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EFFECTS OF THE 4 X 4 BLOCK SCHEDULE ON TEACHER BEHAVIOR AND STUDENT ENGAGEMENT RATE AT THE HIGH SCHOOL LEVEL

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

Karen Meredith Soniat
B.S., Louisiana State University, 1975
M.Ed., Louisiana State University, 1980
December 1999
DEDICATION

This dissertation is dedicated first and foremost to Lyle, my wonderful and supportive husband, and Meredith, my loving daughter. Secondly I wish to acknowledge my Mom and Dad, Joyce and Joel Meredith, for their years of patience and support. Dad, I wish you were here to share this with me.

This degree must also be shared with all of my family, in-laws, and friends. Each and every one of you have helped me in so many ways. I started this program so long ago that it's difficult to remember when I wasn't in school. To my best supporters, Lyle and Meredith, I am so grateful for your patience, sacrifice, and help over these past eight years. It's finally over, and I'm looking forward to being me again! Thanks for sticking with me.
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ABSTRACT

Numerous educators have suggested that traditional scheduling practices in the nation’s schools have contributed to the inability of teachers to utilize “proven” instructional techniques. This study examined the effects of the 4 X 4 block schedule on teaching behavior and student engagement rate in four core curriculum areas in 21 Louisiana high schools.

This causal-comparative, ex-post facto study involved three groups of schools matched to the extent possible on student population, free/reduced lunch, and community type. The 250 teachers in the Phase I (quantitative study) sample were randomly selected and measured via classroom observations.

MANOVA results relating to differences on effective teaching behaviors among the three established groups of teachers revealed a significant multivariate effect for scheduling type (Group 1, Three + Years Block Scheduling; Group 2, Two Years Block Scheduling; Group 3, Traditional Scheduling). Teachers across the three groups differed significantly in use of effective teaching behaviors when all effective teaching items were considered together.

Univariate ANOVA results on 15 effective teaching items provided evidence of a significant effect for two dependent variables: “ Appropriately Uses Student Grouping” and “Number of Transitions in Modes of Instruction.” Post hoc analysis regarding “Number of Transitions in Modes of Instruction” revealed that teachers in
both block scheduled groups differed significantly from teachers in traditionally scheduled schools in that block scheduled schools had more transitions, as predicted.

Phase II (qualitative study) involved case study development in two Group 1 schools scoring at the extreme levels on the effective teaching instrument. Six school-level factors were found to have differentially influenced implementation of block scheduling in the two schools: High Expectations; Clear, Articulated Academic Focus; Atmosphere of Professionalism; Spirit of Innovation; Shared Leadership and Decision Making; and Faculty Cohesiveness.

Four recommendations for practice include: 1) certain school-level factors such as school discipline must be controlled so that teachers may focus on improving instruction; 2) shared leadership appears to be necessary for creating accountability and sustaining innovations such as block scheduling; 3) teachers must be provided time to plan professional development activities which are specific to core content areas and research-based if practice is to improve; and 4) there must be agreement on objectives for each course/subject.
CHAPTER ONE

INTRODUCTION

An unprecedented level of school reform activity has occurred at the federal and state levels in the past decade (Cawelti, 1995). Although there is continuing controversy regarding the past and current academic performance of American students, most educators have agreed on one basic issue: students of the 21st century will need basic knowledge in core curriculum areas, and more importantly, must be able to solve problems, analyze information, and constantly adapt to a changing, technological world (Mullis, 1994; Doyle, Cooper, & Trachtman, 1991; Cawelti, 1995).

Educators have long attempted to identify what elements of the educational system can be changed or combined to ensure that schools at all levels become more productive (Cawelti, 1995). Identifying the critical elements of restructuring and school redesign are at the heart of our quest for successful reform.

Performance standards, authentic assessment techniques, interdisciplinary curriculum, school-based shared decision making, community outreach and use of technology are often among those elements identified as critical to successful change of the American high school (Cawelti, 1995). But it is the very structure of the school experience, according to numerous researchers, which must be altered if we are to provide the opportunity for teachers to utilize strategies and techniques proven effective with today's increasingly complex and diverse student body (Bryant, 1995; Hottenstein & Malatesta, 1993; Canady & Rettig, 1995; Marshak, 1997; Cawelti, 1995).
Increasing numbers of reports and articles have asserted that traditional scheduling practices in the nation's schools have contributed to the inability of teachers to utilize "proven" instructional techniques and thus, has limited the ability of students to access and master rigorous and challenging academic content (National Education Commission on Time and Learning, 1994; NASSP Curriculum Report, 1996). The predominant way of organizing time during the instructional day, according to some researchers, hinders both the teaching and learning process (Cusick, 1973; Sizer, 1992).

Canady and Rettig (1995) suggest that it is time to critique the nation's reliance on the traditional six-, seven-, or even eight-period daily schedule. The authors characterize the traditional time schedule as rigid and inflexible, and they argue that problems with the current high school schedule must be addressed if learning is to be improved.

According to the National Center for Educational Statistics (NCES, 1993), the typical American high school offers a six-period day, with approximately 5.6 hours of classroom time structured around the "Carnegie unit." The Carnegie unit is a standard measurement of class time which represents one credit for completion of a one-year course meeting daily for a period of approximately 175 days (NCES, 1993). "The results are predictable," according to the National Education Commission on Time and Learning. "The school clock governs how families organize their lives, how administrators oversee their schools, and how teachers work their way through the curriculum" (National Education Commission on Time and Learning, 1994, p. 8). Many educators have suggested that fundamental changes in the structure of the school
day are necessary for true reform at the high school level (Canady & Rettig, 1995; Cawelti, 1994).

Canady and Rettig have concluded that the single-period, six- or seven-period day: 1) contributes to the impersonal nature of high schools; 2) exacerbates discipline problems; 3) cuts the "time pie" very thinly when coupled with the requirements of the Carnegie Unit for graduation; 4) limits instructional possibilities for teachers; and 5) does not permit flexible time for teaching and learning (Canady and Rettig, 1995).

"No matter how complex or simple the school subject -- literature, shop, physics, gym, or algebra -- the schedule assigns each an impartial national average of 51 minutes per class period, no matter how well or poorly students comprehend the material" (Canady and Rettig, 1995, p. 2). Similarly, the National Commission on Time and Learning concluded that the school's "fixed clock and calendar is a fundamental design flaw that must be changed" (National Education Commission on Time and Learning, 1994, p. 13).

Schools in many states, including a limited number in Louisiana, are experimenting with a creative approach to scheduling in order to address the need for increased opportunities for time and learning. Proponents of this approach, referred to as 4 X 4 block scheduling, suggest that concentrated blocks of instructional time should result in a variety of benefits for both students and teachers, including improved instructional practices, increased academic achievement, greater engagement rate or time-on-task, and reduced absenteeism, among others (Canady & Rettig, 1995; Kramer, 1996). Four by four block (4 X 4) scheduling involves implementation of 90-minute
class periods, with students taking four classes per semester. Schools within Louisiana first began to implement the 4 X 4 schedule in 1995. While slow to begin, Louisiana Department of Education reports indicate that 44 public high schools were engaged in 4 X 4 block scheduling for the 1997-98 school year (Louisiana Department of Education, 1998). Officials in Louisiana and throughout the nation have projected that schools and districts will continue to implement this scheduling approach in increasing numbers each year (Louisiana Department of Education, 1998; Canady & Rettig, 1995).

The Issue of Block Scheduling

Proponents of the 4 X 4 block scheduling suggest that changing the rigid time structure of secondary schools may be a "springboard for organizational growth and reexamination of instructional goals" (Hackmann & Schmitt, 1997, p. 8). However, other educators and researchers have also warned that "block scheduling without fundamental changes in instruction is merely longer blocks of the same old stuff" (Wyatt, 1996, p. 18).

Clearly, "implementation of a new school schedule is not an end in itself" (Canady & Rettig, 1996, p. xix). What teachers actually teach and how they teach it remains the critical element at the heart of improved achievement. But increasingly, one may find the topic of high school scheduling practices in the literature on high school reform efforts and efforts to change instructional practices of teachers (Cawelti, 1994; Canady & Rettig, 1995; Averett, 1994; Eineder & Bishop, 1997; Hackman, 1996; Kramer, 1996; Smith, 1996; Irvine, 1995; National Education Commission on Time and Learning, 1994).
Individual teachers and their knowledge, as well as the teaching behaviors and methods they employ within their classrooms each day, may largely determine whether American students gain or lose ground academically over the coming years. For students to acquire the skills needed for the 21st century, teachers must use proven instructional methods and change the traditional teacher-centered classroom which has been characteristic of education in the past. Proponents of block scheduling suggest that restructuring of the school day is a necessary step toward a new model of high school which will facilitate use of effective teaching practices (Marshak, 1997).

Block scheduling is a new effort to escape from "the box" and to create structures for high school based on some very different understandings of human development, learning and teaching, the nature and structure of knowledge, and the cultural and social realities of the present, as well as expectations for the future, than were commonly held either in 1920 or in 1970 (Marshak, 1997, p. xiv).

The Need for Additional Research

The research regarding block scheduling has largely been collected through survey methodology. Much of the available literature is anecdotal in nature. More recent attempts at research lack empirical evidence regarding how teachers actually teach within the restructured time. Likewise, research on this current wave of school scheduling has largely failed to assess the impact on student behavior, and particularly the impact on student engagement during instruction.

Statement of the Problem

Amid the myriad of school reform efforts, the restructuring of time during the school day has begun to emerge as a pivotal element in discussions regarding classroom
instruction (Oakes, 1995). The available research, however, has not addressed in an empirical fashion whether block scheduling might serve as a catalyst for more effective classroom instruction and higher student engagement rates. This study will provide an in-depth look at teaching practices and student engagement across groups of teachers in schools in various years of block scheduling and in traditionally scheduled classrooms.

**Purpose of the Study**

The education community has often been criticized for its tendency to embrace new programs, practices, methods and curriculum without a sound research base to support such changes. Some have suggested that educators jump from one "fad" to the next, with student achievement taking a back seat in the process. The debate over whole language vs phonics, new math vs traditional programs, and open vs closed classrooms, for example, has caused the general public to question many of the decisions made by educational leaders. The lesson learned from these past experiences is that education professionals must carefully construct valid studies of these new innovations and carefully consider the research literature prior to embracing such innovations within the context of their own schools. Yet to be determined is whether the implementation of 4 X 4 block scheduling will be among these fleeting innovations, or whether it will provide the opportunity for extended time and learning opportunities which result in true improvement for the nation's high schools. Will block scheduling provide schools with the "power" to institutionalize effective classroom practices (Canady & Rettig, 1995)? Some have suggested that "too little thought and action have been given to the
educational and emotional impact of a school schedule on the lives of students and teachers" (Canady & Rettig, 1995, p. xi).

The primary purpose of this study was to examine the following questions:

1. Has implementation of block scheduling in Louisiana high schools resulted in the use of more effective teaching methods in secondary school classrooms as compared to traditionally scheduled classes?

2. Has implementation of block scheduling in Louisiana high schools resulted in higher student engagement rates during block scheduled classes as compared to traditionally scheduled classes?

3. What are the differing characteristics of block scheduled schools that have been differentially successful in creating more effective classroom environments?

Significance of the Study

"The allocation of [extended] time is the single most controllable, and therefore, one of the most powerful operational decisions a school can make" (Irvine, 1995, p. 1). It is also one of the least expensive restructuring experiences that a school may employ. With increasing numbers of schools employing block scheduling practices, it is important that empirical research clearly examine the impact of block scheduling on teaching behavior and student engagement during class.

While the use of block scheduling has increased significantly throughout the country, there is limited experimental research to date which has examined teacher behavior in block scheduled classes as compared to teaching behaviors in traditionally scheduled classes of 50 to 55 minutes. Much of the available research information on
the impact of block scheduling is anecdotal in nature (NCTM Bulletin, 1996). Research has yet to be conducted which has examined teaching behaviors in block scheduled classrooms during various years of implementation.

This study examined three groups of schools of various socioeconomic levels, community types and sizes. Two matched groups were formed of schools involved with block scheduling for multiple years. A similarly matched group of schools formed the basis for a control group. The study sought to determine whether teachers in the groups of schools varied significantly in regard to instructional approaches and if students varied significantly in their classroom engagement rates or time-on-task. The examination included schools in various stages of block schedule implementation since research literature suggests that two to three years are required before teachers fully embrace and implement change (Fullan & Stiegelbauer, 1991).

The study involved a sample of 250 Louisiana high school teachers and is therefore an important work adding to the scarce body of literature on observed teaching behaviors at this level. The results give an overall picture of day-to-day instruction and student engagement occurring within the core curriculum areas in the state’s high schools. The empirical data gathered from this study reflect actual teaching practices and should be important to teachers and administrators as we examine the true impact that this scheduling approach has had on teaching. In addition, information obtained regarding use of identified effective teaching behaviors in classrooms should be valuable to those involved in teacher preparation and inservice training, since
previous research has suggested the importance of active, diverse teaching techniques in student achievement (Cawelti, 1995).

**Research Hypotheses**

This study employed a causal-comparative, ex-post facto design of a selected number of teachers in Louisiana high schools. The study examined the effect of extended learning time provided via the 4 X 4 block schedule on teacher behavior and student engagement rate in schools on block schedule compared to traditionally scheduled high schools. The following directional hypotheses and qualitative question formed the basis for the study:

**Hypothesis 1:**

Mean scores on effective teaching behaviors, as measured by the Classroom Observation Instrument (COI), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.

Sub-Hypothesis 1 (A):

Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers that have been on block scheduling for three or more years than teachers in block scheduling for two years.

Sub-Hypothesis 1 (B):

Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers that have been on block scheduling for three or more years than teachers in traditionally scheduled schools.
Sub-Hypothesis 1(C):
Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers on block scheduling for two years than teachers in traditionally schools.

Hypothesis 2:
Mean scores for on-task student engagement rate, as measured by the modified Stallings' Classroom Snapshot (CS), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.

Sub-Hypothesis 2 (A):
Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers that have been on block scheduling for three or more years than for teachers in block scheduling for two years.

Sub-Hypothesis 2 (B):
Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers that have been on block scheduling for three or more years than for teachers in traditionally scheduled schools.

Sub-Hypothesis 2 (C):
Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers that have been on block scheduling for two years than for teachers in traditionally scheduled schools.

Question 1:
What are the differing characteristics of block scheduled schools that have been differentially successful in creating more effective classroom environments?
Operational Definitions

High School: For purposes of the study, high school was defined as any secondary-level public school in the state of Louisiana that contained a grade configuration of grades 9-12.

4 X 4 Block Schedule: For purposes of this study, 4 X 4 block schedule was defined as a high school schedule consisting of four, 90-minute class periods meeting daily for one semester. In the 4 X 4 block schedule design, students take four classes, earning four credits at the end of each semester and eight credits at the end of the regular school year. By the end of the fourth year, students may potentially earn 32 Carnegie units of high school credits (NASSP Curriculum Review, 1996).

