has not seen a group of people excel as we have. I mean, we have just taken off on it."

One teacher voiced dissatisfaction with the amount of teacher time encumbered in staff development, and with the pace at which innovations
were tried, saying, "We get no break when it comes to professional development and implementing new things." To emphasize the amount of time involved, another teacher said a typical week might be, "Mondays, a faculty meeting for an hour after school; Tuesdays, group meeting," then continued, "and last year, we had prep period meetings, tutoring. I was way overwhelmed over that." Teachers claimed they could have used some of the time for planning, but nonetheless conceded that it was time well spent. A new teacher said he found meetings on teaching strategies to be particularly worthwhile, with good transfer into his classroom.

**Block scheduling.** Frankfort teachers said they were very involved in the decision to go to block scheduling, voting overwhelmingly to implement it. As one teacher explained,

> It was originally a part of the restructuring effort. We studied this for three years before we moved on it... benefits to the students just so far outweighed everything, you know, that... how could we not do this for our kids?

It was hoped that student absenteeism and dropout rates, although not bad, would improve as a result of block scheduling. Other anticipated benefits were greater innovation and variety of instructional strategies, better student focus, and improvement of student grades and standardized test performance. In fact, as shown in Table 28, absenteeism and dropout rates, and student standardized test performance did improve. One teacher said a big selling point was that a topic could be fully explored during the 90-minute period, and a teacher could "bring it to its peak and conclude,"

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with students remaining focused on the topic for the full amount of time
needed to bring it to conclusion. She explained that 50-minute periods
often necessitated stopping in the middle of a topic, with a constant next-
day scenario of, “Okay, where were we yesterday? Let’s kind of get caught
up here.” Everyone was frustrated by the constant breaks in concentration.

Several teachers said an unexpected benefit of block scheduling at
Frankfort was that the teacher attendance rate improved, largely because
the pace of block scheduling made planning for substitutes very difficult.
“Teachers hate to miss even one day, because just getting plans together is
a nightmare.” There was also concern about being sent to two- and three-
day workshops, even though the staff development was desirable, because it
was extremely difficult for teachers to leave a substitute with students for
the equivalent of six instructional days.

Interviewed teachers also unanimously said that they wanted to
continue in block scheduling. One new teacher said he had “taught in 50-
minute classes last semester, and I don’t think I could go back to them.
When we have half days here for some reason, I don’t feel like I get
anything accomplished because it just goes so quick.” Several teachers
named advantages of block scheduling for their particular subject
disciplines. A physical education teacher said enough time was now
available for skill development and for working individually with students
who had problems. “As opposed to just dressing, 55 minutes rush-rush, we
have the time we need now.” Block scheduling was said to be “good, very
good" for foreign language, since new ideas were presented, and students
got to “practice, write, speak, and engage in activities that do not have to be
interrupted because of a bell.” An English teacher called block scheduling
“a better structure for kids; they can focus, and I think it’s easier for them.”
Calling students “more active learners now,” a science teacher said she was

... extremely frustrated for years as a teacher, because I thought I was a great presenter of this material. All you have to do is just listen and you will get it. I mean, I explain this stuff so well, that’s why I’m here, I’m an explainer. Then it finally sunk in, that if they just sit there passively they’re not going to get it. With the various teaching strategies, they’re more actively involved in the learning process. But see, I used to be up here, having them read, listen to me, and frustrated, because wait a minute, I mean, I’m so good at this. What’s the problem? They were not interested. I had a high failure rate.

There were challenges presented by block scheduling which teachers expressed. The difficult pace was revisited, with teachers feeling pressured by so much to cover in only one semester. Staying organized was a big challenge for one teacher, who said she had to have a daily planner to get everything done each day. Time management of both teaching and self was named by a new teacher, who said his top priority was “not wasting a moment of preparation time, with emphasis on quality preparation.”

**Summary.** Compared to state averages for attendance and academic indicators, Frankfort and its district were successful, with the progressive school district highly supportive of the school’s instructional efforts. Teachers felt that block scheduling allowed better focus for students, and promoted active rather than passive learning. Student achievement and
participation indicators suggested that block scheduling had positively affected standardized test results, student attendance, and dropout rates; and that the school's suspension of students occurred more on an in-school than an out-of-school basis, which basically kept students in the school environment while they continued learning. Frankfort teachers credited the school administrators for having organizational ability, maintaining discipline, emphasizing academics, and supporting teachers.

With good communications within and among departments, teacher collegiality at Frankfort was encouraged. Teachers perceived colleagues at the school as dedicated professionals who were open to change. Staff development at Frankfort, driven by the school improvement plan, was goal-oriented, site-specific, and focused on improving instruction.

Teacher interviews at the second case study school followed the same guide as at Frankfort. As expected, stark differences emerged between the two Group I schools.

**Blingham High School**

**The administration.** There were three administrators at Blingham High School—a principal and two assistant principals (AP). One AP concentrated on instruction, and the other on discipline. During interviews, teachers indicated that they admired and respected the job done by the instructional AP, who was scheduled to retire at the end of the current school year. According to teachers, he was instrumental in their successful
adaptation to the new scheduling format, always a ready resource for them and willing to assist their efforts.

Unlike Frankfort, where teachers said all administrators were effective, Blingham teachers said that the AP for discipline simply was not effective, and that the principal was only slightly more so when it came to discipline. The principal was described by teachers as a nice man, "jovial and well-liked, but not a go-getter." Overall, the administrators were said to be supportive of academics, willing to allow change so long as teachers did the work; and supportive of teachers, except in some cases when it came to discipline. Teachers had to handle classroom problems, and sometimes just one disruptive student was able to prevent teaching from going on. According to one teacher, "When we write them up, students say to us, 'It's just a piece of paper,' and smile at us when they return."

Teachers described the district superintendent as supportive, and the secondary instructional supervisor as "wonderful," saying that she provided as much assistance as they needed or requested. On the other hand, the school board often was not supportive, and said by Blingham teachers to be likely to bend to political pressure. For example, at a school board meeting, when teachers approached the board about cracking down on discipline at the high school, the board was far more responsive to the general public and the parents than it was to the teachers. According to teachers, the board also did not consistently support school administrators, and its past unpredictable performance may have impacted Blingham administration's
stance on discipline. Teachers said the school board did not back school administrators, and school administrators did not back teachers. This lack of support was in direct contrast to the demonstrated district- and school-level support which Frankfort teachers enjoyed.

A core group of teachers, reported to be the leaders at Blingham, often spoke up at faculty meetings, and while much was promised by administrators, little was subsequently done to alleviate teacher concerns. At Blingham, there were department chairs and written departmental communications, just as at Frankfort. However, unlike Frankfort, there was little sequential planning within departments at Blingham, and infrequent department meetings. Blingham school administrators were not involved in instructional planning days. In fact, teachers turned in lesson plans, but questioned whether administrators actually read the plans, as illustrated by one teacher's comment:

In general, we don't get any feedback. I shouldn't be letting the cat out of the bag, but I know some people who have submitted the same three plans all year, and no one ever realized it was being done.

This laissez faire administrative style no doubt contributed to the last place ranking of Blingham among the Group I schools.

**Student discipline.** For most infractions at Blingham, a step procedure led to detention, suspension, and possibly expulsion. Unlike at Frankfort, Blingham teachers said administrators were lax with discipline, inconsistent, and not supportive of teachers in many cases. Habitual
offenders got away with the same infractions time after time, while infrequent offenders might be handled very sternly. The principal stepped in at times, but was not thought effective. Teachers felt that consequences applied by the disciplinarian, in many cases, did not deter behaviors.

There was an alternative site where students were sent for disciplinary reasons, and where most suspensions were served. The school had a security officer on campus each day, but he also spent part of the day at the middle school, alternating his hours between schools. He had been at the school for one year, according to the principal, and had been a factor in stemming the incidence of school fights. However, the principal said the most effective deterrent was that students knew and understood that those who fought would go to jail. Teachers likewise said fighting was no longer a serious problem at Blingham, with one saying, “Since we moved to block scheduling, we have had fewer fights. It's very rare now when fights occur.”

Observers noted that Blingham teachers stood at classroom doors during transitions, and that the security officer appeared several times in the halls on the day of the site visit. Administrators, coaches, and the security officer communicated via hand-held radios, especially during lunch and break time. However, unlike at Frankfort, many students were outside of classrooms during instructional times. There was little supervision of these students, who walked the grounds, talked and visited in halls, and used several outdoor public telephones during class times. The principal mentioned this problem, saying that students were allowed out of classes
without hall passes, attributing the problem to teacher inconsistency with discipline. Teachers who consistently enforced discipline, according to the principal, had no real problems with the student population. On the other hand, teachers indicated that it was obvious the school needed more work with its discipline program, since some student behaviors were not being deterred. One teacher reported more problems out on the campus than in the classrooms, which observational data supported.

Teachers said most student behaviors at Blingham were within normal range for high school students, but that isolated behaviors like student disrespect and tardiness were repeated problems. According to one teacher, the “kids are good, the structure is too loose.” Another teacher echoed this, saying standards had gradually eased during her tenure at the school. “I mean, for example, the dress code. We don’t enforce the dress code anymore. You know, we used to, but now, nobody cares, you know. It’s things like that, the expectations.”

Both principal and teachers said the low attendance rate (89%) at Blingham was “terrible,” contributing to high failure rates. One attractive selling point of 4X4 scheduling to Blingham teachers was that absenteeism would decrease. However, there was no evidence that this had happened at the school. In fact, said teachers, absenteeism rates had stayed roughly the same, yet the proportions of the problem actually increased due to the pace of 4X4 scheduling, with each day’s class equivalent to two classes in a traditional schedule. Teacher absenteeism was also higher than usual at
the school, according to the principal. Conversely, at Frankfort, student absenteeism was not problematic, and teacher absenteeism had actually improved since 4X4 scheduling was implemented.

The principal attributed tardiness and class cutting problems to the expectations of individual teachers. On the other hand, several teachers complained that there were no authentic consequences in place at Blingham for being tardy or cutting class, with one saying, "I could ask any teacher about a student I'm teaching that they taught last semester. He's the same one who was tardy for them, he's tardy for me, he's tardy for everybody." Another teacher jokingly related that a student cut his class during second block, then reported to his wife's class at third block, so obviously was not bothered about detection. Class cutting was reported as not normally a serious problem at Blingham, but several teachers said it happened more often than it should with substitute teachers. Interestingly, in discussing class cutting, the principal said teachers were inconsistent with discipline, while a teacher stressed inconsistent enforcement by administrators:

I mean, some children can go down and the law is laid down, and others can go down . . . I mean, for instance, I had a child who had nine tardies and had been sent down three times, and each time he was sent back . . . you know, a slap on the wrist, lunchtime detention, you know, whereas if some other child had been sent down with that number of tardies, they would have been shipped to the alternative school. So there's a group of them that think they do not have to abide by the rules.

Several teachers reported there was no problem in Blingham classes with verbal abuse of teachers. Indeed, observers noted good student-teacher
rapport in classes. However, the principal said sometimes student-teacher rapport was too good, because teachers who had to censure students outside of class often were met with hostility, as though students thought teachers had no authority over them outside of class.

Both the town and the school were reported to have drug problems, and a recent police raid in the community had indeed netted several current and former students. One teacher said she had never actually seen drugs, while other teachers said that although drug dealing was going on, there was less of it at school than off campus. The principal reported no real problem with drugs at school, but added that students were “pretty good at avoiding detection.”

Faculty collegiality. Responses about faculty collegiality at Blingham suggested divisiveness, with the principal and some teachers reporting good relationships, while other teachers named faculty interaction problems. The faculty was described by the principal as “a pretty cordial group” who worked well together, and had good relationships. Several teachers likewise were positive, saying that departmentally, teachers shared materials and methods, and were “supportive.” One teacher said faculty relationships were “one of the best things we’ve got going here.” On the other hand, there were faculty complaints that some teachers had low expectations, often showing movies in their classes instead of teaching, which caused hardship for other teachers: “It is a major problem for teachers who do expect work, when others do not.” Another teacher suggested that teacher relationships
had changed, reporting that in past years, large groups of cordial faculty members spent time together in the lounge, but that now, faculty members spent little time together. She attributed this to the many duties (e.g., increased discipline and attendance paperwork, telephone calls, and parent meetings) other than instruction which had become part of a teacher's job at Blingham, and which had negatively affected teacher morale.

Overall faculty attitudes were reported as "not good, but justifiably so." At the beginning of the school year, teachers asked administrators to crack down on discipline, particularly on tardies and the dress code, and to forbid students to have telephones and beepers at school. Administrators made excuses, saying there were always exceptions. In direct contrast to the stance taken by Frankfort administrators, Blingham administrators claimed they could not prevent students from having telephones or beepers at school. According to one teacher, "From that moment on, teacher attitudes have definitely been affected." To illustrate the extent of the reported problem, a teacher related an incident that occurred in one of her classes. A student had a telephone, and when it began to ring during class, she took the phone away from the student.

Then the dialogue began. The student said, 'You can't do that. It's my phone,' and I had to say, 'I can take it away when it is disrupting my class. I cannot teach my class when you are talking on the telephone.' It's exhausting, and most of the time the student does not suffer any consequences except in the classroom. And this definitely affects teacher attitudes.
In addition to less than optimum working conditions at Blingham, those interviewed said some teachers were also dissatisfied with low pay.

**Time-related obstacles to teaching.** Due to the high absenteeism rate, Blingham teachers said that making up tests was a real problem. The pace of instruction was rapid, so students needed to make up missed tests as soon as possible. Often, teachers had to use class time to give the makeups, because no other time was available. Many students did not have the means to get to school early, or to stay after school, and most tests took longer to take than the short lunch period provided. This presented a dilemma for teachers of whether to have the student use class time to make up the test and thus miss valuable instruction that was going on, or whether to have the student pay attention in class so as not to have to later catch up the instruction, in which case the makeup test had to be delayed. In either case, said teachers, there was serious interference with instruction and/or grading. Also related to the pace of 4X4 scheduling, teachers voiced concern about getting the amount of time they needed to prepare adequately for instruction which moved at such a rapid pace.

One teacher spoke about how detrimental lost instructional time (e.g., natural disasters, field trips, extracurricular functions) was in a block scheduling format, since instruction moved at roughly the equivalent of double time. The teacher explained that if a day or two was lost in a regular schedule, a teacher was able to plan and make up the time, since 180 instructional days were spread throughout the school year. However, in
a block format, when there were only 90 days available and instruction was concentrated, a lost instructional day was significant: "You're always going to have certain days that are just not good teaching days, and those days cost you a whole lot more when you're in a concentrated period of time."

Blingham teachers described "continuous" paperwork that interfered with teaching. For example, when the telephone was confiscated during class, the burden fell upon the teacher not only to document the incident, but also to give a written explanation that on the previous day, she had warned the student about having and using the phone during her class. "Paper all the time, to document everything, and then when the student goes to the office, there's just no real follow-through. This takes a whole lot of my time." Unlike at Frankfort, where teacher time was protected, Blingham teachers felt some assigned responsibilities should not be their work, infringing upon instructional and planning time. For example, each time a student in any class accumulated three absences, teachers had to first call the parents and inform them, then send letters to the parents, and finally notify the guidance office about excessive absences. In addition, faculty members often were asked to meet with parents about attendance.

Other teacher time complaints coincided with Frankfort teacher reports. Blingham teachers had to provide written assignments for students who were out of the classroom for discipline. Also, due to the pace of 4X4 scheduling, teachers noted that report cards went home every four and one-half weeks, with progress reports going home between report cards.
The frequency with which they had to average and report grades interfered with teaching, they said, taking an inordinate amount of their time. At Frankfort, teachers had been provided a computer grading program, which they said helped them with grade reporting. Blingham teachers indicated that such a program was planned for their school the next school year.

**Student-related obstacles to teaching.** Teachers said that it was not student inability, but rather, poor student work ethic, that interfered with teaching. "Teaching sometimes is like pulling teeth. Some kids never learned to really work at it. Even the 'A' students are lazy." One teacher said many students openly opposed having to learn and even to be at school, saying they were forced by the court system to attend school. Capturing and holding student attention was a significant teaching problem, with Blingham teachers saying they felt they had "really done something right on a day when students asked good questions." Since 4X4 scheduling began at Blingham, teachers said that there had not been a marked increase in student attention, and that many students continued to try to sleep in class.