Traditional Schedule: A traditional schedule was defined as a high school schedule consisting of a six- or seven-period day with classes lasting approximately 50-55 minutes per class. Classes meet daily, with approximately 120 hours of time per subject provided during the school year. Students take approximately 24 to 28 classes to earn the required 24 Carnegie units for graduation.

Certified Teacher: For purposes of this study, certified teacher was defined as a teacher with full certification, appropriately certified by the Louisiana Department of Education (LDE), for the secondary-level course currently assigned. Selection of teachers was limited to those certified and currently teaching in the mathematics, science, social studies or English/language arts courses. Teachers on Temporary Teaching Assignment (TTA) or Circular 665 (those without certification or having failed to pass the National Teachers' Examination) as per Louisiana Department of
Education certification requirements in Bulletin 746, were eliminated from observation (LA Department of Education Bulletin 746, 1998).

Core Curriculum Area: Core curriculum area was defined as all math, science, social studies and English/language arts courses offered at the high school level for students within the regular education program.

Effective Teaching Behavior: For purposes of this study, effective teaching behavior was defined as those research-based, effective instructional behaviors exhibited by teachers as measured by the Classroom Observation Instrument (COI). These research-based teaching practices included the following fifteen elements:

Teacher's ability to keep students on task;
Teacher's appropriate use of student grouping;
Teacher's presentation of new content and skills, including use of multiple transitions in the lesson;
Teacher's command and grasp of the subject matter;
Teacher's integration of knowledge and skills across disciplines;
Teacher's use of innovative student work activities;
Teacher's use of independent practice;
Teacher's expectations of students;
Teacher's use of positive reinforcement;
Limited number of classroom interruptions;
Teacher's use of appropriate discipline and ability to maintain appropriate classroom behavior;
Teacher's ability to create a positive classroom climate;

Physical characteristics of the teacher's classroom -- presence of students' work;

Physical characteristics of the teacher's classroom -- instructional displays; and

Number of transitions in modes of instruction.

Each of these items is individually defined in the instrumentation description contained in Chapter Three.

Student Engagement Rate: Student engagement rate was defined as the amount of student-exhibited time-on-task during classroom instruction, as measured by the modified Stallings' Classroom Snapshot (CS) time-on-task instrument. Thirteen measures of on- and off-task behavior were measured by the Stallings' Classroom Snapshot. More specifically, student engagement rate was the amount of time that students were engaged in one or more of the nine on-task classroom activities, as compared to the four areas of off-task behavior. On-task behaviors included the following:

- Working on assignments or reading silently;
- Lecture or non-interactive visual or video presentation;
- Discussion or questioning and answer - rapid fire;
- Discussion or questioning and answer - higher order thinking skills;
- Students or teacher using technology or engaged in laboratory work;
- Making assignments or structuring statements;
- Rote practice and drill or work with pencil and paper;
- Simulations, role playing, debates, or oral presentations; and

13
Student assessment; student is taking a test or quiz.

Off-task behaviors measured by the modified CS included the following four behaviors:

Social interaction;

Student uninvolved;

Being disciplined; and

Classroom management.

Each of these items is individually defined in the instrumentation description contained in Chapter Three.

School Enrollment Size: School size was defined as the number of students enrolled in a school as of the October 1, 1997, Student Information System (SIS) reports published by the Louisiana Department of Education. School enrollment is reported on the SIS to the Department each year.

Socio-economic Status Classification (SES): For purposes of this study, SES was defined as the percentage of students qualifying for free and reduced school lunch, per data provided by the Louisiana Department of Education SIS for 1997-98. Student enrollment in the free and reduced school lunch program was used to approximate family socio-economic status since data relating to family income and parents' educational level are not a part of available data from the LDE. The requirements for participation in the federally funded school lunch program are based on family income; federal guidelines are used to define poverty and participation criteria. Therefore, free and reduced school lunch data is the best available indicator for socio-economic status. The free and reduced school lunch data is collected by schools and reported to the LDE.
The percentage of students participating in the free and reduced lunch program at each school was determined by dividing the number of students enrolled in the program by the total number of students who attended the school (Crone, et. al., 1992). Each local school system enters free and reduced lunch codes on the individual computerized student records which are part of the state-wide SIS data base.

School Community Type: School community type was defined as the location classification of a school as urban, suburban, or rural, based upon initial data supplied by the Louisiana Department of Education, with adjustment made by the researcher to collapse seven initial location classifications into three.

Classifications of schools as urban, suburban, or rural were made based on seven original locale codes assigned by the U.S. Department of Commerce, Bureau of the Census, and made available by the LDE. The data is part of the Common Core of Data reported by states, and it is used nation wide. The classification codes are a description of the school based upon proximity to populous areas and include seven types of classifications:

- Large City - a city having a population greater than or equal to 250,000;
- Mid-size City - a city having a population of less than 250,000;
- Urban Fringe of a Large City - any incorporated place or non-place territory defined as urban by the Census Bureau;
- Urban Fringe of a Mid-size City - any incorporated place or non-place territory defined as urban by the Census Bureau;
- Large Town - an incorporated place with a population of 25,000 or more;
Small Town - an incorporated place with a population between 2,500 and 25,000; and

Rural - any incorporated place or non-place territory designated as rural by the Census Bureau.

For purposes of this study, the following classification schema was used for School Community Type:

Urban School - a school with a Census Bureau locale code of 1 or 2;
Suburban School - a school with a Census Bureau locale code of 3, 4, or 5; and
Rural School - a school with a Census Bureau locale code of 6 or 7.

The operational definitions which have been described in Chapter One will be referred to throughout the study. They are important in understanding the nature of this inquiry.

Limitations of the Study

There are several limitations which must be noted regarding this study.

First, schools, and particularly high schools, are a complex phenomenon. A weakness of the research design was the researcher's inability to control other independent variables which may account for variances among the schools and groups. Other forces, or combinations of activities, may be at work in the schools which may have influenced the outcomes of the study. The study did not address in a formal sense, for example, the resources which may or may not be available to the school. Careful matching of the three groups of schools was used to adjust for pre-existing differences, to the extent
possible. The use of qualitative methods in Phase II also provided the researcher with a method of triangulation to more fully explore research findings from Phase I.

While the sample of teachers and schools was sizeable, more extended time for observation of teachers could have added to the findings. Prolonged engagement at selected schools over time would enhance the overall findings and help to more fully explain differences across the groups.

**Summary**

The researcher designed a causal-comparative, ex-post facto study of selected high schools in Louisiana to examine the effects of 4 X 4 block scheduling on teaching behavior and student engagement rate in core curriculum areas. The findings of this research provide a first-hand look at actual classroom teaching behaviors and in-class student activities across the selected groups of schools.

The additional chapters of this work contain details of the study. Chapter Two provides an overview of available literature of the topics of block scheduling, effective teaching and school change. Chapter Three describes the methodology in terms of hypotheses, design, sampling, instrumentation and psychometric properties, and data analysis used in the study. The study was conducted in two phases over the course of the 1998-99 school year. Phase I involved initial sampling and observation of teachers at 21 Louisiana high schools, while Phase II involved a qualitative case study of two selected block scheduled schools. Chapter Four presents the quantitative findings from Phase I, while Chapter Five presents the qualitative case studies and cross-case comparison. Chapter Six summarizes the study and reconsiders the initial hypotheses.
and questions posed in this research study. Conclusions and recommendations are
drawn, and recommendations for educational practice are also suggested. The chapter
concludes with a discussion of methodological lessons from the study and
recommendations for further research.
CHAPTER TWO
REVIEW OF THE LITERATURE

Introduction

The purpose of this study was to examine the implementation effects of an innovative school scheduling approach, referred to as the 4 X 4 block schedule, on teaching behaviors and student engagement rate at the high school level. An increasing number of Louisiana public high schools are employing this schedule format. This study examined whether teachers within block scheduled schools employed more effective teaching behaviors than their counterparts in traditionally scheduled schools, and whether students within those classes exhibited higher student engagement rates than students in traditionally scheduled classrooms. The study also included teachers involved in block scheduling for multiple years to determine if significant differences existed among teachers involved for three years compared to two years, or when compared to a control group of teachers matched on various school-level factors.

Canady and Rettig (1995) suggest that the traditional single-period day at the high school level limits instructional possibilities for teachers and does not permit flexible time for teaching and learning. Likewise, Averett (1994) of the North Carolina Department of Education, suggests that single period high school schedules may limit the instructional choices and practices of teachers. When faced with only 45 to 50 minutes, many teachers feel compelled to "expose" students to curriculum. Most teachers, according to Canady and Rettig (1995), respond that the most efficient way to do this is to lecture. In addition, a considerable amount of research has concluded that
an overemphasis on small, isolated skills associated with passive seat work will perpetuate low achievement (Cooper & Levine, 1988; Peterson, 1988; Cooper, 1989; Cooper & Sherk, 1989; Allington, 1990). By contrast, "several authors have reported that unusually effective schools tend to emphasize instructional approaches that encourage and support active and enriched learning by students in a context which involves considerable interaction with teachers and other students" (Levine & Lezotte, 1990, p. 29). Proponents of this scheduling approach suggest that concentrated blocks of instructional time should result in a variety of benefits for both students and teachers, including improved instructional practices, increased academic achievement, and greater engagement rate or time-on-task, among others (Canady & Rettig, 1995; Kramer, 1996).

Can block scheduling serve as a catalyst to improve teaching behaviors, student engagement during class, and ultimately student achievement? What does research say about effective classroom teaching? Are teachers in block scheduled schools actually making changes in their teaching methods? What does it take to get teachers to enact changes in teaching methodology, and how long should it take for such changes to take hold? These issues and questions will be explored in this review of literature since they represent important variables related to the implementation of block scheduling in Louisiana's and the nation's schools.

The review of literature is organized into four major sections. Section One: Research on High School Scheduling Practices; Section Two: Teachers and Change at the High School Level; Section Three: Research on Teacher Effectiveness; and Section
Four: The Relationship of Teacher Effectiveness and School Effectiveness Research. Each section contains numerous sub-topics.

A variety of research strategies were used in developing the review of literature. The Educational Resources Information Clearinghouse, Dissertation Abstracts International, and Sociological Abstracts computerized data bases were utilized. In addition, the Internet was used to locate specific sites concerned with block scheduling and effective teaching practices. Several dissertations on related topics were ordered from University Microforms International Dissertation Services, and LOLA, the Louisiana State University on-line catalog reference source, was used to locate materials and additional references.

Research on High School Scheduling Practices

Time as a Factor in Teacher Effectiveness

In April 1994, a report entitled "Prisoners of Time" was issued by the National Education Commission on Time and Learning (1994). The report sharply criticized the rigidity of secondary school schedules and recommended that state and local boards of education work with schools to redesign education so that "time" could become a factor supporting learning, not a boundary marking its limits.

Within its report to the President and United States Congress, the Commission concluded that ...

Time is the missing element in our great national debate about learning and the need for higher standards for all students. 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...The reform movement of the
last decade is destined to flounder unless it is harnessed to more time for learning (National Education Commission on Time and Learning, 1994, p. 3).

Based on its 24-month review of the scheduling practices and other issues facing American schools, the Commission identified five unresolved issues which they felt presented tremendous barriers to current efforts to improve learning.

(1) ...The fixed clock and calendar is a fundamental design flaw that must be changed; (2) Academic time has been stolen to make room for a host of nonacademic activities; (3) Today's school schedule must be modified to respond to the great changes that have reshaped American life; (4) Educators do not have the time that they need to do their job properly; and, (5) Mastering world-class standards will require more time for almost all students" (National Education Commission on Time and Learning, 1994, p. 13)."

Earlier literature by Theodore Sizer in 1992 expressed similar concerns to that of the Commission. Sizer's report, entitled Horace's Compromise, described how the traditional six to seven period-day structure of the high school hindered both the teaching and learning process (Sizer, 1992). The study recorded how time was actually spent by teachers and students during the school day. Sizer suggested that current scheduling practices fragmented learning, that too much time was wasted during the school day on non-instructional activities, and that teachers had far too many students to be able to get to know them, their needs, or their interests. The report concluded that teachers were required to "compromise" their teaching as a result of the limitations imposed by rigid scheduling and the large numbers of students under their tutorage.

Historical Review of High School Scheduling Practices

It is important to review the early history of high school scheduling practices in the United States in order to establish a context for the review of literature on 4 X 4
block scheduling. How did classrooms in the United States develop their current time structure?

Prior to 1892, early high schools and their predecessors, the Latin Grammar School/Academies, actually showed some flexibility in their school schedules (Gorman, 1971). Many of the subjects taught were offered on a two-, three-, or even four-day a week schedule. However, a report issued in 1894 by the National Education Association's Committee of Ten planted the seed for the development of the traditional six- to seven-period day still used today by most high schools.

Building upon the recommendations of the Committee of Ten, in 1909 the Carnegie Foundation proposed a standard measure of student class time. This recommendation lead to the development of the Carnegie Unit, and by 1920, the unit was widely accepted as the standard measurement of high school students' course work (Gorman, 1971).

American high schools, according to Canady and Rettig (1995), now typically consist of a six- or seven-period day with approximately 50 - 55 minutes spent in each class period, regardless of subject-matter complexity. Schools in the U.S. have adhered to the rigid Carnegie unit for the past 70+ years. The Carnegie unit, based upon the approximately 120 hours of time per subject each school year, has remained remarkably unchanged, except for the addition of some extra periods each day in some schools (Canady & Rettig, 1995).

Some limited experimentation with scheduling occurred in the early 1960s and 1970s, primarily with flexible modular scheduling (FMS) (Canady & Rettig, 1995).
Designed originally by J. Lloyd Trump (1959), the FMS replaced traditional schedules with instructional sessions of varying lengths. Schedules were based upon needs of the individual disciplines, some with very short modules of 20 minutes, while others were carried out in longer sessions. Another feature of the schedule was individualized, unscheduled student time for independent study.

During the height of implementation, it is estimated that 15% of American high schools were employing the modular scheduling approach. Early reports indicated that the schedule was preferred by both teachers and students, but a range of opinions were expressed by parents and community members (Goldman, 1983). Student achievement on the flexible model was reportedly mixed and was generally described as no better than in traditionally scheduled schools. The later failure of the model was largely attributable to discipline problems related to the independent study (Goldman, 1983). In addition, many teachers found it difficult to tailor their instruction to varying lengths of time. The FMS experience proved valuable in other ways, however. "The lesson to be learned from the FMS experience is that such flexibility must be real, must produce significantly better results than any system it replaces, and must not cause more problems than it solves" (Goldman, 1983, p. 209).

A very limited number of doctoral level dissertations were published on scheduling practices in the 1970s, and most provided generalized information on the subject (Smith, 1996). E. F. Newman, for example, examined the "Forces Affecting the Maintenance of an Innovation" in senior high schools (Newman, 1974). G. M. Brembos in 1976 studied the degree of teacher acceptance and rejection of modular scheduling.
and its affects on classroom climate in the Catholic schools in New Jersey (Brembos, 1976). As experimentation with modular scheduling diminished, research on the effectiveness and impact of such efforts also declined.