Teachers described absenteeism at Blingham as "a pervasive problem about missing school that comes out of the homes." Many habitually absent students did not attempt to make up work they had missed, considering their absence the teacher's problem: "You've got to teach me what I missed." Teachers said that many students acted like "school is the least important thing they do." For example, students might check out in the office for haircuts or to pick up senior pictures. One teacher said it seemed
that irresponsible behaviors of students had become "more a teacher than a student problem," with educators having to make all the adjustments:

... to understand that students have proms, they have this, and they have that. And they ask what we are going to do to meet their needs, to bend to the occasion. It used to be you went to school first, and the other stuff fell in line. Now, it's the school's job to keep you happy and make sure you get whatever you missed.

Parental attitudes and low expectations, according to the principal, substantially interfered with teaching and learning at Blingham. Parents made excuses for students, said one teacher, and students then adopted the same attitude. Many students were just trying to get by, and even though they had ability, would not perform. The work ethic problem was not exclusive to weaker students, said teachers, but also common among good students (and their parents), whose priority was the grade, not what was learned. "If a student takes a hard class and has a C, he'll just drop it because it's going to hurt his grade point average. Not that it's going to help him in college, or the ACT, or anything." If teachers were strict, requiring that students work, the Blingham teachers said that students would just drop the class, and take an easier course to make a better grade.

Just as at Frankfort, Blingham teachers felt that student jobs substantially interfered with teaching and learning. Students who did not complete homework often would offer as an excuse, "I had to work last night until 11:00." Many of the Blingham students were reported to be working for a better car or more gasoline, and their value systems put school last.
One teacher said school was only "a very small part of their important life. Their important life is their social life and the things that they can buy."

Blingham teachers attributed a portion of the student work problem to the fact that "the education establishment has come to believe that school must entertain students," and not that students must discipline themselves to work at school, simply because it was necessary. Because a burden to keep students happy and entertained had been placed on teachers, she said, students can set the standard as to what they think is fun. For example, if students were challenged to draw conclusions or make predictions, they would in effect set limits about how far a teacher could be allowed to challenge them. At a certain point, they would decide, "Wait a minute, that's a little bit too hard, we're not going to go that far." Another teacher added that it was like "dragging the class up over the hill, and you say, 'you can do this,' and they're like, we don't want to do that, we're not going to do that." One veteran with 25 years experience said this was a group phenomenon with students today, who as a whole class, "sort of set the limits as to how far and, of course, they will screw up if you force it, so that no one in the class can get the material."

Observers noted use of school intercom as a significant interference with teaching on the day of the Blingham site visit, with interruptions occurring often during class times. There were messages or announcements for the whole school, or a call to one classroom asking that a student report to the office, or questioning whether a student had reported to class.
Observers noted that teachers seemed annoyed by the frequent class interruptions. On the day of the teacher interviews, the intercom was used repeatedly to send students to the health center for shots. Groups of students were called every 15 minutes to report to the health center. One teacher angrily said, "You're asking about teaching and learning. We're in the middle of teaching, and this is going on. This has been going on for weeks, for weeks. This is a senior exam day, and they are doing that."

Staff development. According to both principal and teachers, when block scheduling was initially being considered at Blingham, some teachers did not want to change. However, Blingham teachers visited several block scheduled schools to speak with teachers and observe classes, and teachers from those schools visited Blingham to train teachers on-site. As a result, resistance died down, and most faculty members came to believe in block scheduling and the instructional changes that had to be made. Teacher acceptance of the change was also facilitated by what the principal described as a "new youth movement" among the faculty, with the newer teachers bringing to Blingham techniques and ideas to which all teachers were receptive.

As part of the initial staff development effort, teachers from other schools worked with Blingham teachers as a large group, and then in smaller departmental groups so that trainers could share subject-specific, mostly hands-on, instructional ideas and techniques. Departmental scope-and-sequence was also addressed due to this staff development, which the
principal said was devoted "big time" to new strategies. Prior to the scheduling change, in-services orchestrated by the AP for instruction, which teachers described as "well done," concerned instructional practices, lesson planning, time management, and 4-MAT training. Since block scheduling was implemented, however, teachers said there had been no regular staff development plan at the school. Rather, staff development days were under the direction of the central office, not specific to the needs of Blingham teachers, and more of a "hit or miss" situation, with some sessions more beneficial than others. This was unlike Frankfort, where on-going staff development addressed school needs. Some teachers voiced that regular site-specific professional development was needed at Blingham.

**Block scheduling.** Teachers reported that the movement to block scheduling came from the bottom up, with a majority of teachers seeking the change because they found the seven-period schedule "a nightmare." As noted, the scheduling issue was studied by teachers and administrators for 2 years before the new format was adopted. Several teachers said that during the 2-year study period, the faculty was "excited for once."

It was hoped the change to block scheduling would decrease dropout and absenteeism rates. In fact, although the dropout rate did improve, the attendance rate did not improve, as shown in Table 28. Additionally, it was hoped that the school would gain elective curriculum offerings, and that students would be able to repeat courses during the regular school year instead of at summer school. "For some reason, our superintendent was
truly opposed to summer school. The 4X4 gave more children an
tility to reschedule courses which they failed," and thus a better
chance to graduate with their class. Administrators and faculty also hoped
to see better grades and fewer discipline problems with the change to 4X4
scheduling. Teachers said that both grades and standardized test scores
had improved, with all the current year seniors passing the exit exam; data
in Table 28 supported slight improvement in standardized test performance.
Also, teachers said fighting incidences were reduced at the school since the
scheduling change. This could explain the reduced rate for out-of-school
suspensions and/or expulsions at the school, as shown by data in Table 28.

As asked whether they wanted to go back to traditional scheduling,
teachers were unanimously opposed. One teacher described herself as
initially very negative, because she doubted she would be able to cover all of
her course material and to teach for 90 minutes with no break, but added,
"Now, I wouldn't switch back to traditional scheduling for anything."

Teachers noted advantages of block scheduling at Blingham. Science
teachers said they were able to offer more hands-on experiments, because
the 90-minute periods allowed the continuity of taking out all materials,
actually doing the experiment, and putting away the materials. A math
teacher said graphing calculators were a time-consuming but good hands-on
addition to the curriculum which helped students to better grasp abstract
concepts. Most importantly, teachers said that they became believers that
maybe good things could happen at Blingham. Involving the whole faculty
in studying and implementing block scheduling had helped to motivate teachers to change instructional strategies, for the better of the school.

**Summary.** Compared to state averages for attendance and academic indicators, Blingham was below average. Student achievement indicators suggested a minor positive effect academically since 4X4 scheduling began. Although student dropout rate improved, attendance worsened. Teachers expressed frustration with laissez-faire administration, especially regarding discipline, and student participation indicators suggested a less than aggressive discipline program in place at the school. Teachers also felt they had to assume responsibilities which should not be their work, and complained about nonprofessional attitudes and low expectations of some faculty members. Departmental connections were tenuous, with faculty relationships as described by teachers more cordial than collegial.

Staff development occurred on two professional development days each year, orchestrated by district personnel, with few, if any, site-specific staff development opportunities for teachers. Teachers said block scheduling brought to the school new instructional strategies, with more hands-on activities, and more time for added continuity in exploring topics. Although grades and standardized testing results improved with block scheduling, attendance was an ongoing concern at the school.

**Cross-Case Analysis and Discussion**

Based upon data collection at each site, Frankfort High School and Blingham High School were compared on the dimensions of contrast that
emerged in interviews. Phase I frequency data were used in the cross-case analysis to augment Phase II archival, interview, and observational data. In addition to school district characteristics, the schools were compared on the following dimensions: leadership; student discipline; faculty collegiality; obstacles to teaching; professional empowerment; and academic press.

The School Districts

Frankfort High School and Blingham High School were dissimilar in many aspects, as illustrated in Table 29. Economic differences led to striking inequities in the two districts. Known for stability and success, the well supported school district in which Frankfort was located enjoyed an enviable position regarding personnel recruitment. A good district salary scale, combined with a location near a densely populated area, allowed selection from among a pool of qualified applicants for available positions. Thus, only the applicants who best fit district philosophy were hired.