**Scheduling Practices as a Means to Restructure High Schools**

While early efforts faded, by the late 1980s and early 1990s, educators had again renewed the search for alternatives to the traditional schedule and its single period curriculum (Canady & Rettig, 1995).

The current popularity of block scheduling emerged from the middle school reform initiatives of the mid-1980s (Smith, 1996). These decades produced few research studies, however, to truly examine the impact of the flexible scheduling alternatives. Only a small number of dissertations were published during the 1980s and early 1990s on flexible scheduling at either the middle or high school level.

In 1994, Gordon Cawelti, executive director of the Alliance for Curriculum Reform in Arlington, Virginia, concluded a nationwide study of high school restructuring efforts (Cawelti, 1994). The term restructuring was used to describe "the changes that high schools are undertaking to improve their productivity and effectiveness in serving the needs of youth and the nation" (Cawelti, 1994, p. 5). Among the seven indicators of major school restructuring efforts, block scheduling emerged as a dominant feature in attempts to change the school organization. The author concluded that 10% to 15% of American high schools were engaged in significant restructuring efforts.
For purposes of his study, Cawelti (1994) defined "block scheduling" as a schedule in which at least part of the daily schedule was organized into larger blocks of instructional time, with at least 60 minutes per class. Cawelti described the significance of using a block schedule in the school day.

The traditional six- or seven-period day necessarily involves frequent class changes and time lost, multiple preparations for teachers, and little time for interdisciplinary work. Such a structure tends to discourage using a variety of learning activities and probing ideas in depth. This important schedule change [block scheduling] typically allows students to accumulate the credits they need for graduation through four periods of 90-minute duration a day. Its major value is to enable teachers to use a variety of teaching activities in these extended periods, and to greatly reduce the number of students seen by teachers in classes each day (Cawelti, 1994, p. 23).

Cawelti mailed surveys to all 10,365 of the nation's regionally accredited public and private high schools and elicited a 33% response rate. The author found that of those responding, 11% claimed that the block schedule was in general use; 12% indicated that the block schedule was partially implemented; 15% indicated that implementation was planned for the following year; and 61% responded that there were no plans to implement a changed schedule for the following year. Respondents also provided information on a variety of approaches being used in block scheduling. Cawelti (1994) concluded that the slow rate of reform was likely to continue until there were more successful models of comprehensive, restructured high schools where the focus was on improved student learning.

While some criticism of the Cawelti study exists, Cawelti is credited with leading the call for more research in the area of flexible scheduling. More recent literature has emerged in the last few years on 4 X 4 block scheduling as the concept has
expanded throughout the United States. Additional research has examined such areas as student discipline, relationship to dropout rates, student and teacher satisfaction with the block schedule, and overall school climate under block scheduling. However, most of the available research information is based on survey methodology, and much is anecdotal in nature (NCTM Bulletin, 1996).

Based upon an analysis of Dissertations Abstracts and literature reviews, it appears that few studies in the United States regarding block scheduling have employed a control group design. The literature shows varied results on student achievement, while little research has been published regarding actual changes in teaching methodology and student engagement rate under the block schedule. Even fewer studies have examined implementation of block scheduling over time.

The Status of Research on Teaching Behavior in Block Scheduling

There is a scarcity of literature regarding the teaching behaviors of those involved in block scheduling compared to traditional scheduling. Those studies which have been identified will be discussed in a later part of this section. More commonly, one may find research literature relative to the coverage of subject-area content in block scheduled schools. Several of these studies have examined the issue of breadth versus depth of coverage in the academic content (Reid, 1995; Kramer, 1996; Marshall, Taylor, Bateson & Bridgen, 1995). While not directly focusing on the methodological differences between teachers in block versus traditional schedules, these studies do provide information regarding the impact of block scheduling on curriculum taught within the extended time. Most of these studies, however, draw conclusions from
survey data and require confirmation by carefully designed classroom observation and student assessment.

An early review by King, Clements, Enns, Lockerbie and Warren (1975), for example, provided information regarding teachers’ coverage of content in French and mathematics. While the study did not specifically address the issue of instructional methods, it did suggest that Ontario teachers of French and math found difficulty in covering the equivalent of two classes in the double-length block period. In a later follow-up study, King, Warren, Moore, Bryans and Pitre (1978) conducted detailed observations in six block scheduled schools. They observed that mathematics teachers in block schedules frequently used more instructional time to cover the same content when compared to teachers in traditional schedules.

While these older studies suggested that there may be a decreased breath of content coverage in some subjects, more recent studies suggest that block scheduling creates an opportunity for teaching concepts in greater depth. One such study was conducted by Averett (1994) in North Carolina. Averett surveyed teachers in 21 North Carolina schools that were involved in semestered block schedules in their first and second years. The author reported that over 70 percent of the teachers perceived that implementation of the block schedule had a moderate or a strong positive effect on a variety on student outcomes, including: 1) in-depth knowledge; 2) problem-solving ability; 3) higher-order thinking ability; and 4) retention of subject matter. An additional study conducted in 1995 found similar results. The Meadows’ (1995) study involved a survey of teachers at four Maryland high schools in their first and second
years of block scheduling. The need for teaching in greater depth has been affirmed by recent reports such as the Third International Study of Mathematics (TIMMS, 1997).

Very few studies have been identified which have specifically focused on teaching behavior in block and traditionally scheduled schools. Of those identified, almost all of the studies have employed survey methodology. Only one recent study has been found which employed direct classroom observation of teachers and students with a control group design. This study, under the direction of Whita (1992), involved a Harvard research team conducting a quasi-experimental study of Masconomet Regional High School in Massachusetts. The methodology utilized direct classroom observation and videotaped interviews, in addition to other methods.

The school allowed volunteer enrollment of 80 students in an experimental "Renaissance Program" which employed a block schedule, while 95 students remained in the traditionally scheduled classes. Class schedules for the Renaissance group included two 100-minute classes periods plus an elective each day. Students in the traditional program attended regularly scheduled 46-minute classes. Using a pre-post test design, surveys, interviews, and observation, the results indicated that the experimental Renaissance group students were more satisfied with their student/teacher relationships and felt that the smaller classes allowed for better discussion and more in-depth understanding of material. The researchers cited parents' pleasure with students' increased motivation, relations with teachers, and academic performance. Counselors and department chairs cited greater student and teacher interaction, as well. Whita's study also reported that those teachers in the experimental group evidenced more
innovative pedagogy as compared to teachers in the traditional structure (Whitla, et al., 1992).

One of the more recent studies regarding teaching behavior and block scheduling was conducted in six Wyoming high schools (Bryant, 1995). The study involved survey methodology. Bryant identified and compared the perceptions of students regarding frequency and quantity of teaching strategies used by teachers in block versus traditionally scheduled schools. Significant differences were identified for the block scheduled schools on four variables: 1) use of small groups; 2) student presentations in class; 3) use of technology to create projects; and 4) the average number of separate activities. Bryant concluded that according to the perceptions of students, "block schedules in high schools may foster the use of more student interactive instruction" (Bryant, 1995, p. 2). He cautions, however, that block scheduling should be considered as only one component of an overall plan for restructuring.

Buckman, King and Ryan (1995) described two Florida high schools engaged in block scheduling as a means to restructure their schools for improved student achievement. In this study, a modified school climate questionnaire based on the Effective School Battery by Gottfredson was administered to students and teachers at both high schools. Participants were asked to rate items relating to the impact of block scheduling on: 1) safety; 2) success; 3) involvement; 4) commitment; 5) interpersonal competency; and 6) satisfaction. Open-ended questions were also included to elicit positive and negative perceptions about block scheduling. Generally, teachers reported that they liked the additional time available for individual student assistance and the
ability to introduce, explore, and bring closure to a topic in a single class period. However, they also reported the need for more planning time and resources. The authors reported that the flexible schedule resulted in major differences in presentation and planning by teachers and a more active role of students in classroom activities. Increased teacher collegiality, cooperative learning, integrated curriculum, and multi-intelligence instruction have resulted from the scheduling, according to the authors. An additional benefit cited by the authors is the "sense of calm on the campus" which has developed as a result of the new scheduling (Buckman, King, & Ryan, 1995).

Munroe (1989) conducted a quasi-experimental study at Amphitheater High School in Arizona to examine teaching methodology in block scheduled schools. This study was also conducted using survey methodology. The study employed questionnaires of parents, students, and teachers. Monroe indicated that about twice as many teaching strategies were employed by block scheduled teachers as compared to teachers involved in a traditional schedule (Monroe, 1989).

A number of researchers have called for a broader array of teaching strategies in block schedules (Kramer, 1996; Meadows, 1995; O’Neil, 1995). Much of the anecdotal literature relating to block scheduled classrooms suggests that more non-lecture type activities must be included if students are to stay attentive during block-scheduled classes. Kramer (1996) notes that the anecdotal records of several studies have cited that students have difficulty sitting through a class consisting of essentially two lectures conducted in sequence, and that the lecture method alone worked less well in a longer block of time. However, the author points out that direct classroom observation and/or
student-performance data has not yet confirmed this conclusion, even though researchers have generally recommended placing additional emphasis on more participatory modes on instruction. Based on opinions of teachers, administrators, and students, it is appropriate to conclude, according to Kramer, that teachers will need to reduce their amount of lecturing to maintain students' interest under a block schedule.

Numerous journal articles may be found which extol the virtues of block scheduling. The May, 1995, issue of the NASSP Bulletin, for example, contained seven articles which touted the effects of block scheduling for a number of subject areas. Numerous books have been authored regarding different types of scheduling formats, and even action research projects have been conducted by teachers themselves. While these testimonies exist in large numbers, carefully designed studies employing direct observation are needed to obtain valid information on the impact of block scheduling.

Research on Teachers and Change at the High School Level

School restructuring efforts must necessarily address teaching practice. Recent reforms of the last decade have focused on developing world-class content standards which promote both core knowledge and application of skills. Educators of today's reform movement often comment that the new standards include not only what students should know, but also what they must be able to do in order to succeed in the 21st century. This recent wave of reform has shifted attention directly to the classroom, with a focus on both the actual content of instruction as well as the instructional approaches teachers may use to encourage and support enriched learning.
The New Role of Teachers

R. Evans discusses the current reform movement and its impact on teachers in his book entitled *The Human Side of School Change: Reform, Resistance, and the Real-Life Problems of Innovation* (1996). The new role of teacher, according to Evans, is one of coaching students who are active, questioning learners (Evans, 1996). "The changes sought from the new agenda are in and of themselves extraordinarily difficult. They redefine the very notion of what knowledge is," (Evans, 1996, p. 79). D. Cohen (1991) further describes the impact of reform on teachers in the following statement:

Teachers must not simply absorb a new "body" of knowledge [but also] a new way of thinking about knowledge and a new practice of acquiring it. They must cultivate strategies of problem solving ... They must learn to treat knowledge as something they construct, test, and explore, rather than as something they absorb and accumulate. [To accomplish all this] they must un-learn much of what they know (Cohen, 1991, p. 46).

Enacting reforms at the secondary level may be especially difficult, according to a number of researchers. Secondary teachers, according to Levine & Lezotte (1990), are much harder to convince to experiment with promising approaches such as cooperative learning or mastery learning than their counterparts in lower grades. Reaching agreement about the key skills and objectives to be stressed in instruction and testing is identified by Benore (1989) as key to carrying out any school-wide improvement effort at the higher grade levels. Other researchers have suggested that measuring the performance of secondary schools becomes more difficult, in large part due to the broader goals that are established for students (Arnn & Mangieri, 1988).
Foundations for Implementing and Sustaining Change

What are the elements which must be in place for teachers to enact and embrace change and for change to be sustained? Fullan & Stiegelbauer (1991) suggests first and foremost, teachers must find meaning in change.

If reforms are to be successful, individuals and groups must find meaning concerning what should change as well as how to go about it. Yet it is exceedingly difficult to resolve the problem of meaning when large numbers of people are involved...Successful innovations and reforms are usually clear after they work, not in advance (Fullan & Stiegelbauer, 1991, xi).

To find meaning, other researchers suggest that teachers must be directly involved in making change. The implementation of improved teaching practices must clearly involve teachers themselves. There is clear evidence that teachers should participate in decision making about matters which relate to teaching (Rosenholtz, 1989). "It is clear, that improved teaching - the key to improved student learning - cannot be mandated by top-down reforms" (Cawelti, 1995, p. 1).

Teachers must be made to feel secure in order to step into a new area of instructional practices. Schlechty (1992) suggests that the pace and press of school life intensifies the tendency among teachers to resist change. "Immediacy," according to Schlechty, "pervades school life" (1992, p. 91). Likewise, Evans (1992) suggests that the pressure of managing large numbers of students and having to accomplish vast amounts of material inclines teachers toward the "pragmatic rather than the theoretical and toward the short-term rather than the long-term" (Evans, 1992, p. 85). For teachers to embrace reform, "change agents must provide them with a strong basis of security ...
and both psychological and professional safety. Without this, change is unlikely, no matter how intensely people are pressured to alter their practice" (Evans, 1992, p. 86).

Fullan & Stiegelbauer (1991) suggest that intensive efforts sustained over several years are required for teachers to adapt in the physical, psychological, and attitudinal sense to restructuring efforts. Implementation over a series of years is required before teachers may come to "work naturally together in joint planning, observation of each other's practice, and seeking, testing, and revising teaching strategies on a continuous basis" (Fullan & Stiegelbauer, 1991, p. xiii). Two to three years are required, according to the authors, for implementation of most changes.

Sustaining change, once enacted, becomes an important element in school effectiveness. A variety of educational literature suggests that there must be leadership to enact and sustain change, but that leadership may vary according to a variety of school contexts (Cawelti, 1995; Evans, 1996).

Sustaining changes in instructional practice is an area of concern for educators. Creemers (1994) addressed this issue in his book chapter entitled, "Effective Instruction: An Empirical Basis for a Theory of Educational Effectiveness" (Creemers, 1994). Consistency, according to the researcher, is the key variable in implementing and sustaining any new instructional arrangement, curriculum or experimental program. He suggests that teachers must be given the time to adapt themselves, or to adapt the "model," if implementation is to be effective in the long term.

Another finding which has implications for sustaining school change emerged from the literature on effective schools. Virgilio, Teddie, and Oescher (1991) described
an "interactive feedback loop" where formal or informal socialization of teachers can affect teacher behavior, and ultimately, the implementation and ability to sustain any innovation. This socialization process was found to be ongoing in effective schools. The researchers further reported that the socialization process at effective schools tended to result in more uniform teacher behavior.

Virgilio, et al., also concluded that the socialization process for teachers can be enhanced when principals, or perhaps other instructional leaders such as department chairs, manage the "educational production functions" of the school. Management of these functions has a direct relationship to the integrity and fidelity of school change efforts, particularly in the context of the elementary level. Examples of these important educational production functions were, "allocating and protecting instructional time, coordinating time usage, allocating large blocks of times for reading and math instruction, and reducing interruptions" (Virgilio, Teddlie, & Oescher, 1991).