At Frankfort, physical and instructional resources were regularly enhanced, and the per pupil expenditure level was high. Finances enabled the district to maintain visionary leadership, according to teachers, which tended to day-to-day management as well as long-range planning that kept the district vibrant and progressive. New construction and renovations located classrooms and workrooms within instructional disciplines, which in turn facilitated departmental planning and communications; and abundant staff development opportunities maximized instructional expertise. School board members were highly supportive of school personnel.
Table 29  Dimensions of Contrast Between Frankfort and Blingham High Schools

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<thead>
<tr>
<th>Dimension of Contrast</th>
<th>Frankfort High School</th>
<th>Blingham High School</th>
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<tbody>
<tr>
<td>School district</td>
<td>Ample resources;</td>
<td>Limited resources;</td>
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<td></td>
<td>selective personnel</td>
<td>recruitment problems;</td>
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<td></td>
<td>recruitment; support</td>
<td>inconsistent support</td>
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<td>of school personnel</td>
<td>of school personnel</td>
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<td>School leadership</td>
<td>Shared decision-making;</td>
<td>Inconsistent support</td>
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<td></td>
<td>proactive nature;</td>
<td>of teachers; laissez-</td>
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<td></td>
<td>focus on instruction;</td>
<td>faire style, reactive</td>
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<td></td>
<td>high expectations</td>
<td>in nature; inconsistent expectations</td>
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<tr>
<td>Student discipline</td>
<td>Student control viewed as necessary to school goal of instructional effectiveness</td>
<td>Inconsistent application of consequences; conflict between administrators and teachers; high absenteeism</td>
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<tr>
<td>Faculty collegiality</td>
<td>Encouraged by depart­ mental structure; good teacher morale; regular staff development; supportive leadership</td>
<td>Hampered by weak departmental structure; low teacher morale; infrequent staff development; lack of administrative support</td>
</tr>
<tr>
<td>Obstacles to teaching</td>
<td>Systematically eliminated through innovative solutions</td>
<td>Discipline; frequent class interruptions; paperwork; parent contact duties</td>
</tr>
<tr>
<td>Professional emphasis</td>
<td>Frequent goal-oriented staff development; well organized departmental structure</td>
<td>Lack of staff development; poor communications; weak departmental structure; laissez-faire leadership</td>
</tr>
<tr>
<td>Academic press</td>
<td>High expectations for teaching and learning; entire school focused on instruction</td>
<td>Frequent sacrifice of instructional time; lack of emphasis on instruction; too many responsibilities other than teaching</td>
</tr>
</tbody>
</table>
The Blingham district was poorly supported relative to that of Frankfort, with the district at a personnel recruitment disadvantage. A low-average to average salary scale made it difficult to attract educators, especially since the district was located among wealthier districts which offered highly competitive salaries. Furthermore, the rural location of the district limited the supply of qualified applicants. Other than local faculty members, the district had to hire whomever was available for each open position, which often meant hiring untrained and uncertified teachers.

District funding allowed a per pupil expenditure level only slightly above state average. While Frankfort's physical and instructional resources were enhanced, Blingham struggled to maintain the status quo. There were few regular improvements of any kind at Blingham. In addition, the school board was often not supportive of school personnel.

The Schools

With well-defined and executed roles, Frankfort administrators supported teachers, consistently handled discipline, and were respected by teachers and staff. High expectations for instruction and achievement were in place at the school. Conversely, teachers criticized the laissez-faire leadership of Blingham administrators. Most complaints focused on administrative inconsistency in handling discipline. Although the Blingham principal reported above average expectations for teachers and students, the frequent sacrifice of instructional time to student misbehavior and interruptions gave a different message.
While leadership at Frankfort was visionary, directed toward future improvement, there was a management approach to running the school at Blingham, with administrators reacting as issues surfaced. While Frankfort had a highly structured approach to team leadership in which all players had a voice, the Blingham approach to leadership had each person looking to the next to see who would step forward. A small group of teachers attempted to lead, but often were not supported by administrators.

District resource inequities were apparent in the physical plants. Carefully planned renovations and construction at Frankfort complemented the instructional focus, while Blingham facilities needed maintenance. The disjointed layout made it extremely difficult to supervise students, and failed to disguise the attempt to enlarge an existing facility for the least possible capital outlay rather than for optimal effectiveness.

Discipline program elements illustrated differences in administrative philosophy at the two schools. At Frankfort, acceptable student behavior was viewed as imperative to attaining instructional effectiveness. In the faculty survey, teachers indicated there were no serious student discipline problems at Frankfort. A highly centralized structure handled discipline, with extra personnel hired for duty, attendance, and in-school suspensions. Since teachers did not bear the major burden for discipline, they were free to concentrate on instruction. Again, the emphasis was proactive, with a well-defined plan which anticipated each eventuality. This resulted in minimal student misbehaviors, with students focused on instruction.
There was a more reactive stance at Blingham, with administrative inconsistency in handling discipline. Survey and interview data indicated that habitual student absenteeism and tardiness undermined instructional efforts. In general, the central structure often failed to protect instructional time or support teachers, while enabling student misbehavior. In fact, survey results showed overall that student misbehaviors impeded teaching, and teachers felt many students were irresponsible about learning. Furthermore, discipline paperwork and parent contact burdens fell heavily upon teachers, who said this drain on their time interfered with teaching. Perhaps the best analogy concerns student telephones and beepers, which were not allowed at Frankfort, while not restricted at Blingham.

Academic press was another area in which the schools differed greatly. Instruction was the focus of Frankfort administrators, teachers, and students, with instructional time protected, and no interruptions allowed. Other than early morning home room announcements, written communiques were regularly distributed and publicly posted for student and faculty to check on announcements. On-going staff development was targeted to site-specific needs, and approached through faculty study groups as well as regular in-servicing. Conversely, Blingham instructional time was not protected, with intercom interruptions, disciplinary incidents, and dismissals for non-instructional activities. Infrequent staff development planned at the district level was not targeted to specific school needs.
Teachers at Frankfort were upbeat and energized by professional activities. The departmental structure encouraged collegiality, with a workroom in the immediate physical area of each discipline. Department heads regularly attended team leadership meetings, and disseminated all information to teachers at regularly scheduled departmental meetings. Constant communications and contact among teachers were encouraged by the departmental structure, while frequent staff development allowed teachers meaningful association with colleagues in other disciplines. Morale was further bolstered by strong, supportive leadership; good student attitudes; good pay; excellent teaching conditions; and freedom from many non-instructional chores such as yard and hall duty, attendance paperwork, and follow-up on discipline. On the survey, Frankfort teachers consistently agreed that teacher collegiality was strong, and had exceptionally high regard for the supportive role of the department chair toward staff.

In contrast, Blingham teachers complained about administrators, students, and teaching conditions, with administrative inaction and poor communications presenting barriers at the school. Often, teachers had no forewarning of school activities or other events, which limited instructional effectiveness. In addition, teachers often got no feedback on discipline referrals unless they pressed for the information in the office. Although Blingham teacher relationships appeared good, with teachers saying that they shared ideas and materials, it is reasonable to expect that occasions for collegiality were limited, given the lack of structure present in the everyday
school operation. Also limited at the school were professional activities, with no regular staff development, and few departmental meetings. Morale was low, according to teachers, due to ineffective leadership; inconsistent handling of disciplinary incidents; pervasive student absenteeism and tardiness; poor student attitudes toward learning; poor teaching conditions; and lack of support from both administrators and the school board.

Discussion

Disparity in district financial resources had far-reaching effects, and was a substantial contributor to the differences between Frankfort and Blingham. Selective personnel recruitment allowed Frankfort to choose and retain the best qualified applicants who most closely fit district philosophy, and to maintain vibrant leadership. This in turn enhanced instructional efforts. By hiring additional personnel, teacher time was protected from yard duty, attendance paperwork, and discipline follow-up.

It would be easy, but inaccurate, to attribute the differences in the two schools exclusively to the level of funding. Simply having the resources does not assure success. One must also know what to do with the resources. The Frankfort district used its resources wisely, focusing on the central mission of instructional effectiveness, and systematically eliminating barriers which surfaced. Using a team leadership approach, site-specific innovative strategies were determined, and then implemented.

In addition to staff positions created to protect teacher time, there was aggressive staff development at Frankfort to assure that teachers were
current on classroom strategies and research. New teachers trained in
advance could immediately assume a productive instructional role in 90-
minute classes. Department heads assumed formative supervision roles,
which enhanced teacher communications, professionalism, and collegiality.
Administrative roles supported instruction by protecting instructional time,
controlling student behavior, centrally managing staff development efforts,
and communicating well with teachers and students.

Staff development as a proactive strategy not only effects, but also
sustains, change. According to teachers, initial staff development at both
schools adequately prepared instructors to teach in 90-minute classes; the
major discrepancy between the two schools occurred after block scheduling
was adopted. Staff development at Frankfort increased, while at Blingham
staff development waned. New teachers at Frankfort were prepared in
advance to assume their roles, but new teachers at Blingham had to learn
on the job, with voluntary assistance from veterans. Frankfort teacher
collegiality was boosted by departmental structure and staff development,
while the Blingham central structure did not encourage collegiality.

Finally, the effect of block scheduling on discipline cannot be judged
on its own merits. Administrative philosophy regarding student control is a
key factor in how well student behaviors are managed. It is reasonable to
think that funding disparity played a role in leadership within these two
schools. A good salary scale, in combination with funding for improvements
and a reputation for progressiveness, would attract a faculty of enterprising
administrators and teachers, who were also aligned with the mission of the school and district. With such a faculty in place, the shared approach at Frankfort resulted in innovative leadership with a focused mission.

Less favorable financial resources, however, cannot excuse the laissez-faire leadership approach at Blingham. Administrators could have better supported teacher efforts with discipline, and the school board could have better supported both teachers and administrators, especially since teachers took the initiative to request a more proactive stance on discipline. The success of Frankfort resulted from a concerted effort of school board, administrators, and teachers to improve instruction. Differences between these two schools were due not only to the disparity in available financial resources, but also to very basic differences in administrative philosophy.

Although leadership as a factor did not emerge in the quantitative analysis, its importance emerged through Phase II interviews as a major influence for differences which existed between the two schools. Frankfort leadership defined the central instructional focus, communicating what was valued for everyone in the school environment. According to Hord and Huling-Austin (1986), after an innovation has been initiated, the principal is a key player in the on-going change process, with a support function that is critical to success. In fact, Hall (1988) believes the single most important variable in successful change efforts is leadership style of the principal, with "initiators" the most successful. The hallmark of the "initiator" principal is the ability to create a team that can focus and can function collegially to
bring an energized, learning-oriented, and empowered quality to a school. Such was the pervasive environmental quality at Frankfort.

Chapter Summary

This chapter provided in-depth case studies of two Louisiana high schools, identified through Phase I quantitative results. From Group I (block scheduled for 3 or more years), the school with most positive teacher reports of climate and the school with least positive teacher reports of climate were selected. By probing deeply into contextual aspects of these schools, Phase II qualitative data collection sought to explain climate differences which existed within the group.

In each case study, the school context was explored using background information to describe the school and its district. Teacher interview data explored categories of administration, student discipline, faculty collegiality, obstacles to teaching, staff development, and block scheduling. A cross-case analysis compared the schools, using the dimensions of greatest contrast, namely, school district, leadership, student discipline, faculty collegiality, obstacles to teaching, professional emphasis, and academic press.

What most differentiated the two schools was the disparity in district financial resources and in administrative philosophy, both of which had far-reaching effects in the individual schools. Leadership emerged as a factor through Phase II interviews. Areas explored as being most affected by district resource disparity were personnel recruitment, leadership, staff development, student discipline, and teacher interactions.
CHAPTER SIX: CONCLUSIONS AND IMPLICATIONS

Overview of the Study

Since the middle of the twentieth century, education reforms increasingly have been attempted in America, spurred by nationwide mandates for system-wide change (Carnegie Task Force, 1986). The broad-based “restructuring” movement, a name used for the second wave of educational reform, took on an urgency in the mid-1980s (Murphy, 1991), requiring a reconceptualization of basic teaching conditions, the learning process, and the ways that schools operated. Imaginative thinkers proposed that teachers take on new roles as mentors and coaches (Sizer, 1986), and that multiple innovations be integrated into practice (Murphy, 1991).

In 1991, Congress appointed the National Commission on Time and Learning to study American education. The Commission noted that over the period of one generation, life in America had changed profoundly. Technology brought rapid changes in information delivery, while at the same time, the public school clientele increasingly came from broken homes, were non-English-speaking, had working mothers, and were minority children from high-crime areas. School was a place where time well-used could indeed impact society (Prisoners of Time, 1994).

The Commission focused on high expectations for learning, aligned with protected instructional time. A major conclusion was that high school scheduling was too rigid. For 100 years, American schools had used a schedule which structured learning around time. What was needed,
according to the Commission, was for learning to become the focus, with
time structured around learning (Prisoners of Time, 1994).

As a tool used to organize curriculum and its delivery, and to control
student interactions, the high school schedule was viewed as a powerful
force which affected the entire high school operation. More flexible
scheduling configurations, one of which was known as block scheduling,
were proposed for integration into practice. Researchers claimed that the
single most popular block scheduling format, 4X4 block scheduling,
particularly supported positive changes in school climate and in academics
(Kramer, 1997a). Additionally, 4X4 scheduling was lauded as a cost-
effective and easily implemented initiative (Canady & Rettig, 1995a).

Block scheduling represents an understudied area in educational
literature. There is little empirical evidence regarding the effects of block
scheduling in successive years at the high school level, despite the benefits
claimed in educational literature and the increasing use of block scheduling
in schools. Among the many changes which the literature alleged would
accompany the move to block scheduling were improvements in attendance
(Baylis, 1994; Usiskin, 1995), student grades (Carroll, 1990), standardized
testing performance (Averett, 1994), and discipline (Hackmann, 1995);
removal of obstacles to teaching and learning (Cannady & Rettig, 1993,
1995a); increased use of variety in instructional strategies (Kramer, 1996;
Cawelti, 1994); and improved teacher collegiality (Carroll, 1990).
The present study examined the effects of block scheduling on high school climate. In past studies of school climate, researchers used a myriad of variables, such as school size, age, and decor; student achievement, attendance, and behavior; student body gender, socioeconomic composition and ethnicity; teacher salaries, decision-making participation, and morale; and even emphasis placed on academics by school staff, expectations for student achievement, and norms shared by students (McDill & Rigsby, 1973; Rutter et al., 1979). There is no doubt that many variables interact and can be combined to study climate, but according to Anderson (1982), to optimize studies on school climate, researchers should carefully select relevant variables; control for variables normally correlated with school context, such as SES and school size; and use outliers, matching, and in-depth observations.

The fact that administrators, teachers, students, and schools vary widely makes it extremely difficult to standardize and institutionalize educational reforms, and to measure effects of reform efforts. Nonetheless, this study attempted to determine whether the restructuring tool known as 4X4 block scheduling, purported to affect school climate positively, was having the expected effects. The study used mixed methodologies and multiple data sources. To represent climate, there were three outcome variables--student discipline, faculty collegiality, and obstacles to teaching (Taylor & Tashakkori, 1995), each of which had been linked to the block scheduling framework.
Of the 1,320 questionnaires which were distributed in this study, 883 were returned, for a response rate of 66.9%. Since 33% of teachers in the schools did not return questionnaires, there is the possibility of a volunteer effect, or the chance that individuals who agreed to participate were intrinsically different from those who did not (Gall et al., 1996). One indication that this is not so, for the most part, is that teacher interview data substantiated survey data.

Some results of the present study were important, in light of claims in the block scheduling literature. Furthermore, the in-depth qualitative investigations of this study provided valuable insight into both high schools and block scheduling. While some results were not significant, this may be due to the many confounding variables present in the natural environment of schools.

Discussion and Implications

Main Findings

The present study resulted in five main findings. First, and most importantly, there was a finding of significant differences among groups regarding time management elements associated with teaching. Unlike teachers in the traditionally scheduled schools, teachers in block scheduled schools perceived that they were able to identify student strengths and weaknesses within the first month of school, to address individual student differences within the framework of a class period, and to complete the work they wanted to do with students in class periods. Additionally, while
teachers in block scheduled schools were neutral in assessing whether their class preparation needs could be handled within the time allowed, teachers in traditionally scheduled schools unequivocally indicated that the time allowed was inadequate, which indicates that preparation needs are better met in a block scheduling format. Since the subscale items were based on time management claims in block scheduling literature, it is important that these time-related items clearly differentiated between block scheduled groups (I and II) and the traditionally scheduled group (III), providing empirical evidence for time allocation claims in block scheduling literature, and showing that block scheduling better provides the time needed to support elements of instruction.