The need for leadership has been documented in numerous studies on successful implementation of school improvement strategies (Hallinger & Murphy, 1985; Heck, 1992; Heck & Marcoulides, 1990). However, as stated earlier, the leadership patterns may be different according to a number of context variables. Virgilio, et al. (1991) found that principals in secondary schools spent far less time in the role of instructional leader regardless of the school's effectiveness. Simply the size of many secondary schools may constrain a principal's direct influence and encourage a different communication pattern and pattern of leadership (Firestone & Herriott, 1982). Jarvis (1998) concludes that "greater faculty participation in decision making may be a

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characteristic of effective secondary schools" (Jarvis, 1998, p. 57). Teddlie (1994) suggests that secondary schools clearly have multiple academic leaders which may include department heads, team leaders, principals and assistant principals. These findings suggest the need for additional research, particularly at the junior and high school levels, to study the relationship of consistent teacher behaviors to varying school leadership arrangements and their impact on school effectiveness.

**Research on Teacher Effectiveness**

What are the effective teaching behaviors that contribute to student learning? Numerous studies have contributed to the research base in this area.

**Early Research on Effective Teaching Behaviors**

The early work of Rosenshine and Furst (1973) yielded important information regarding effective teaching behaviors. These researchers identified correlational studies which consistently revealed a positive relationship between student outcomes and teacher behavior across different investigators and settings. From their review of these studies, the authors were able to identify characteristics of effective teaching which most highly correlated with student learning. The Rosenshine and Furst review revealed that students learned best when the following characteristics were observed in teachers: clarity; variability in teaching methods, curricula and /or media; enthusiasm; task-orientation; indirectness (questioning rather than lecturing); frequent use of praise and frequent pupil interaction; student opportunity to learn the material; teacher use of structuring comments; and multiple levels of questions or cognitive discourse (as
opposed to heavy concentration at one level of discourse). Teacher criticism was found to have an adverse effect on student learning (Rosenshine & Furst, 1973).

The authors also noted that several other variables appeared to be effective in single studies but required further substantiation. These included: teacher redirection of student comments for reaction to other students; thoroughness in teaching (the extent to which the teacher corrects errors by repeating the entire task and testing the student to make sure he knows the answer); and the extent to which the teacher follows the specified lesson format (Rosenshine & Furst, 1973).

Flanders (1970) reviewed a large group of studies conducted on secondary-level classrooms. This review showed consistent significant positive correlations between teacher indirectness (questioning rather than lecturing) and student achievement. Flanders also noted that the strength of the relationships was related to student age and grade level. Secondary levels showed stronger relationships than did elementary level (Flanders, 1970).

Kounin's (1979) early research helped to identify the teachers who were most successful in managing classrooms. The research was later replicated by Brophy and Evertson (1974). These studies suggested that teachers who were "most successful" were: more alert in monitoring the classrooms and remaining aware of what was going on at all times (withitness); able to sustain one activity while doing something else at the same time (overlappingness); able to maintain continuity without unnecessary interruptions or confusion (smoothness); able to sustain proper lesson pacing and maintain group momentum; able to keep the group alert by creating suspense before
asking questions, by asking questions frequently, or by presenting novel material regularly; successful in holding students accountable for attention and learning (using verbal responses and carefully checking work of students); attempting to generate enthusiasm directly and often; and providing variety in work assignments and general classroom activities (Kounin, 1970).

Dunkin and Biddle (1974) added to the body of literature by examining major correlational studies which looked at teacher behavior and student learning gains. In addition, the authors examined studies that linked teacher behavior to certain affective variables such as student attitudes toward themselves as learners, towards the teacher or school (Dunkin & Biddle, 1974). The researchers noted some additional variables such as the importance of teacher expectations and the importance of the teacher's level of instruction. The authors concluded that the higher the teachers' "pitch" (level) of instruction, the higher the overall academic performance of the class as a whole. They also noted classroom management variables which were correlated with student learning. Finally, Dunkin and Biddle found that regardless of class size, teachers working with smaller groups of students tended to get better results. Their conclusions were similar to those of Rosenshine and Furst, but they also cautioned that many of the correlational studies reviewed had not been borne out by experimental studies (Dunkin & Biddle, 1974).

Good, Biddle & Brophy (1975) concluded that certain teacher behavior variables consistently correlated strongly enough with student outcomes to reach statistical significance. These studies had been conducted in various settings by
separate researchers. The authors thereby concluded that the teaching behaviors previously noted by Dunkin and Biddle (1974), were in fact related to student outcomes. The findings suggested that optimal teaching behaviors were adapted according to the context of instruction.

The reviews by Rosenshine and Furst (1973) as well as those by Dunkin and Biddle (1974) and Brophy and Evertson (1974) helped to identify a number of teaching behaviors which consistently correlated with student academic gains or positive student attitudes. Good, Biddle and Brophy concluded that teachers do in fact "make a difference" (Good, Biddle & Brophy, 1975).

Additional Research on Generic Instructional Strategies

Cawelti (1995), like Dunkin and Biddle (1974), concludes that research cannot and does not identify the right or best way to teach, nor does it suggest that certain instructional practices should always or should never be used. But research can illuminate which instructional strategies are most likely to achieve desired results, with which kinds of learners, and under what conditions (Cawelti, 1995).

Goodlad (1984) was one of the first researchers to describe the narrow range of classroom teaching strategies found in most schools. Lecture, or frontal teaching method, has been the most widely used strategy, particularly in the high school setting. Goodlad found that the variety in teaching methods declined as students progressed into higher grade levels. Sirotnik (1983) also found that in the typical high school, the ratio of teacher to student talk was three to one, with lecture strategy accounting for 25
percent of classroom time. Sirotnik concluded that a wider variety of instructional strategies were needed to enhance student learning.

Recent research has attempted to examine the wider array of instructional strategies and practices which may positively impact on student achievement. Cawelti cautions, however, that no one approach is a panacea, and that educators must "carefully examine, select and use combinations of teaching practices that together increase the probability of helping students learn, knowing that these practices may not work in all classrooms at all times" (Cawelti, 1995, p. 4).

Walberg (1995) lists several generic practices gathered from research findings on effective teaching. These research-based strategies are applicable to a variety of subjects and grade levels. Walberg reviewed several hundred investigations of educational practices, ranging from studies of U.S. elementary and secondary students to foreign investigations conducted in Japan and European countries. He identified the following as critical elements of effective teaching: 1) aligned time-on-task; 2) use of cooperative learning; 3) promotion of parental involvement; 4) grading homework; 5) use of direct teaching; 6) use of advanced organizers; 7) teaching of learning strategies; 8) tutoring; 9) mastery learning; and 10) adaptive education. Taken together, the research on these generic strategies show "powerful and consistent effects for students in widely varying circumstances" (Walberg, 1995, p. 7). While all of the practices contain a strong research base, those most pertinent to this study are elaborated upon here.
Aligned Time-on-Task

Of those identified strategies, Walberg (1995) found that time-on-task was a critically important factor in effective teaching and student learning. According to Walberg, more than 130 studies support the fairly obvious concept that the more students study and spend time on actively focused educational goals, the more they learn (Anderson & Walberg, 1994; Fredrick, 1990; Fredrick & Walberg, 1980; Walberg & Fredrick, 1992). The idea of "time-on-task" is perhaps the most consistent finding in all of educational research (Walberg, 1995). However, more recently, researchers have acknowledged that time-on-task must be combined with curricular focus. Effective classroom management, together with such focus, may directly increase students' study time and as a result, student achievement (Walberg, 1995).

Cusick had initially studied the issue of time-on-task (Cusick, 1973). In an observational study entitled Inside High School: The Students' World, Cusick reported that teachers spent an average of 200 minutes a day in "maintenance activities" as opposed to teaching. This was a conservative estimate, according to Cusick, which did not include time spent on disciplinary problems, assemblies, fire drills, special events, and other activities. Literature by Stallings (1980) and Kline (1995) has also confirmed the importance of time-on-task.

In a recent study, Meadows (1995) examined the engagement rate of students during block scheduled time in four Maryland high schools. This is one of the few studies which has addressed the issue of time-on-task in block scheduled classrooms. Meadows concluded that only two percent of the teachers surveyed reported problems...
with student attentiveness and interest under the block schedule. Almost 50% reported fewer problems than they had with traditional classes, while 25% reported no change (Meadows, 1995).

- Graded Homework

Overall, research has shown that students learn more when they do homework that is graded, commented upon by the teacher, and discussed by their teachers. Homework has been found to be particularly effective in the high school (Paschal, Weinstein, & Walberg, 1984). Numerous studies have attempted to assess the impact of homework assigned by teachers on students’ learning and achievement (Paschal, Weinstein & Walberg, 1984; Walberg, 1984, 1994). The Paschal, et al., studies found that the effects of homework on student achievement almost tripled when teachers took time to grade homework, make corrections, and add specific comments on ways that students could improve or solve problems, either individually or in groups.

Other studies have found varying effects of homework on achievement, from negative correlations to significant positive correlations. Cooper (1989) conducted a meta-analysis of approximately 120 empirical studies concerning homework and the "ingredients" of successful homework assignments. Two basic types of studies were examined by Cooper to help answer the question of whether homework is a factor in improving students' achievement. First, the researcher analyzed those studies that compared achievement of students given homework to those given no homework. In this type of analysis, the author found that the average high school student in a class completing homework outperformed 75% of the students in "no-homework classes." In
junior high school, the effect size was half this magnitude, while homework resulted in very little effect on achievement in the elementary grades. An additional review was conducted to examine the correlation of amount of time students spent on homework with achievement. The majority of the studies (43) indicated that students who did more homework exhibited better achievement on test scores or class grades. Only seven studies indicated the opposite finding (Cooper, 1989).

- **Direct Teaching**

  Direct teaching has also been identified as a teaching strategy which may lead to improved student achievement (Brophy & Good, 1986; Gage & Needles, 1989; Wang, Haertel, & Walberg, 1993). Six basic functions of this approach included: 1) daily review, homework check, and re-teaching; 2) presentation of new content and skills in small steps; 3) guided student practice with close teacher monitoring; 4) corrective feedback and instructional reinforcement; 5) independent practice through seat work and homework, with a 90% success rate; and 6) weekly and monthly reviews.

  Many studies suggested that the use of direct teaching could be effective in promoting student learning when the instruction followed systematic steps. "Done well, it can yield consistent and substantial, although perhaps not the very best results," according to Walberg (1995, p. 12). However, the whole class teaching approach may not allow the needs of all learners to be met.

- **Use of Advanced Organizers**

  Use of advanced organizers has been the focus of more than a dozen studies (Walberg, 1995). The research suggests that when teachers show students a relationship
between past learning and present learning, student acquisition of knowledge and skills increases in depth and breadth (Walker, 1987; Weinert, 1989). Advanced organizers assist students in focusing on key ideas by enabling them to anticipate important points of the lesson. The organizers provide a mental road map of "what has been accomplished, where students are presently, and where they are going" (Walberg, 1995, p. 13).

- **Teaching of Learning Strategies**

  Teaching of learning strategies has been confirmed as an important teaching strategy by numerous researchers (Haller, Child, & Walberg, 1988; Palinscar & Brown, 1984). Research in this area identified three important phases of teaching with regard to learning strategies: "1) modeling, in which teachers exhibit the desired behavior; 2) guided practice, in which students perform with help of the teacher; and 3) application, in which students act independently of the teachers" (Walberg, 1995, p. 14).

- **Mastery Learning**

  More than 50 studies have shown the benefits of mastery learning for students (Bloom, 1988; Guskey, 1990; Kulik, Kulik, & Bangert-Drowns, 1990). Defined as the "careful sequencing, monitoring, and control of the learning process," (Walberg, 1995, p. 16) mastery learning is viewed as more beneficial than direct instruction, suiting instruction to small groups and individuals. Direct instruction, on the other hand, gears instruction to the average class member, making it too difficult for some and too easy for other students, according to the authors. A key to a successful mastery learning
approach is continuous assessment, continuous reinforcement and feedback, while constantly engaging students in lessons (Walberg, 1995).

- **Adaptive Education**

  Employing a variety of instructional techniques to adapt lessons to individuals and small groups has also been shown to raise student achievement, according to numerous studies (Wang, 1992; Wang & Zoller, 1990). This integrated-diagnostic process involves tutoring, mastery and cooperative learning, and adapting for learning styles into a classroom management system suited for individual and small group instruction. Adaptive teaching requires that implementation steps be carefully planned and timed, and that tasks be delegated to aides and students.

  Additional work in identifying effective instructional strategies has been done by Kline (1995). Kline identified a variety of strategies which have emerged from recent reform efforts in the United States. Cutting across content areas and even grade levels, he suggests that these strategies are "as much about attitude and general approach as about specific pedagogical techniques and classroom application" (1995, p. 21). While some of the identified strategies mirrored those found by Walberg, additional research-based practices were identified. Kline's "meta-review" of the literature suggests that the most effective instructional approaches tend to be inclusive instead of exclusive and that they work best in combination with other approaches and ideas.

- **Cooperative Grouping and Collaborative Learning**

  Cooperative grouping and collaborative learning have been identified by numerous researchers as highly important to effective teaching and student learning.
(Herrman, 1989; Johnson & Johnson, 1990; Creemers, 1994). The effects of collaborative learning were found for all levels of students and in specific areas of instruction. A wealth of research supports the idea that consistent use of this technique improves students' academic performance and helps them become more caring (Slavin, 1986). In collaborative groups, teachers are best able to match instruction to specific student needs. The research also suggests that the one-to-one nature of such situations allows students to receive immediate feedback, clarification and extension of learning in a non-threatening relationship.

- Reality-based Learning

An additional strategy often found in the literature on effective teaching is that of using a reality-based learning approach. Kline defines this approach as the "teachers' understanding of how to build on and extend the knowledge and skills [that] children bring to school, rather than attempting to force the children to fit existing school practices" (Kline, 1995, p. 26). The use of authentic purposes, materials and content in any subject will help learners experience meaningfulness and satisfaction (Marzano, 1992; Marzano, Brant, Hughes, Jones, Presseisen, Rankin & Suhor, 1988). The value of reality-based learning has been particularly affirmed in the language arts areas of reading, writing, and literature (Kline, 1995).

- Thematic, Interdisciplinary Teaching

A variety of research also suggests that the incorporation of thematic, interdisciplinary teaching has helped students to make connections between subjects and to discover relationships between them. Interdisciplinary projects have been shown to
promote diverse thinking strategies and to promote application, analytical observation, critical thinking, comparison and contrast, evaluation, and perspective and judgment (Marzano, et al., 1988; Jacobs, 1991).

• Active Involvement of Students

Involving students actively in the learning process has consistently shown positive impact on student achievement (Bruno, 1982). The research suggests that a majority of students learn best when provided manipulative, hands-on materials (Dunn & Dunn, 1992). The research has also suggested that teachers should allow students to construct their own meaning, understandings and create their own solutions to problems. The range of active learning experiences should include games, simulations, role playing, creative dramatics, pantomime, and contests that show integration of concepts. In addition, teaching strategies should allow students to relate to the world outside of school through activities such as drawing and storytelling. Use of tactile materials and activities should include math manipulatives and science equipment for laboratory experiences (NCTM, 1989; Brown, 1990; Bruno, 1982; Cohen, 1992; Hartshorn & Boren, 1990).

• Teaching of Learning Styles

Research by Andrews (1990), Carbo (1987), Dunn and Dunn (1992), and Gardner and Hatch (1989), has substantiated that teaching academic underachievers in ways that complement their learning styles has significantly increased their standardized test scores in reading and across subject areas.
• Active Modeling by Teachers

Research has also shown that teachers should actively model behaviors they would have their students assimilate and practice. The research in this area suggests that teachers who share thoughts about how they came to conclusions or completed an assignment help students become aware of their own thinking strategies (Costa & Marzano, 1987; Marzano, et al., 1988; Rosenshine & Meister, 1992; Vygotsky, 1978). Costa & Marzano (1987) suggest that teachers create classrooms of cognition by using precise vocabulary, posing critical and interpretive questions, providing data in lieu of solutions, giving directions, probing for specificity, modeling metacognitive processes, and analyzing the logic of language.

• Teaching for Critical Thinking

A variety of research studies have suggested that teachers must assist students to become critical thinkers in order to explore the fullest dimension of thought (Rosenshine & Meister, 1992; Bransford, 1986; Carr, 1988). This research suggests that effective teachers must provide an opportunity for students to become critical thinkers and problem solvers while engaging them in learning experiences.

• Additional Characteristics of Effective Teaching

Other characteristics often cited in effective teaching literature involve the incorporation of multi-cultural teaching approaches, incorporation of accelerated learning strategies, promoting home and school partnerships, and use of multiple, authentic assessment strategies (Kline, 1995).
Content-Specific Research on Effective Teaching Behaviors

A variety of research on effective instructional practices has been reported according to specific subject areas. A brief review of research relating to the four core subject areas is provided. These areas formed the basis of classroom observations for this study.

D'Ambrosio, Johnson and Hobbs (1995) identified the following mathematics strategies that promote achievement after reviewing various research studies on the subject:

- Relating mathematics to the real-world experiences of young people;
- Writing and talking about mathematics;
- Working cooperatively to solve problems;
- Exploring mathematics concepts with hands-on materials;
- Using calculators and computers;
- Constructing one's own mathematical knowledge;
- Encouraging exploration and investigation;
- Using students' prior knowledge;
- Integrating math with other content areas; and
- Use of technology (D'Ambrosio, et al., 1995).

Strategies for improving achievement in language arts were described by Squire (1999) following a wide review of the available literature. Squire identified the following important elements in language arts teaching:
Use of extensive reading, involving a wide variety of materials, both in and out of school;

Use of interactive learning where children interact during instruction and are not passive receivers of knowledge;

Enhancement of reading comprehension through extension of background knowledge;

Providing instruction in strategic reading and writing, where students apply strategies such as summarizing, questioning, and interpreting;

Organizing instruction into broad, thematically based clusters of work to promote connections among activities;

Teaching critical reading and writing skills;

Using instruction which emphasizes discussion and analysis rather than rote memory;

Emphasis on the writing process;

Use of a balanced reading and writing approach;

Early intervention for students experiencing difficulty;

Exposure to a range of literature; and

Appropriate assessment that focuses on what is taught and on the modes of instruction used in the curriculum (Squire, 1999).

In addition, D'Ambrosio, et al. (1995) provided an assessment of effective strategies which are specific to the area of writing. The author identified the following key strategies for effective teaching of writing: using writing in all subject areas;
addressing meaningful topics for assignments; showing good examples of writing; and using peer reviews. In addition, the author suggests that teachers must teach students how to write, giving specific focus to writing strategies such as flashback techniques or foreshadowing, for example (D'Ambrosio, et al., 1995).

Gabel (1999) asserts that much of the science education research of the past decade shows that students at all levels possess many inaccurate concepts of scientific knowledge. The author suggests that too much time is spent on content coverage and that students have little time to actually think about what they are learning. Rarely, according to Gabel, do students get to experience learning. In general, the science literature suggests that effective techniques have one focus -- that of "keeping students attention focused on learning" (Gabel, 1999, p. 156).

Citing works of numerous researchers, Gabel suggests that the following are critical elements of successful instruction in science:

- Use of the learning cycle approach -- exploration, invention, and application;
- Use of collaborative and cooperative learning for classroom and laboratory instruction to increase student achievement, attitudes, and on-task behavior;
- Use of analogies to aid development of conceptual understanding of students;
- Use of appropriate wait time, approximately three to seven seconds, to allow students to respond with more thoughtful answers;
- Use of concept mapping, allowing student-generated and teacher-generated maps;
- Use of computer simulations and microcomputer-based laboratories;
Use of systemic approaches in problem solving which include real-life situations in which students apply skills and concepts; and

Employing a science-technology-society approach in teaching (Gabel, 1999).

Gable asserts that all of the strategies have been empirically shown to improve students' attitudes and academic achievement in science.

Shaver (1999) identified empirically based strategies which have been found to be effective in social studies instruction. Among these strategies are the following:

Development of "thoughtful" classrooms, with a focus on higher-order thinking skills;

Teaching with a jurisprudential approach, where students gain skills in analysis of contemporary issues;

Teaching critical thinking skills and strategies;

Supporting concept development through appropriate definitions, examples and non-examples, with attention to students' prior knowledge;

Use of effective questioning;

Use of computer technology;

Incorporation of "the community" as part of the social studies curriculum; and

Using constructivist teaching, where students are actively constructing their knowledge, with the teacher as a guide or coach (Shaver, 1999).

**The Relationship of Teacher Effectiveness and School Effectiveness Research**

How do these teaching behaviors impact overall school effectiveness?

Numerous researchers are now calling for both school and classroom effects to be
studied together, not in isolation of one another (Teddlie & Stringfield, 1993). These two previously distinct areas of research are important since they interact with one another to create overall school climate, which in turn affects how teachers are "socialized" into established patterns of teacher behavior (Teddlie & Stringfield, 1993).

Teddlie and Stringfield (1993) conclude that when "school effects studies are properly designed, consistent patterns of differences in both mean scores and variances of teaching behaviors in schools will be found" (Teddlie & Stringfield, 1993, p. 189). Both the variances in the patterns of individual teachers' behaviors, in addition to their central tendencies, are important in understanding teacher- and school-level processes.

Creemers (1994) suggests that components at both classroom and school level influence the quality of instruction as well as the time and the opportunity for students to learn. Creemers identified teaching behavior as one of three components which are necessary for educational effectiveness, along with curricula and student grouping. Effective teaching behaviors are positively related to student achievement (Creemers, 1991). By appropriate grouping, teachers can increase the effectiveness of their instruction by adapting to differing characteristics of students. Similarly, carefully designed and implemented curricula are important to enhancing educational effectiveness. The degree of consistency in these three areas, the main components of instruction, can cause a synergistic effect which may lead to successful instruction and overall school effectiveness, according to Creemers.

Most of the time improving education at classroom level starts with a teacher making a decision about grouping procedures and the choice and use of curricular materials. This is where effective instruction at classroom level starts.
Effective instruction cannot develop from scratch in an empty space. Effective instruction starts with teachers in classrooms (Creemers, 1994, p. 201).

Nine characteristics of effective teaching behaviors have been identified by Creemers (1994) based upon combined research on teacher and school effectiveness. They include: 1) management of the classroom in order to create a situation where learning can take place; 2) provision of properly organized homework, with supervision and evaluation of the work; 3) holding high expectation, both at the teacher and school levels, since expectations have the potential to influence student outcome as they also affect teacher behavior; 4) clear goal setting, including a restricted set of goals, with emphasis on basic skills and cognitive learning and transfer; 5) structuring the content, including the ordering of content, using advance organizers, and activating students' prior knowledge; 6) clarity of presentation; 7) questioning by means of low and higher order questions; 8) immediate exercise after presentation, including questioning to check for understanding; and 9) evaluating whether the goals are obtained by testing, providing feedback, and corrective instruction (Creemers, 1994). Creemers' conclusions are similar to those of Kline and Walberg previously mentioned in this review.

While limited, school effectiveness research at the secondary level has provided additional information which must be considered in understanding the relationship of teacher and school effects. In one such study, Hallinger and Murphy (1985) analyzed 18 "successful" high schools in California. They determined that: 1) having a set of standards within a rich curriculum; 2) students' having a feeling that there was a reason
to go to school; 3) having a sense of community; and 4) having resiliency in being able
to bounce back from a variety of crises are correlates of unusual effectiveness at the
secondary level. Likewise, Firestone and Wilson (1989) suggested that high schools
showing unusual effectiveness demonstrated a high degree of articulation within the
curriculum and a sense of relevancy within their program of studies, including quality
counseling programs and career-focused instruction and counseling.

Levine, Levine and Eubanks (1989) provided insights into several urban high
schools believed to be unusually effective. They concluded that "concentration on
improving comprehension and other fundamental learning skills, and provision for
alternative types of learning arrangements and experiences, among others, made the
schools unusually effective." Likewise, Levine, Levine and Eubanks (1984) described
unusually effective inner-city schools and attributed their success to their "common
emphasis on higher order cognitive development," along with other related
characteristics.

Levine and Lezotte (1990) have indicated that research on "effective" teaching
practices and the relationship to effective schools remains weak. The authors suggest
that such practices are "difficult to assess" and that researchers have encountered
"perplexing difficulties... in trying to reach generalizable conclusions regarding optimal
use of reinforcement, lesson sequencing, wait time after questions, and other
techniques" (Levine & Lezotte, 1990, p. 30). Additionally, Levine and Lezotte suggest
that much of the effective schools research has dealt primarily with the elementary level
and that educators must be cautioned against assuming that the conclusions of these
studies are completely applicable to secondary schools. However, they concluded that it is reasonable to assume that "high expectations, productive climate, outstanding leadership, effective instructional arrangements, and other correlates are as important at the secondary level as at elementary," and indeed may be more important and more difficult to attain (Levine & Lezotte, 1990, p.63). They further suggest that faculty agreement on what skills and objectives should be emphasized and tested in each grade and subject is critically important in improving junior and senior high schools.

Summary

This chapter has provided a review of literature in the areas of high school scheduling practices, teachers and change, research on effective teaching, and the relationship between teacher and school effectiveness research. The review began with an introduction to the issue of time as it relates to both teacher effectiveness and student learning. A historical review was provided on scheduling practices in the United States, while new efforts to use scheduling as a means to restructure high schools were also explored. Specific studies related to block scheduling and teaching behavior were reviewed. A limited number of studies were found, and only one study involved direct classroom observation with a control group design. While the Whitla, et al. (1992) study generated interesting results, it lacked external validity since it studied a temporary, researcher constructed manipulation. The majority of existing research has been gathered via survey methodology. Most available research regarding the impact of block scheduling on teaching behavior is anecdotal in nature, which underscores the importance of this study. Further empirical inquiry is needed.
Section Two explored the nature of change and provided a limited discussion of the new role of teachers in this most recent era of reform. An important component of this section relates to the research which has identified critical foundation elements for implementing and sustaining educational innovations. This chapter also examined research by Virgilio, Teddlie, and Oescher (1991) which explored socialization effects which may lead to more effective teaching and effective schools. A brief discussion regarding the importance of leadership and the various contexts which affect leadership patterns concludes the section. Leadership at the secondary level was found to vary from that found in most elementary programs, and is often divested among department leaders and others.

Section Three established the research base for characteristics of effective teaching which were assessed in this study. The review begins with the early research conducted by such authors and Rosenshine and Furst (1973) and Brophy and Evertson (1974). These researchers identified teacher behaviors which consistently were found to positively impact student outcomes across different settings and investigations. The work of Rosenshine and Furst established the foundation for items included on one of the observation instruments used for this study. Additional studies were discussed which have identified effective generic teaching behaviors. Time-on-task, or student engagement rate, was identified as one of the most frequently cited variables in research on teaching behaviors. Ability to keep students on-task, when coupled with curricular focus, is an important teacher behavior leading to improved student outcomes. Finally, a discussion on content-specific effective teaching behaviors was provided. This
section of the review identified research-based effective teaching behaviors in the four core content areas of English/language arts, science, social studies and mathematics. These areas were the focus of teacher observations during this study. Section Four describes the growing relationship of teacher effectiveness and school effectiveness research.

There is clearly a need for further empirical research to explore the relationship of block scheduling and effective teaching behaviors, as well as student engagement rates, in the secondary schools. Chapter Three describes the research methodology for this study.
CHAPTER THREE
METHODOLOGY

Introduction

Amid the myriad of school reform efforts, the restructuring of time during the school day has begun to emerge as a pivotal element in discussions regarding classroom instruction (Oakes, 1995). Some researchers suggest that concentrated blocks of instructional time should result in a variety of benefits for both students and teachers, including improved instructional practices, greater student engagement rates or time-on-task, improved school climate, and increased academic achievement, among others (Canady & Rettig, 1995; Kramer, 1996). Others have suggested that time for learning and opportunity to learn may be viewed as an important variable, a mediating construct, which may guide the development of effective instruction (Creemers, 1992).

Changing teachers' classroom behavior toward use of more active, learner engaged methodology is essential if increased student achievement is desired (Marzano, et al., 1988; Carbo, 1987; Kline, 1995; Bruno, 1982; Jacobs, 1991). Proponents of 4 X 4 block scheduling suggest that this scheduling approach best allows for incorporation of more effective teaching methodologies, including small group activities, interdisciplinary teaching, and other innovative student work activities. However, little empirical research has been conducted in order to examine teacher behaviors or student engagement rate in the 4 X 4 block scheduled classroom over various years of implementation, or when compared to traditionally scheduled classrooms. Much of the available literature involves survey methodology, while other literature is largely
anecdotal. This chapter describes the methodology which was used in the two phases of this causal-comparative study. A mixed model, ex-post facto design was employed to explore the hypotheses proposed by the researcher. The chapter provides an overview of the research hypotheses, the design of the study, and then describes separately the sampling procedures, instrumentation and psychometric properties, data analyses and procedures used in Phase I and Phase II of the study.

**Research Hypotheses**

The study examined the effect of extended learning time provided via the 4 X 4 block schedule on teacher behavior and student engagement rate or time-on-task, in high schools at various stages of implementation of the block scheduling, compared to traditionally scheduled high schools. Two hypotheses and one qualitative question were posed for the study, as illustrated in Figure 3.1.