Furthermore, post hoc tests following a significant ANOVA on Time-related Obstacles to Teaching indicated not only that all groups differed, but also that the groups differed in the hypothesized direction, with Group I (block scheduled for 3 or more years) having the highest means, Group III (traditionally scheduled) having the lowest means, and Group II (block scheduled for 2 years) having means that were in between. This provides some validation for claims that the point at which meaningful change can occur is approximately the 3-year mark (Fullan, 1991; Canady & Rettig, 1995a). The change to block scheduling was simply more institutionalized in the Group I schools than in the Group II schools, where block scheduling had been in place for only 2 years.
Second, teacher perceptions of overall climate, as measured by a combination of all four factors, differentiated the three groups of schools. However, it was necessary to aggregate teacher responses to school level because climate is a school-level variable, and therefore the weak statistical power due to small degrees of freedom is a limitation to this study.

The most positive teacher perceptions of overall climate were in Group I schools (block scheduled for 3 or more years), and the least positive teacher perceptions of overall climate were in Group III schools (traditionally scheduled), the hypothesized direction in this study. It is important to remember that the main group effect was the focus of this research. Since either scheduling type or number of years in block scheduling was unique to each group of schools, the schools were nested within groups, and the research design limited identifying effects as being school effects or school and teacher interaction effects.

Third, despite literature claims to the contrary, there were no significant differences in the present study between block scheduled schools and traditionally scheduled schools regarding the factors Student Discipline, Faculty Collegiality, and Student-related Obstacles to Teaching. Qualitative findings reinforced the quantitative results, showing differences among groups for time-related items, but that groups were more alike than different regarding Student Discipline, Faculty Collegiality, and Student-related Obstacles to Teaching. Further discussion regarding these factors is provided in the section describing ancillary findings.
Fourth, leadership emerged through interviews as a significant factor in shaping high school climate. At the positive outlier case study school, strong school leadership clearly communicated what was valued at the school through a well-articulated focus on instruction, good teaching conditions, and consistent protection of instructional time. In this school, the focus was on instruction, leaders played a key role in controlling student behaviors, and absenteeism and tardiness were not problematic when combined with strong expectations for learning. Furthermore, a strong emphasis on continuing, goal-oriented professional development provided the initial training needed to change to a new scheduling format, and the support needed to sustain the change over time. Clearly, leadership impacted the entire school environment and provided conditions under which block scheduling could succeed.

Finally, while some results in the present study pointed to differences between groups of schools, other findings pointed to differences within groups of schools. This occurred despite the attempt in this study to match the groups on the context variables of SES, school size, and community type, and the schools within groups on type of scheduling or number of years in block scheduling. This finding provides further evidence to substantiate the notion that school contexts are indeed unique.

Ancillary findings are thoroughly discussed in the next section. These conclusions primarily stemmed from the in-depth qualitative investigations conducted in the present study.
Ancillary Findings

When statistically tested, student discipline differences across groups were insignificant. On the whole, groups were similar, with most student discipline problems considered minor by teachers and administrators. Absenteeism surfaced as the greatest concern across groups, perceived to be a moderate problem. To a lesser degree, student tardiness was also a concern, indicated to be a minor to moderate problem.

Claims in block scheduling literature pointed to improved student discipline with the onset of block scheduling, mostly due to fewer transitions during the school day, and thus fewer occasions for student misbehavior (Reid, 1996). In fact, teachers and administrators in all groups reported fewer fights, but did not attribute this positive turn to block scheduling. Instead, the improvement was associated with a zero tolerance policy for fighting, which made students and parents dealing with law enforcement agencies when a fight occurred at school. Furthermore, the fine levied in each instance was an effective deterrent, prompting parents to influence students to peacefully coexist at school. In the present study, block scheduling did not appear to greatly impact student discipline. Differences between groups were minimal. What did appear to make a difference in student discipline between schools was school leadership. Through school policies and consistent teacher support, administrators were could either allow or prevent student misbehaviors from interfering with teaching and learning.
As voiced by teachers and administrators, absenteeism was of relatively less concern in the 3-year block scheduled group, and of relatively more concern in the traditionally scheduled group, even though differences did not distinguish among the groups statistically. To some extent, this may suggest support for literature claims that students appear to attend school more regularly in block scheduled schools, since the quicker pace of instruction makes it harder for students to recover from absences (Averett, 1994; Usiskin, 1995). However, in case study schools, absenteeism and tardiness appeared to be linked less to block scheduling than to expectations for learning, and to continual efforts to correct student misbehaviors.

Group differences in faculty collegiality were not found to be statistically significant. Across groups, teachers gave mostly positive messages about faculty collegiality. However, survey means were consistently more positive for block scheduled groups than the traditionally scheduled group. To some extent, this may speak to literature claims that block scheduling encourages teacher sharing and professionalism, due to concern with encumbering longer instructional periods (Canady & Rettig, 1995a; Carroll, 1990). In the present study, there may have been confusion among teachers and administrators in responding to interview probes about collegiality. Some responses seemed to describe more cordial than collegial relationships, indicating that teacher relationships in some schools were more personal than professional. However, the interviewer attempted to correct misunderstandings at the time of the interviews.
Faculty collegiality appeared to be linked to many climate elements in sampled schools, with case studies pointing to a connection between teacher collegiality, and both the amount of meaningful communication and the regularity and quality of staff development. For example, in one case study school, opportunities for professional dialogue stemmed from shared leadership, a strong departmental structure, regular department meetings, on-going staff development, and professional activities promoted at school. Furthermore, teacher morale and teacher collegiality seemed to have a parallel relationship, with stronger professional ties on the job more common among happier and more involved teachers, and isolation on the job more common among unhappy teachers.

Group differences on Student-related Obstacles to Teaching were not found to be statistically significant, and interview responses supported the finding. An encouraging finding across groups, drawn from both survey and interview data, was that students did indeed have the ability to do well at school. However, there were also concerns reported across the groups.

One reported interference with teaching in all groups was excessive paperwork required for discipline referrals, special education students, attendance and tardy records, and grade and/or progress reports. Teachers were overburdened, at times feeling unable to concentrate fully on teaching because of accumulated paperwork. Some administrators acknowledged that paperwork was excessive for all teachers, and had taken action to reduce this interference with instruction. For example, in some schools,
centralized discipline and attendance practices allowed teachers to spend most of their time on instruction and planning.

Grade reporting was more an impediment to teaching in block-scheduled groups, due to the pace of 90-day courses which necessitated grade reports every two to three weeks during the school year. In some schools, however, recognition of the problem had prompted the use of a grade-keeping computer program which simplified the process for teachers. In the more progressive schools, such as the positive outlier school, a proactive approach systematically eliminated obstacles to teaching. However, it was only at schools where instructional focus was maintained that these obstacles were regularly attacked with innovative solutions.

By far the most pervasive student-related obstacles to teaching across all groups in the present study were student apathy and attitudes, including student work ethic. Although the magnitude of the reported problem was alarming, the fact that it was proportionally less problematic in block scheduled schools may speak to literature claims that block scheduling reduces student apathy. Researchers say student apathy is lessened by block scheduling because the longer time format of class periods affords more instructional diversity, which better captures student interest (Canady and Rettig, 1995a); and because student stress is diminished due to fewer subjects, teachers, and classes at a time (Carroll, 1990) and fewer demands made on students (Stockard & Mayberry, 1992). In short, the literature argued that block scheduling provided a more positive and
meaningful connection with education for students, and thus lessened student apathy.

Student apathy and student absenteeism appeared to have a parallel relationship, with a lower incidence of both in block scheduled schools. What effect block scheduling had on either problem is unknown. In the present study, apathy and absenteeism problems existed simultaneously in schools, in that students who had a negative attitude toward school also seemed to miss more school.

Two main reasons for the student apathy and work ethic problem were advanced in interviews. One of these was parent or "home apathy," which administrators described as negative attitudes toward education, which students seemed to adopt. Parent apathy was given as a prime reason for student absenteeism. Again, the reported problem was proportionately much greater in traditionally scheduled than block scheduled groups. The second reason, an often articulated obstacle to teaching and learning, was that many students held minimum-wage jobs outside of school. In many cases, this negatively affected student work ethic at school, with students focused more on earning money than on learning. Often, students chose to work for the "things" they could buy, and although the jobs competed with school, parents tended to support student decisions. Sampled teachers and administrators heatedly spoke of outside student jobs as a serious obstacle to teaching and learning in high schools, and felt that parents and students did not value education as a long-term investment.
This study pointed to high levels of "administrative presence," or visibility on campus, in schools where more experienced administrators were at the helm. This may have been due to a desire to project a sense of vigilance at their schools, or to establish a leadership role. In either case, the administrative presence on campus was noticeable to observers, and seemed to positively affect faculty and students.