<table>
<thead>
<tr>
<th>Two Dependent Variables:</th>
<th>One Independent Variable: Scheduling Type</th>
<th>Three Levels (Groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Group 1: Block Scheduling 3 + Years</td>
</tr>
<tr>
<td>1. Teaching Behavior</td>
<td>More effective than Group 2 or Group 3</td>
<td>More effective than Group 3, but Less than Group 1</td>
</tr>
<tr>
<td>2. Student Engagement Rate or Time-on-Task (TOT)</td>
<td>Higher TOT than Group 2 or Group 3</td>
<td>Higher TOT than Group 3, but Less than Group 1</td>
</tr>
</tbody>
</table>

**Qualitative Question:**

What are the differing characteristics of block scheduled schools that have been differentially successful in creating more effective classroom environments?

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**Figure 3.1 Hypotheses and Qualitative Question for the Study**

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Hypothesis 1:

Mean scores on effective teaching behaviors, as measured by the Classroom Observation Instrument (COI), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.

Sub-Hypothesis 1 (A):

Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers that have been on block scheduling for three or more years than teachers in block scheduling for two years.

Sub-Hypothesis 1 (B):

Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers that have been on block scheduling for three or more years than teachers in traditionally scheduled schools.

Sub-Hypothesis 1(C):

Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers on block scheduling for two years than teachers in traditionally schools.

A second hypothesis was formulated in regard to student time-on-task. The following hypothesis was established:

Hypothesis 2:

Mean scores for on-task student engagement rate, as measured by the modified Stallings' Classroom Snapshot (CS), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.
Sub-Hypothesis 2 (A):
Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers that have been on block scheduling for three or more years than for teachers in block scheduling for two years.

Sub-Hypothesis 2 (B):
Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers that have been on block scheduling for three or more years than for teachers in traditionally scheduled schools.

Sub-Hypothesis 2 (C):
Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers that have been on block scheduling for two years than for teachers in traditionally scheduled schools.

In addition, the following qualitative question was examined:

Question 1:
What are the differing characteristics of block scheduled schools that have been differentially successful in creating more effective classroom environments?

Design of the Study

Researchers such as Good and Weinstein (1986) have suggested that those involved in studies of education "need to examine school and classroom processes simultaneously, identifying relationships that facilitate or hinder goals at each level" (Good & Weinstein, 1986, p. 9). The current study was designed to examine both classroom teaching and school-level processes, events or decisions which may have
influenced the implementation of block scheduling and the teaching behaviors used within the restructured classroom.

A causal-comparative research design was used to examine the two hypotheses and qualitative question posed for this study. The study employed a matched groups, ex-post facto design involving 21 public high schools located throughout Louisiana. All selected high schools contained a configuration of grades 9 - 12. The ex-post facto design was relevant since the treatment (block scheduling) was naturally occurring. The causal-comparative design allowed the researcher to study the relationship of block scheduling to teachers' behaviors and students' time-on-task since manipulation of these conditions was not possible. The qualitative component of the study was exploratory in nature.

The researcher elected to design a mixed methods study (Tashakkori & Teddlie, 1998) in which both qualitative and quantitative inquiry, data collection, operations and analysis were employed. Teddlie (1994) has suggested that combining qualitative and quantitative methods in exploring teaching behaviors and contextual issues such as school or classroom resources can improve process-product research. Denzin (1978) also suggested that multiple methods of observations are important in exploring rival causal factors. Data triangulation, investigator triangulation, and methodological triangulation were used in the study (Patton, 1990).

As the previous review of literature has revealed, there is a lack of empirical evidence regarding the impact of block scheduling on teaching behaviors and student
engagement rate. It was felt that the combined methodological approach would best address the primary purpose of this inquiry.

Block scheduling served as the independent variable in the study. Three levels (groups of schools) of the independent variable were established. Group 1 consisted of teachers in seven high schools involved with block scheduling for three or more years. Group 2 consisted of teachers in seven high schools involved with block scheduling for two years, while Group 3 consisted of teachers in seven high schools which had maintained a traditional six- or seven-period day schedule.

Two dependent variables were explored. The dependent variables for the study were identified as teaching behaviors and student engagement rate or time-on-task.

The study was conducted in two phases during the 1998-99 school year. Phase I consisted of site visits to the 21 selected public schools in Louisiana. The research team conducted on-site observations of classroom teachers from November through February. Classroom observations focused on teachers' behaviors and students' time-on-task across the three established groups.

Phase II of the study consisted of a qualitative case study of two schools involved in block scheduling for three or more years. The followup visits to the selected schools were conducted in early May 1999. The qualitative study involved interviews and focus groups of teachers who were observed during Phase I of the study, as well as teachers selected from among the core curriculum department chairs and other faculty. Field notes and archival data were also collected and analyzed. A brief demographic survey of teachers was also collected and analyzed.
Confidentiality issues were carefully considered and protection of all teachers and schools involved was a major consideration throughout both phases of the study. The overall research design is presented in Figure 3.2.

### Overall Research Design of the Mixed Model Study

<table>
<thead>
<tr>
<th>Phase</th>
<th>Sample</th>
<th>Data Gathering</th>
<th>Instrumentation</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>Teachers in 3 Matched Groups of Schools</td>
<td>Primarily Quantitative through</td>
<td>Classroom Observation Instrument (COI)</td>
<td>Primarily Quantitative through</td>
</tr>
<tr>
<td></td>
<td>250 Total Teachers</td>
<td>Direct Classroom Observation</td>
<td>+ Modified Stallings' Time-on-Task (CS)</td>
<td>Descriptive Statistics</td>
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<tr>
<td></td>
<td>21 Schools Altogether</td>
<td></td>
<td>+ School Climate Survey</td>
<td>MANOVA</td>
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<td>ANOVA</td>
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<td>Post Hoc Analysis</td>
</tr>
<tr>
<td>Phase II</td>
<td>Case Study of 2 Schools</td>
<td>Primarily Qualitative through</td>
<td>Interview Guide +</td>
<td>Primarily Qualitative through</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Focus Groups + Interviews</td>
<td>+ Demographic Survey +</td>
<td>Descriptive Statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+ Field Notes +</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>+ Archival Data</td>
<td></td>
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</tr>
</tbody>
</table>

**Figure 3.2 Overall Research Design of the Mixed Model Study**

### Methodology for Phase I

**Sampling Strategies, Phase I**

Two different sampling strategies were used in Phase I. The initial sample of schools selected for Phase I involved a purposeful, non-random, matched group
sampling strategy. A second level of sampling was conducted to identify teachers to be observed within the matched groups of schools. A stratified, random sampling strategy was used for selection of core area English/language arts, mathematics, science and social studies teachers within the 21 schools.

- Initial Sampling, Phase I

The initial sample of the 21 schools was drawn from among the 1,445 public schools within Louisiana (Louisiana Department of Education (LDE), Annual Financial and Statistical Report, 1996-97). The schools were selected from among the 64 parish school systems and two city school systems in the state. The sample was limited to the approximately 300 secondary-level schools that included a configuration of Grades 9 - 12. The sample was further limited to approximately 198 high schools whose campuses contained only the grades 9 - 12 configuration. Approximately 10,050 teachers were employed within these secondary-level Louisiana schools. Schools employing an alternative schedule which varied from the traditional six- or seven-period day were identified from archival data provided by the LDE's Office of Student and School Performance (LDE, 1998) and the Student Information System (SIS).

Three levels or groups of schools were formed in the sample selection and matching process. Purposeful, non-random, matched selection was used in initial sample selection due to the already existing nature of the treatment condition (4 X 4 block scheduling) under study. The three groups each contained seven schools based upon their history of school scheduling practices, per LDE data.
Sample selection began by identifying those schools within the state that were engaged in some form of alternative scheduling. Historical data from the LDE dating back to the 1995-96 school year were also obtained in order to determine the length of time that schools had been engaged in alternative scheduling approaches.

LDE data revealed that 53 Louisiana public high schools were engaged in some form of alternative scheduling during the 1997-98 school year. The data revealed that the 4 X 4 scheduling approach was the most prevalent alternative schedule used within the state's public high schools. Of the 53 schools, a total of 44 schools were employing the 4 X 4 scheduling approach. These 44 schools formed the basis of the accessible population for Groups 1 and 2 of the study.

A further breakdown according to the number of years each school had been engaged in block scheduling revealed an accessible population of 18 schools for Group 1 and 26 schools for Group 2. The remaining high schools in the state (which contained the grades 9 - 12 only) formed the accessible population for the Group 3 sample. The two groups of block scheduled schools were matched first, with Group 3, traditionally scheduled schools, matched back to Groups 1 and 2.

In addition to block scheduling, the groups were further matched according to critical characteristics or specific context variables in order to better control for extraneous variables. The matching further ensured that the final sample would be representative of the accessible population and ultimately the target population of all Louisiana high schools. School enrollment size, socio-economic status based on percentage of students qualifying for free and reduced lunch, and community type were
used in matching the groups. Demographic data from the LDE Student Information System and the 1997-98 School and District Summary Progress Profiles Report (LDE, 1997-98) provided relevant information for matching purposes.

**School Enrollment Size**

School enrollment among the 44 block scheduled schools varied widely. Data from the LDE indicated that 1997-98 school enrollment ranged from approximately 80 to 1916 students. As a result, the mean school enrollment size and standard deviation were calculated for all 44 of the Louisiana public high schools involved in the 4 X 4 block scheduling. Schools with a student population of more than one standard deviation from the mean were excluded from the possible sample. After rounding, schools with approximately 400 to 1450 students remained in the available sample of block scheduled schools. After adjustment for school enrollment size, 15 schools remained for possible selection in Group 1, while 12 schools remained for possible selection in Group 2.

**Socio-Economic Status (SES)**

To the extent possible, the remaining schools were further matched on SES. The percentage of students qualifying for free and reduced school lunch was used as a measure of socio-economic status for each school. Data provided by the LDE Student Information System were used in this process. Because the data from one large urban school district appeared questionable and could not be resolved, schools from the district were excluded from the accessible sample of schools. After the elimination of
schools from this district, 10 schools remained in Group 1 and 12 schools remained in Group 2.

The remaining schools within the two groups were ranked from highest to lowest percentage on students qualifying for free and reduced school lunch. To adjust for the best possible match within the groups, the Group 1 school with the highest percentage of students qualifying for free and reduced school lunch and the Group 2 school with the lowest percentage of students qualifying for free and reduced school lunch were eliminated due to the extreme rankings.

**Community Type**

To the extent possible, groups were next matched according to community type. Individual schools were initially identified according to seven locale codes assigned by the U.S. Department of Commerce, Bureau of the Census, and made available by the LDE (LDE, Student Information System, 1998-99). These data are part of the Common Core of Data reported by each state and they are used nation wide. The classification codes provide a description of the school based upon proximity to populous areas, and include the following seven types of classifications:

1. Large City - a city having a population greater than or equal to 250,000;
2. Mid-size City - a city having a population of 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; and
7. Rural - any incorporated place or non-place territory designated as rural by the Census Bureau.

To accommodate the small sample size, the following classification schema was used in this study for School Community Type:

Urban School - a school with a Census Bureau local code of 1 or 2;
Suburban School - a school with a Census Bureau local code of 3, 4, or 5; and
Rural School - a school with a Census Bureau locale code of 6 or 7.

Schools for Group 3 which served as a control group were selected based upon the same context variables of school enrollment, SES, and community type.

**Other Considerations in Sample Selection**

An additional school district with a block scheduled school was eliminated from the potential sample due to internal problems within the school district. Teachers at the high school which was initially selected engaged in a "walkout" prior to the school visitation. The district and school were replaced within the group by a school of comparable demographics.

- **Demographics of Final Matched Groups of Schools, Phase I**

  The final selection of the 21 schools represented 13 individual Louisiana school districts, comprising 19.7 percent of the state's total districts. Schools were located within the southern, north-central, eastern, and central parts of Louisiana.
Demographics for the three groups are contained in Table 3.1. SES for Group 1 ranged from 27% to 72% free and reduced lunch, with a mean of 41%; Group 2 SES ranged from 28% to 50% free and reduced lunch, with a mean of 40%; SES for Group 3 ranged from 23% to 51% free and reduced lunch, with a mean of 40%.

Student enrollment for Group 1 ranged from 602 to 1450 with a mean of 1011; Group 2 enrollment ranged from 537 to 1250 with a mean of 941; Group 3 enrollment ranged from 578 to 1297, with a mean of 971.

Group 1 included 2 urban, 2 suburban schools, and 3 rural schools; Group 2 was comprised of 2 urban, 3 suburban, and 2 rural schools; and Group 3 contained 2 urban, 2 suburban, and 3 rural schools.

In summary, a total of seven Group 1 schools were matched as closely as possible with seven Group 2 schools, based on school size, SES, and community type. A final selection of schools for Group 3 was made to closely resemble the demographics of the first two groups of block scheduled schools.

- Secondary Sampling, Phase I

A second level of sampling was conducted within Phase I. The purpose of the secondary sampling strategy was to identify teachers in grades 9 - 12 for observation within the 21 schools selected for the study. The selection of teachers within each school was limited to those teachers certified by the LDE for the secondary-level core content courses to which they were assigned for the 1998-99 school year. The sample excluded teachers on Temporary Teaching Assignments (TTA) and those who lacked
Table 3.1 Demographics of Final Matched Groups of Schools, Phase I

<table>
<thead>
<tr>
<th>School</th>
<th>School Size</th>
<th>% Free/Reduced Lunch</th>
<th>Community Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group 1 (Block Scheduling 3 or More Years)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monet</td>
<td>668</td>
<td>72</td>
<td>R</td>
</tr>
<tr>
<td>VanGogh</td>
<td>868</td>
<td>34</td>
<td>R</td>
</tr>
<tr>
<td>Cezanne</td>
<td>602</td>
<td>52</td>
<td>R</td>
</tr>
<tr>
<td>Picasso</td>
<td>1223</td>
<td>39</td>
<td>U</td>
</tr>
<tr>
<td>Degas</td>
<td>1227</td>
<td>32</td>
<td>S</td>
</tr>
<tr>
<td>Renoir</td>
<td>1041</td>
<td>27</td>
<td>U</td>
</tr>
<tr>
<td>Matisse</td>
<td>1450</td>
<td>34</td>
<td>S</td>
</tr>
<tr>
<td>MEAN</td>
<td>1011</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td><strong>Group 2 (Block Scheduling 2 Years)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saxon</td>
<td>935</td>
<td>28</td>
<td>S</td>
</tr>
<tr>
<td>Kipling</td>
<td>1045</td>
<td>45</td>
<td>U</td>
</tr>
<tr>
<td>Dickens</td>
<td>1133</td>
<td>32</td>
<td>S</td>
</tr>
<tr>
<td>Hemingway</td>
<td>1250</td>
<td>50</td>
<td>U</td>
</tr>
<tr>
<td>Anderson</td>
<td>659</td>
<td>48</td>
<td>R</td>
</tr>
<tr>
<td>Keats</td>
<td>1025</td>
<td>37</td>
<td>S</td>
</tr>
<tr>
<td>Twain</td>
<td>537</td>
<td>39</td>
<td>R</td>
</tr>
<tr>
<td>MEAN</td>
<td>941</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td><strong>Group 3 (Traditional Scheduling)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lilly</td>
<td>1053</td>
<td>44</td>
<td>R</td>
</tr>
<tr>
<td>Magnolia</td>
<td>1020</td>
<td>26</td>
<td>S</td>
</tr>
<tr>
<td>Lotus</td>
<td>1297</td>
<td>43</td>
<td>U</td>
</tr>
<tr>
<td>Violet</td>
<td>1166</td>
<td>47</td>
<td>R</td>
</tr>
<tr>
<td>Holly</td>
<td>578</td>
<td>49</td>
<td>R</td>
</tr>
<tr>
<td>Larkspur</td>
<td>728</td>
<td>23</td>
<td>S</td>
</tr>
<tr>
<td>Aster</td>
<td>955</td>
<td>45</td>
<td>U</td>
</tr>
<tr>
<td>MEAN</td>
<td>971</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

**Note.**  R = Rural; S = Suburban; U = Urban; % Free/reduced lunch used for socioeconomic status (SES).
full certification (Circular 665 teachers). The sample was further limited to those mathematics, science, social studies, and English/language arts teachers who had been at the school for at least one previous school year and were employed as full-time teachers.

Classroom schedules and class rosters were obtained from school principals or assistant principals prior to each school site visit. School level personnel were asked to eliminate from the potential pool of teachers any teacher not certified to teach the core content course to which they were assigned, and to eliminate those teachers who were new to the school during the 1998-99 school year. Data submitted to the researcher relating to the teachers' level of experience and certification were corroborated via phone conversations with each school principal or assistant principal.

A random sampling strategy was then used to select from among the available teachers at each school. Three teachers were selected in each content area, for a total of 12 teachers per site, with alternates selected randomly in case of absence or other extenuating circumstances.

A total of 250 individual teachers were observed during Phase I observations. In addition, two researchers conducted 13 joint observations in order to assess inter-rater reliability. The distribution of the observations among the groups and schools is noted in Table 3.2.

Demographics for the final sample were obtained from an ongoing study of school climate. The instrumentation is described in the following section. Teachers were asked to voluntarily complete a survey form which contained information on
Table 3.2  Observations by Group and School for Secondary Sampling, Phase I

<table>
<thead>
<tr>
<th>Group and School</th>
<th>Number of Teachers</th>
<th>Number of Observations Per School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1 (Block Scheduling 3 or More Years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monet</td>
<td>12</td>
<td>13*</td>
</tr>
<tr>
<td>Van Gogh</td>
<td>12</td>
<td>13*</td>
</tr>
<tr>
<td>Cezanne</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Picasso</td>
<td>12</td>
<td>13*</td>
</tr>
<tr>
<td>Degas</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Renoir</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Matisse</td>
<td>12</td>
<td>13*</td>
</tr>
<tr>
<td>TOTAL</td>
<td>84</td>
<td>88</td>
</tr>
</tbody>
</table>

Group 2 (Block Scheduling 2 Years)  

| Saxon                                 | 12               | 13*                               |
| Kipling                               | 12               | 12                                |
| Dickens                               | 13               | 14*                               |
| Hemingway                             | 12               | 13*                               |
| Anderson                              | 11               | 12*                               |
| Keats                                 | 12               | 13*                               |
| Twain                                 | 11               | 12*                               |
| TOTAL                                 | 83               | 89                                |

Group 3 (Traditional Scheduling)  

| Lilly                                  | 11               | 12*                               |
| Magnolia                              | 12               | 12                                |
| Lotus                                 | 12               | 13*                               |
| Violet                                | 12               | 13*                               |
| Holly                                 | 12               | 12                                |
| Larkspur                              | 12               | 12                                |
| Aster                                 | 12               | 12                                |
| TOTAL                                 | 83               | 86                                |

Note:  * = Joint observation by two researchers for inter-rater reliability purposes.
gender, ethnicity, years experience in teaching, years at the school, and their highest degree. The survey also contained questions on various elements of school climate, including their thoughts on block scheduling, planning time, and collegiality of the faculty. Since the survey was voluntary, not all teachers responded, and the data presented in Table 3.3 reflect total numbers of respondents from the observed sample of teachers. Missing data includes both missing cases (where observed teachers failed to respond to the survey at all) and missing responses (where observed teachers omitted or skipped the item when responding.) The response rate and demographic data for those responding are presented by groups in Table 3.3.

Instrumentation and Psychometric Properties, Phase I

Two primary observation instruments were selected for use during the on-site teacher observations in Phase I. Both instruments were used simultaneously during classroom observations of the selected sample. In addition, the researcher used quantitative data from an ongoing study of school climate conducted in the schools (McCoy, 1999).

- The Classroom Observation Instrument (COI)

The Classroom Observation Instrument (COI) was used to address Hypothesis 1 regarding use of effective teaching behaviors by teachers across the three established groups. The COI has been used extensively over the past 15 years in school effectiveness research and was developed to allow researchers to gather data on a variety of teaching behaviors which are generally considered to constitute effective teaching (Teddlie, Kirby & Stringfield, 1989). The instrument has been shown to
Table 3.3  Demographics of Respondents by Group for Secondary Sampling, Phase I

<table>
<thead>
<tr>
<th>Group</th>
<th>Observed Teachers Responding to Survey # and %</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Years Teaching # and % of Teachers/ # Years</th>
<th>Years at School # and % of Teachers/ # Years</th>
<th>Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>B = Back W = White O = Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n = 84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1</td>
<td>70 (83%)</td>
<td>49 F (70%) 21 M (30%)</td>
<td>7 B (10%) 63 W (90%)</td>
<td>12 (17%) = 0 - 3 15 (21%) = 4 - 9 9 (13%) = 10 - 14</td>
<td>36 (51%) = 1 - 5 13 (19%) = 6 - 10 8 (11%) = 11 - 15</td>
<td>37 (53%) = B.S. 32 (46%) = M.Ed. 1 (1%) = Spec. +</td>
</tr>
<tr>
<td>Group 2</td>
<td>71 (85%)</td>
<td>56 F (80%) 14 M (20%)</td>
<td>5 B (7%) 64 W (90%)</td>
<td>6 (8%) = 0 - 3 17 (24%) = 4 - 9 12 (17%) = 10 - 14 7 (10%) = 15 - 19 28 (40%) = 20 +</td>
<td>28 (39%) = 1 - 5 11 (16%) = 6 - 10 13 (19%) = 11 - 15 18 (26%) = 16 +</td>
<td>47 (66%) = B.S. 21 (30%) = M.Ed. 2 (3%) = Spec. +</td>
</tr>
<tr>
<td>Group 3</td>
<td>78 (93%)</td>
<td>56 F (72%) 21 M (27%)</td>
<td>8 B (10%) 66 W (85%)</td>
<td>10 (13%) = 0 - 3 22 (28%) = 4 - 9 9 (12%) = 10 - 14 7 (9%) = 15 - 19 29 (37%) = 20 +</td>
<td>37 (47%) = 1 - 5 13 (17%) = 6 - 10 11 (14%) = 11 - 15 16 (21%) = 16 +</td>
<td>47 (60%) = B.S. 28 (36%) = M.Ed. 2 (3%) = Spec. +</td>
</tr>
</tbody>
</table>

Note: In some cases, respondents chose not to provide data on particular items. As a result, the number of responses per item may vary.
successfully differentiate between effective and ineffective schools and has provided an overall indicator of teacher exhibited behaviors related to effective teaching (Teddlie & Stringfield, 1993). The instrument provides a numerical rating of teacher effectiveness across fourteen identified indicators which have been based on previous research.

The COI was developed for use in the Louisiana School Effectiveness Study (Teddlie & Stringfield, 1993). The authors reviewed previous research in the field of teacher effectiveness, with particular emphasis given to the work of Rosenshine (1983). Rosenshine identified six instructional functions which previous research commonly identified as important to effective teaching. Recognizing the difficulty in assessing these functions, the COI was initially developed as an open-ended instrument, with specific cues provided to focus qualitative field notes of observers toward identified effective teaching behaviors. Numerical ratings were then assigned to each of the indicators.

Teddlie, Kirby, and Stringfield (1989) initially employed the COI in a study of eight pairs of Louisiana public schools. Urban, rural and urban-to-suburban pairs represented all geographic regions of the state. Field notes from observations were later scored by two independent raters. The conversion of field notes to a rating scale provided a "numerical index of teacher effectiveness" (Teddlie, et al., 1989, p. 226). The instrument was selected for this study primarily to gather quantitative data relative to teaching behaviors observed across the established groups. The COI was used to determine whether teachers across the three groups actually behaved differently on instructional variables identified as indicators of effective teaching, since proponents of
the 4 X 4 scheduling approach have suggested that the additional time should facilitate the incorporation of more effective teaching behaviors.

Observers used the fourteen prompts to record qualitative notes, and at the conclusion of the observation period, observers assigned an overall rating to each of the cues using a 1 - 5 scale, with 5 being non-applicable. A score of 4 indicated strong evidence of the indicator, while a score of 1 indicated that the indicator was weak or not used. The instrument thus provided high-inference data regarding the effective teaching behaviors exhibited in the classroom, as well as qualitative descriptions on how the behaviors were being implemented (Schaffer, Nesselrodt & Stringfield, 1994). A copy of the instrument is included in Appendix A. Qualitative notes provided enriched understanding of the numerical ratings and assisted the researcher in sample selection for Phase II.

The fourteen indicators of effective teaching on the COI are discussed below, along with the definition for each.

Teacher's Ability to Keep Students On Task. Classes start promptly; the percentage of time on social and managerial tasks is minimal with maximum time spent on academics; the environment is reasonably disciplined and orderly, with students knowing what to do and doing it.

Teacher's Appropriate Use of Student Grouping. The teacher plans tasks that are appropriate for student grouping and incorporates team-based learning experiences; group problem solving and investigation is used as appropriate, with evidence of students using a variety of resources; students analyze and...
evaluate information; and overall, the student is seen as the worker and teacher as coach.

Teacher's Presentation of New Content and Skills, Including Use of Multiple Transitions in the Lesson. The teacher provides an overview and gives detailed instructions and explanations; the teacher phases in new skills when old skills are mastered; everyone in the classroom knows what they're doing.

Teacher's Command and Grasp of the Subject Matter. The teacher has made no factual errors during the presentation; the teacher is able to provide additional information on points of student interest.

Teacher's Integration of Knowledge and Skills Across Disciplines. The teacher integrates at least two disciplines within the lesson; students learn to use their minds well, with complex thinking skills addressed; activities call for an interdisciplinary approach to problem solving; demonstration and mastery of these skills is a condition of passing.

Teacher's Use of Innovative Student Work Activities. The teacher uses activities which require student creativity, planning, performance, and/or physical activity such as that involved in experiments, interviews, or model building. Teacher-centered lecture, textbook, workbook and work-sheet bound lessons are avoided.

Teacher's Use of Independent Practice. Some silent seat work is given, but the teacher or aide is monitoring to ensure student engagement; student "busy work" is limited; student seat work reinforces skills.
Teacher's Expectations of Students. The teacher sets overall high expectations for achievement.

Teacher's Use of Positive Reinforcement. The teacher uses clear, specific academic-related praise and/or other rewards.

Number of Classroom Interruptions. The number of classroom interruptions which interfere with instructional time is limited, i.e. intercom messages during class periods or students coming and/or leaving the room.

Teacher's Use of Appropriate Discipline and Ability to Maintain Appropriate Classroom Behavior. There are few discipline problems, and those that arise are handled quickly by the teacher with a minimum disturbance to other students.

Teacher's Ability to Create a Positive Classroom Climate. The teacher establishes a friendly ambience; the class seems like a friendly place.

Physical Characteristics of the Teacher's Classroom - Students' Work. There is a presence of students' work.

Physical Characteristics of the Teacher's Classroom - Instructional Displays. There are classroom displays which relate to instruction.

For purposes of this study, an additional indicator entitled "Number of Transitions in Modes of Instruction," was added to the original 14-item COI observation instrument. It was felt that this indicator would be valuable in determining whether teachers in block scheduled schools were using a greater number of methods to present classroom instruction, as previous research had indicated (Bryant, 1995). The item, defined below, increased the number of total items on the COI to 15.
Number of Transitions in Modes of Instruction. The number of times a teacher changes mode of teaching or instruction during the observation period.

In a study of six Wyoming high schools, Bryant (1995) reported on perceptions of teachers and students regarding the frequency and number of methods used in block scheduled versus traditionally scheduled classes. Bryant found statistically significant differences, as reported via survey data, in frequency and quantity of the number of separate activities used each day in class, the number of student presentations made in class, and the amount of computer use.

To record data on the “Number of Transitions” item, observers first described the modes of teaching being used through qualitative descriptions, and at the end of the observation period, they recorded the actual number of transitions. Teachers for this study were observed at random times during the instructional period. The random observation time allowed the researcher to obtain measurements at varying intervals, ie. beginning, middle, and end, of the classroom periods.

- The Stallings' Classroom Snapshot (CS)

A modified version of the Stallings' Classroom Snapshot (CS) is the second instrument which was used to gather data during Phase I classroom observations. The modified CS was used to gather data relative to Hypotheses 2 on student engagement rate or time-on-task during classroom observation time. The Stallings' instrument has been used extensively in studies of school effectiveness, evaluation studies and studies of student teaching (Teddlie & Stringfield, 1993; Stallings & Freiberg, 1991; Stallings & Kaskowitz, 1974). A copy of the instrument is contained in Appendix B.
Stallings reported on the validity of the instrument as it was applied in a two-phased study of 87 secondary remedial classrooms during 1979 (Stallings, 1980). "Partial correlations and analysis of variance of achievement groups were computed to examine the relationships between the observed instructional processes and class means for achievement gains" (Stallings, 1980, p. 12). Stallings conducted the validation study during two phases over a period of two years. The author correlated the CS variables to the Comprehensive Test of Basic Skills (CTBS) in order to determine which behaviors were positively and negatively associated with student academic gain.

Stallings identified several strong, positive correlations to student achievement (called Interactive, On-Task Instruction) as well as several variables which were negatively related to student achievement gains, (called Non-interactive, On-Task Instruction). Stallings also found that several variables, identified as "Off-Task, Classroom Management" activities, were negatively related to academic gains. These variables occurred more frequently than they did in classrooms where gain was made. Partial correlations of the variables negatively associated with academic gains ranged from - .20 to - .52. Partial correlations for variables positively associated with student gains ranged from .28 to .63.

The Stallings' instrument is a low-inference measure of students' time-on-task and interactive teaching. It provided basic frequency data on classroom behavioral activities from the selected sample of teachers. The instrument allowed the researcher to record students' on and off-task behaviors as well as instructional and organizational activities occurring in the classroom at specific time intervals during the observation
period. The CS provided information regarding observed time spent in specific activities, using specific materials, and working in specific grouping arrangements. The instrument further allowed the researcher to quantify the types of activities that students were engaged in during the observation period and to record whether these activities were interactive or independent of the adults in the room. Stallings used the term "interactive teaching" to describe patterns of teacher-student involvement. Interactive teaching has been consistently positively correlated with student achievement (Teddlie & Stringfield, 1993).