Availability of resources in schools was found to affect substantially the extent to which an innovation can be assisted. Both district- and school-level support must be evidenced, not only financially but also in terms of commitment to shared goals. In the positive outlier case study school, adequate financial support and commitment undergirded the successful change to block scheduling, in three important ways. First, a good pay scale enabled selective recruitment of both administrative and instructional staff, who were aligned with district educational philosophy. This shared philosophy bound school and district personnel around a common mission. Shared leadership at the school gave a collective voice to the proactive plan which systematically eliminated barriers that surfaced.

Second, adequate resources enabled good teaching conditions, in terms of physical environment and resources, instructional focus, and elimination of such obstacles to teaching as disciplinary concerns, excessive paperwork, and interruptions of instructional time. In the case study school, additional staff were hired to relieve teachers of such mundane duties as attendance paperwork and yard duty.
Finally, adequate resources provided a full-time coordinator for ongoing, focused professional development. Staff development appears to be important in successfully sustaining a change to block scheduling, in terms of providing professional interaction, keeping staff current on the latest techniques and strategies, and properly preparing teachers new to block scheduling to immediately assume a productive instructional role. After a period of study and hard work to undertake a change, and after an innovation is actually implemented, the work is not over. Rather, the work is just beginning. There must be on-going professional development to sustain the change effectively over time.

It is a significant finding that block scheduling alone does not appear to be a definitive answer in achieving educational excellence. As in most reform endeavors, many factors must come together to achieve the desired result. To realize its full potential for school improvement, block scheduling must be sustained over time in an environment which promotes excellence and supports growth. The conditions which seem to best foster its potential are strong school leadership, a focus on instructional excellence as a shared mission, opportunities for continual professional development, good communications which encourage faculty collegiality, and the systematic elimination of barriers which work to prevent goal attainment.

Recommendations

This study provides empirical evidence which expands the literature base on block scheduling, an understudied area in education. The results of
this study also have direct implications for practice, adding to what is known about block scheduling and high schools, both of which have been infrequently studied. Findings indicated that block scheduling did in fact provide additional time to support elements of instruction, and also pointed to improvements in student discipline and faculty collegiality. Additionally, administrators and teachers identified obstacles to teaching which were present in their school environments. As reported in the qualitative findings, some of the more proactive schools regularly eliminated obstacles to teaching, using innovative solutions which can inform practice.

Three major recommendations are offered for further study, based on the present research. First, further research should be undertaken on block scheduling and leadership in secondary schools. Additional studies are needed to build a knowledge base regarding conditions which support the implementation and on-going success of block scheduling. Leadership appeared to be the factor which teachers most associated with the success of block scheduling in the sampled schools. Useful study might compare the effects of block scheduling in conventionally led schools, and in schools where leadership is shared, using a sample of schools rather than a case study design.

Second, on-going staff development was found to be of great importance in implementing and sustaining block scheduling as a viable innovation in secondary schools. Further study should be undertaken regarding the types of professional development activities which most
empower teachers in their instructional role and/or which most affect the success of block scheduling in secondary schools. The regularity of staff development should also be investigated, along with faculty collegiality in the schools.

Third, the effects of block scheduling on student discipline should be investigated in greater depth than was undertaken in this study. Since certain aspects of student discipline can become obstacles to teaching in secondary schools, instruction and student achievement in a block scheduling format are additional areas for investigation, in light of student discipline in schools.

In *Prisoners of Time* (1994), the National Education Commission on Time and Learning noted, "... as different helmsmen have seized the wheel, the ship of education reform has gone round in circles. If we have learned anything from these efforts, it is that no single solution exists for the problems of American schools" (p. 29). So it is with block scheduling. In American high schools, the main focus must remain on increased student learning. To the extent that block scheduling can bolster that goal, it has the potential for being one of the many factors that can come together to effect desired changes in high schools.
REFERENCES


TEACHER SURVEY.

Thank you for helping with this research project. Please return this survey to the main office TODAY, if possible, or at least within the next THREE DAYS. USE A #2 PENCIL FOR ALL RESPONSES.

PART I: Indicate the extent to which you agree or disagree with each item below. Mark one response per item.

1. I can count on most staff members to help out anywhere, anytime, even though it may not be part of their official assignment.

2. Most of my departmental colleagues share my beliefs and values about the central mission of the school.

3. The level of student misbehavior (e.g., noise, horseplay, or fighting in the halls, cafeteria, or student lounge) in this school interferes with my teaching.

4. Many of the students I teach are not capable of learning the material I am supposed to teach them.

5. The amount of student tardiness and class cutting in this school interferes with my teaching.

6. Routine duties and paperwork interfere with my job of teaching.

7. The department chair or curricular area coordinator's behavior toward the staff is supportive and encouraging.

8. Teachers in this school are continually learning and seeking new ideas.

9. There is a great deal of cooperative effort among staff members.

10. There is broad agreement among the entire school faculty about the central mission of the school.

11. This school seems like a big family; everyone is so close and cordial.

12. The attitudes and habits students bring to my class greatly reduce their chances for academic success.

13. The level of student drug use in this school interferes with my teaching.

14. I have sufficient time in each class period to give most of the students I teach the individual attention they need.

15. Most of the class preparation I need to do can be completed during my planning period.

16. I get to know the strengths and weaknesses of most of the students I teach within the first month of school.

17. There is enough time to do all the things I want to do with my students in each class period.

PART II: How often do you do these things with your students?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Almost Never</th>
<th>1-2 Times Per Week</th>
<th>3-4 Times Per Week</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Begin homework assignment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Lecture (whole group).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Open discussion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Project and/or lab work.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>22. Role playing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Small group work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Items 18-23 were included on the survey form for use by another researcher, and were not used for the present study.
TEACHER SURVEY (continued)

24. My school uses this scheduling format

25. I like the scheduling format used at my school

PART III:
Indicate degree to which item below
is a problem with students at your school
(one response per item).

27. Class cutting.
28. Drug and/or alcohol use.
29. Gang activities.
30. Physical conflicts among students.
31. Possession of weapons.
32. Robbery or theft.
33. Tardiness.
34. Vandalism.
35. Verbal abuse of teachers.

PART IV: Teacher School Profile Section.

36. Your ethnicity:

37. Your gender:

38. What subject do you primarily teach?

39. Are you certified for all subjects you teach?

40. How many total years teaching experience do you have?

41. How many years have you been at this school?

42. What is your highest degree?
PRINCIPAL INTERVIEW PROTOCOL

Date ____________________

Principal's Name: ________________________ School Name: ________________________

No. regular professional teaching staff ____
Of Assistant Principals _____

How long has this administrator been in education? _____ years
Total years Principal/Assistant Principal? ________ years
Years Principal/Asst. Prin. at this school? ______ years
Estimated annual teacher turnover rate at this school. ______% 

1. Describe the student population at this school in terms of race, SES, ability.

2. Describe discipline process at this school. (School-wide policy? Implemented consistently? Procedures for handling offenses?)

3. Describe student behavior (absenteeism, tardiness, class-cutting; noise, horseplay, fighting in/on halls, cafeteria, classrooms, grounds; verbal abuse of professional staff)

4. Describe impediments to learning. (Student attitudes, abilities, absences, class cutting, tardiness, drug/alcohol use; teacher attitudes, paperwork, or excessive administrative duties)

5. Describe teacher attitudes toward new ideas, change, professional improvement.

6. Describe teacher relationships at this school. (Collegiality, cooperation, collaboration, departmental cohesiveness)

7. Name the school's three main strengths, three main weaknesses.
SCHOOL OBSERVATION CHECKLIST

Date________________

School:_________________________ Observer:_____________________

Your general impression of:

1. *Teacher attitudes & perceptions of school, students, principal.*
   (Comments, statements, conversations w/other faculty members; expectations for student learning)

2. *Principal/asst. principal's presence in hallways, on school grounds during day, classrooms; his/her rapport with students, faculty.*

3. *Faculty vigilance* (duty stations before school, in hallways, cafeteria, etc.; attention to student class behaviors). *Security officers or devices, student ID tags, locked gates/fences, security regimens?*

4. *Student attention to school rules and regulations; response to bells to report to classes; behaviors in hallways (any during classes?), cafeteria, on grounds, and other school areas.*

5. *Student classroom behavior, and of faculty's ability to teach free of impediments* (e.g., *student* misbehavior, tardies, attitudes, verbal abuse of teachers, drugs/alcohol; *teacher* attitudes, routine duties, paperwork burdens).

6. *Faculty peer relationships, professionalism* (collegiality, collaboration, cooperation, helpfulness, attitudes toward new ideas/teaching, professional demeanor in & punctuality to classes, lounge conversation topics, etc.)

7. *School environment in general* (cleanliness, warmth among teachers and with students, bulletin boards, attitudes toward teaching & learning, etc.)

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PRINCIPAL CONSENT FORM

TITLE OF RESEARCH STUDY:
Effects of Structural Components on Climate in High Schools

PROJECT DIRECTOR:
Mary Helen S. McCoy, Principal Investigator (225-638-9706)
[Dianne Taylor, Faculty Supervisor]

The purpose of this study is to investigate effects of structural components on climate in high schools. Principals in selected schools will be invited to participate in interviews regarding school climate. Time for the interview is estimated at 30 minutes.

This separate consent form is being provided to each principal for signature. Names of interview participants will not be attached to the data, and confidentiality of all responses will be protected. If there are concerns, respondents are invited to call principal investigator.

This study will make a valuable contribution to the high school research base, and your participation will benefit researchers and practitioners who seek to improve education. Your participation is entirely voluntary, and you may withdraw consent and terminate participation in this study at any time without consequence.

I have been fully informed of the above-described procedure with its possible benefits and risks, and I give my permission for participation in the study.

__________________________  ________________________  ___________
Signature of Subject       Printed Name of Subject       Date

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TEACHER CONSENT FORM

TITLE OF RESEARCH STUDY:
Effects of Structural Components on Climate in High Schools

PROJECT DIRECTOR:
Mary Helen S. McCoy, Principal Investigator (225-638-9706)
[Dianne Taylor, Faculty Supervisor]

The purpose of this study is to investigate effects of structural components on climate in high schools. All teachers in selected schools will receive questionnaires seeking their perceptions of school climate. The amount of time to complete the questionnaire is estimated at 15 minutes.

This separate consent form is being provided to each teacher for signature. Teachers should sign this consent form in the space provided below and return this form with the questionnaire to the office. Names of questionnaire participants will not be attached to the data, and confidentiality of all responses will be protected. If there are concerns, respondents are invited to call principal investigator.

This study will make a valuable contribution to the high school research base, and your participation will benefit researchers and practitioners who seek to improve education. Your participation is entirely voluntary, and you may withdraw consent and terminate participation in this study at any time without consequence.

I have been fully informed of the above-described procedure with its possible benefits and risks, and I give my permission for participation in the study.

__________________________  _________________________  __________
Signature of Subject        Printed Name of Subject     Date
TEACHER INTERVIEW PROTOCOL

School Name: ____________________

1. Describe student behavior at this school, in general. Describe student behavior in terms of absenteeism, tardiness, class cutting, verbal abuse of professional staff, fighting, drugs, gangs

2. Describe impediments to teaching/learning in terms of STUDENT DIMENSIONS (attitudes, abilities, absences, tardiness, class cutting, drug use); TEACHER DIMENSIONS (attitudes; paperwork and/or excessive administrative duties).

3. Describe teacher attitudes toward new ideas, change, professional improvement.

4. Describe teacher relationships at this school in terms of collegiality, cooperation, collaboration, departmental cohesiveness.

5. Describe administration at your school. Is there adequate administration in terms of number of personnel? Is administration supportive of academics, student discipline, and teachers in general?

6. Do you know WHY your school changed to block scheduling? Were you involved in the decision to change the scheduling format? Do you feel you were/are well enough prepared for teaching in a block format? Describe staff development before/since the move to block scheduling.

7. Describe the school district. Is the school district supportive of academics, student discipline efforts, and teachers in general?
TEACHER INTERVIEW SCHOOL PROFILE

Your Gender:  _____ Female
              _____ Male

Your Ethnicity:  _____ Black
                _____ White
                _____ Other (______________)

How many total year teaching experience (counting this year) do you have?
    _____ 1-4
    _____ 5-9
    _____ 10-14
    _____ 15-19
    _____ 20+

What is your subject area discipline (most of day)?
    _____ English
    _____ Mathematics
    _____ Science
    _____ Social Studies
    _____ Other (______________________)

What is/are the grade level(s) of MOST students you teach?
    _____ Grade 9
    _____ Grade 10
    _____ Grade 11
    _____ Grade 12

What is your highest degree?
    _____ Bachelor's
    _____ Master's
    _____ Specialist
    _____ Doctorate

Are you certified for ALL subjects you teach?
    _____ Yes
    _____ No
TEACHER INTERVIEW CONSENT FORM

TITLE OF RESEARCH STUDY and PROJECT DIRECTOR:
Effects of Structural Components on Climate in High Schools
Mary Helen S. McCoy, Principal Investigator (225-638-9706)
Dianne L. Taylor, Ph.D., LSU Faculty Supervisor

The purpose of this study is to investigate effects of structural components on climate in high schools. Teachers in selected schools will be invited to participate in interviews regarding climate. Time for individual interviews is estimated at 30 minutes and for focus group interviews at 45 minutes.

This separate consent form is being provided to each teacher for signature. Names of interview participants will not be attached to the data, and confidentiality of all responses will be protected. If there are concerns, respondents are invited to call principal investigator.

This study will make a valuable contribution to the high school research base, and your participation will benefit researchers and practitioners who seek to improve education. Your participation is entirely voluntary, and you may withdraw consent and terminate participation in this study without consequence.

I have been fully informed of the above-described procedure, and I give my permission for participation in the study.

Signature of Teacher  Printed Name of Teacher  Date
VITA

Mary Helen Smith McCoy was born in New Roads, Louisiana, on February 14, 1944, the second of five children of Francis Audley Smith and Genevieve Kearney Smith. In 1964, she earned a business administration degree from Louisiana State University. That year, she married Michael Day McCoy and moved to Texas, where their first child, Mary Taylor “Molly” McCoy, was born in 1966. The family moved in 1967 to New Roads, Louisiana, where Michael Day McCoy, Jr., was born in 1968.

In 1969, McCoy designed and installed the initial filing system for the newly formed Louisiana Electric Cooperatives, Incorporated, now Cajun Electric. She also substituted several times in area high schools and found her calling. McCoy was employed by the Pointe Coupee Parish School Board in 1970 as a business educator at Poydras High School, a job she held for 10 years. During this period, she also taught accounting in night classes at a local vocational school and returned to Louisiana State University, completing a master’s degree in vocational education in 1978.

In 1980, McCoy became a Notary Public and, with two partners, opened the Pointe Coupee Abstract Company, Incorporated. She served as general manager of this business, conducting legal searches of official conveyance, mortgage, and suit records, and recording and transcribing legal depositions. During this venture, she and her partners also began The Pointe Coupee Legal News, which continues to thrive. From 1985 to 1988, McCoy worked for the Pointe Coupee Parish Police Jury, where she...
established a filing and archival system, wrote official jury minutes for publication, and performed administrative secretarial duties.

McCoy again became a professional educator in 1988, serving as Assistant Principal at Catholic High School of Pointe Coupee for 10 years, a period during which the school experienced notable growth. In this administrative position, she merged business and educational skills to focus on instructional leadership, teacher mentoring, scheduling, managerial duties, academic counseling, test design, newspaper publicity, and computerized cumulative records and reports. This satisfying period in her career prompted her return to Louisiana State University for doctoral studies in educational leadership and research. She has presented papers at three Southwest Educational Research Association conferences, held in Dallas, Houston, and San Antonio, Texas.

During school year 1998-1999, McCoy served as a graduate assistant and helped with research studies. In July 1999, she became a researcher at the Louisiana Department of Education, Office of Management and Finance, Division of Planning and Analysis. She is a candidate for the Doctor of Philosophy degree to be awarded in December 1999.
DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Mary Helen Smith McCoy
Major Field: Educational Leadership and Research
Title of Dissertation: Effects of 4X4 Block Scheduling on Student Discipline, Faculty Collegiality, and Obstacles to Teaching in Louisiana High Schools

Approved:

[Signatures]

EXAMINING COMMITTEE:

[Signatures]

Date of Examination: September 28, 1999