The CS required researchers to scan the room at approximately five-minute intervals and to record students' behaviors on a matrix approximately six times during the observation period. While the focus of the observation was the student, codes on the matrix were provided to record whether activities of the student occurred independently, with the teacher, aide, or other individuals. The matrix also provided a measurement of whether the activities occurred individually, in a small group of 2-10 students, a large group of 11 or more, or with everybody in the room.

The instrument contains dimensions for classroom management, presentation and questioning skills, various instructional strategies, and social/psychological climate of the classroom. The CS was modified slightly for the purpose of this study in order to reflect more recent literature on reported activities used within secondary-level core subject classes and also to bring the instrument more in line with classroom-based instructional activities of the 1990s (Bryant, 1995). The modifications were based on a
review of the literature on secondary teaching practices as well as effective teaching literature.

Several of the original thirteen variables on the CS were combined or clarified. Eight of the original thirteen variables were left intact; one item on the original scale, "Reading Aloud," was eliminated since this activity was not often observed in core subject areas in secondary-level classes; two items on the original scale, "Reading Silently" and "Working on Written Assignments," were combined into one variable on the modified CS. Two individual items on the original scale, "Instruction" and "Discussion," were modified slightly and clarified on the revised instrument. The modified version contained two new items: "Students/Teacher Using Technology or Laboratory" and "Simulations, Role Playing, Debates, or Oral Presentations."

To provide evidence of the validity of the modifications, a panel of experts consisting of two university professors in educational research, a doctoral student in educational research with extensive experience in use of the CS, and two education administrators with secondary school certification and experience were asked to review the instrument and to suggest possible modifications or clarifications to the terms and definitions.

The revised instrument was tested in a local school to examine the validity of the revised items. Classroom observations were conducted by the author and a research assistant involved in primary data collection for this study. De-briefing sessions were conducted following the day of classroom observations. The revised items were found to differentiate between the various observed activities in the secondary school subjects.
and classrooms. Final modifications recommended by the panel closely aligned with instructional activities included in the survey by Bryant (1995) on block scheduling.

The revised CS contained the following items relating to on-task behaviors. The definitions of each item are also provided.

**Working on Assignments or Reading Silently.** Students are reading silently or working on assignments made by the classroom teacher.

**Lecture or Non-interactive Visual or Video Presentation.** The teacher is lecturing to the class or using visual or video presentations, with limited or no student involvement.

**Discussion or Questioning and Answer -- Rapid Fire.** The teacher is calling out rapid fire questions requiring simple recall of facts and little higher order thinking on the part of students.

**Discussion or Questioning and Answer -- Higher Order Thinking Skills.** The students are engaged in enriching discussion of subject matter, with the teacher using questioning techniques which activate students' prior knowledge and require higher order thinking. Questions often begin with why or how instead of who, what, when; questions may ask students to relate to their own experiences, to analyze, discuss opinions, options, or draw conclusions.

**Students or Teacher Using Technology or Engaged in Laboratory Work.** The students or teacher are using technology or laboratory work to enrich the lesson.

Students are engaged in instruction which integrates technology (i.e. computers,
calculators, or laboratory equipment) to extend the learning opportunities, understanding and application of knowledge.

Making Assignments or Structuring Statements. An adult is making an assignment, giving information that students need to carry out the assignment, or explains an activity.

Rote Practice and Drill or Work with Pencil and Paper. Students are engaged in rote paper and pencil practice and drill activities from textbooks, workbooks, work sheets, or the chalk board.

Simulations, Role Playing, Debates, or Oral Presentations. Students are actively engaged in activities which require demonstration or exhibition of content mastery such as debates, role playing, simulations, or oral presentations.

Activities may require student planning, performance, interviews, model building, and/or physical activity.

Student Assessment; Student is Taking a Test or Quiz. One or more students, either as a group or as individuals, are taking a test or quiz on classroom subject matter.

Off-task behaviors measured by the CS included the following four behaviors:

Social Interaction. One or more students, teachers, or aides are interacting about work or subjects other than class-related materials.

Student Uninvolved. One or more students are not involved in any activity or are arriving or departing. Students are engaged in an activity or working on an assignment un-related to this class.
Being Disciplined. One or more students are being reprimanded for misbehavior or are being sent from the room for disciplinary reasons.

Classroom Management. One or more adults are performing duties related to the classroom but not directly related to any activity which is occurring at the time of the observation.

For purposes of this study, the following on-task instructional items were considered as interactive: Discussion - Q/A -- Rapid Fire; Discussion - Q/A -- Higher Order Thinking; Making Assignments/Structuring Statements; Students/Teacher Using Technology or Laboratory; Simulations/Role Playing/Debates/Oral Presentations; Student Assessment/Taking Test/Quiz. The three remaining instructional items were considered as non-interactive.

- School Climate Survey Data

As an additional quantitative measure, the researcher used individual teacher-level data gathered during an on-going study of school climate (McCoy, 1999). The survey instrument used a variety of questions, with some items from the National Education Longitudinal Study of 1988, (Ingels, Scott, Lindmark, Frankel, & Meyers, 1992), some researcher-constructed items, and some composite variables identified by Taylor and Tashakkori (1995) in their study of school climate.

The questionnaire provided demographic data, data regarding teachers' overall impressions of the school, their school schedule, and the number of times per week that particular instructional methods were used with students. For example, teachers were asked to indicate how often they used small student group work. A scale of “almost
never,” “1 - 2 times per week,” “3 - 4 times per week,” and “daily” was provided for teachers’ responses. A copy of the instrument is contained in Appendix C.

Data Analysis. Phase I - Classroom Observation Instrument (COI)

Data obtained from the Classroom Observation Instrument (COI) were used to address Hypotheses 1 of the study. While the observations provided both qualitative and quantitative data, the primary purpose was to gather quantitative data regarding the fifteen identified effective teaching behaviors, including the item pertaining to number of transitions in instruction per class, as they occurred across the three groups of schools.

The unit of analysis for Hypotheses 1 was at the teacher level. Descriptive statistics were first computed for each school and then each group. The subset of 13 inter-rater observations were averaged to obtain one score. Means and standard deviations were computed for all fifteen items on the COI, and collectively as a total measure of effective teaching. Frequency counts were generated for the number of teachers observed per subject and grade at the school and group levels.

A one-tailed test of statistical significance was used since the hypotheses of the study were directional. Alpha level was established at .05. While the one-tailed test increased the chance of a Type I error (a false alarm), the one-tail test of statistical significance was more sensitive to possible treatment effects which may have resulted from the block scheduling independent variable.

Multivariate analysis of variance (MANOVA) was used to determine whether the three established groups of schools differed significantly on effective teaching
behaviors as measured by the 15 items on the COI. The group effect was tested using Wilks' Lambda.

If the overall MANOVA value was significant, then each item on the COI was tested as a dependent variable using analysis of variance (ANOVA). Those items showing a significant $F$ value were then subjected to post hoc analysis to explore the magnitude and direction of these differences. Post hoc analysis was conducted using Tukeys' Studentized Range Test for Honest Significant Difference (HSD). Tukey is a $t$ test for multiple comparisons which controls for the Type I experimentwise error rate.

There were nine instances throughout the 250 observations when one item or more on the COI was coded as "Non-applicable" during the observation period. A review of these items indicated that the majority of the "N.A." coding was done for items relating to "Presence of Students' Work" or "Classroom Displays Relate to Instruction." This occurred in several instances when instruction occurred in a room other than the teacher's room (i.e. library or computer laboratory), or for example, when one teacher was moving to another room the next day and had taken all items off the wall in preparation. As a result of the nine missing values, only 241 observations could be used in the COI analysis.

Chronbach's alpha was used to estimate the internal consistency/reliability of the COI. The reliability coefficient was calculated at .80.

Inter-rater reliability coefficients for the COI were also calculated on a subset of joint observations. Thirteen joint observations by observers were conducted across the three groups of schools, as noted in Table 3.2, as a measure of inter-rater reliability.
Pearson correlation coefficients for the joint observations ranged from .61 to 1.00 on individual items. An overall average correlation on the interrater observations was calculated for the COI. The average overall correlation on the COI was .80.

Qualitative field notes were retained to assist in sample selection and for additional analyses during Phase II of the study.

Data Analysis. Phase I - Modified Stallings' Classroom Snapshot (CS)

Hypothesis 2 regarding students' time-on-task was addressed via quantitative data obtained from the modified Stallings' Classroom Snapshot (CS). The unit of analysis for Hypothesis 2 was also at the teacher level.

Descriptive statistics were generated across the groups of schools. Mean scores and standard deviations were generated for each of the items on the modified scale. Analysis was also conducted on variables identified as On-Task and Off-Task, as well as according to identified Interactive and Non-interactive On-Task Activities.

Analysis of variance (ANOVA) was used to examine whether the three groups differed significantly on observed time-on-task as measured by the modified Stallings. A one-tailed test of statistical significance was used, and alpha level was established at .05.

As a measure of concurrent validity of the modified CS, Pearson correlation coefficients were generated for the total CS to Question 1 on the Classroom Observation Instrument entitled "Teacher's Ability to Keep Students On Task." Both items represented the observers' indications of on-task and off-task behaviors in the 250 classroom observations. The Pearson correlation coefficient for total Time-On-Task...
estimate and Item 1 of the Classroom Observation Instrument, "Teacher's Ability to Keep Students On-Task," was calculated at .70.

**Procedures, Phase I**

Data collection during Phase I involved on-site observations of teachers in the 21 schools. Data collection occurred between November 1998 and February 1999. This timing allowed schools to complete beginning of the year and beginning of the block semester changes to the teacher rosters, and to have student schedules firmly established.

Initially, three researchers, in addition to the author of the study, were trained by personnel from Louisiana State University (LSU) to administer the selected observation instruments. The trainer also served as a researcher in the study.

One researcher had recently completed the Ph.D. in Education, and the two additional researchers, including the trainer, were in final stages of doctoral-level work in education. Two researchers had extensive experience in teaching and/or school administration, and the researcher/trainer had extensive experience in school-level research. The author and one researcher, in addition to the researcher/trainer, had previous experience in use of either the time-on-task or COI instruments.

One additional researcher was added in mid-December due to an emergency situation which arose after plans were finalized for one school observation. This fourth researcher had earned a Ph.D. in Education and was a university-level faculty member responsible for placement and evaluation of student teachers in the elementary and secondary schools. She also had extensive experience in teaching and administration.
In early November, all initially named researchers received intensive training where instrumentation, definitions and protocol of the study were reviewed. Videotaped clips of classroom activities were used to give researchers practical experience with interpreting and recording data on the two instruments. Following practice sessions with the instruments, researchers assessed inter-rater reliability and discussed each rating for consistency of definitions and scoring of each item.

A special training was conducted in December for the fourth researcher. The fourth observer received training by the same LSU trainer/researcher in use of the instruments, definitions and in the overall protocol for the study.

In addition, the author and research assistant who assisted in the majority of the data collection in the study conducted a full-day field test of the instruments in one local school prior to the start of data collection. The training sessions and field testing of the instruments were important in controlling for instrumentation effects which might have impacted the internal validity of the study.

To further address validity and reliability issues in the data collection process, de-briefing sessions were conducted with all observers at the conclusion of each school observation. Periodic refresher sessions were conducted throughout the period of data collection. The sessions were conducted in order to address possible reliability decay, observer drift and other observer effects which could have negatively impacted the validity or reliability of the collected data (Borg & Gall, 1996).

Following identification of the sample, phone calls were made to each city or parish school superintendent and to principals of each school asking for their
participation in the study. Correspondence via fax was sent to describe the general purpose of the study. The purpose was explained in general terms relating to the desire of the researcher to examine instructional practices in a typical high school day. The correspondence also described what data were needed, specifications of the teachers to be selected for observation, and on-site protocol to be followed (Appendix D).

Individual principals were asked to send via fax or mail a copy of the daily classroom schedules, bell schedules, and teacher rosters by subject for each school. The principals were also asked to eliminate from the observation pool any teacher not certified by the LDE for the classes being taught, including those on Temporary Teaching Assignments and Circular 665s, and to eliminate any teacher who had not been at the school for at least one previous school year. An observation schedule was then developed from the randomly selected teachers available for observation, with several alternates selected in case of teacher absences or other circumstances. Follow-up conversations with school personnel confirmed exact dates for school site visits.

Each school was visited by two researchers for one full day of observations. Approximately 12 observations were conducted at each school site, with approximately three teachers observed per core curriculum area. In all, 263 total observations, representing 250 individual teachers, were gathered across the three groups of schools.

The on-site protocol required that each reviewer observe selected classroom teachers for approximately 40 minutes. Observations were scheduled to obtain data across beginning, middle and end of the block schedule and traditional scheduled class periods. The Classroom Observation Instrument and the modified Stallings' Classroom
Snapshot Instrument were used simultaneously in each classroom. Teacher consent forms, required by the Institutional Review Board for Louisiana State University, were obtained prior to observations.

The author and a research assistant were responsible for data gathering from the majority of the sample schools. This arrangement allowed for greater reliability in the obtained scores. Table 3.4 shows the frequency of observations across the five observers in the study.

Table 3.4 Frequency of Observations by Researcher

<table>
<thead>
<tr>
<th>Observer #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>126</td>
<td>97</td>
<td>21</td>
<td>14</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: \( n = 263 \) total observations.

The author and research assistant conducted the majority of the classroom observations, accounting for 223 total observations. Additional researchers individually conducted forty observations during the study, accounting for approximately 15% of the total observations in the study.

The author, along with the research assistant, served as the primary research team and together conducted observations in 15 of the 21 schools, accounting for 71% of the total observations in the study. Table 3.5 provides a description of the observations conducted by research team configuration.

In the remaining six school visits, the author or research assistant were accompanied by one of the additional researchers trained for data gathering. Seventy-six total observations were conducted by a team consisting of the author or research
assistant, along with one additional researcher trained in the research instrumentation and procedures. The observations done by these teams represented 29% of the total 263 observations done for the study.

Table 3.5 Frequency of Observations by Research Team Configuration

<table>
<thead>
<tr>
<th>Research Team Configuration</th>
<th>f</th>
<th>Number Schools</th>
<th>% of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author + Research Assistant</td>
<td>187</td>
<td>15</td>
<td>71</td>
</tr>
<tr>
<td>Author or Research Assistant + Additional Researcher</td>
<td>76</td>
<td>6</td>
<td>29</td>
</tr>
</tbody>
</table>

Note: Number of schools in sample = 21; total number of teacher observations = 263

Methodology for Phase II

Sampling Strategy, Phase II

Phase II of the study involved a qualitative case study to more fully explore Phase I findings relating to teaching behaviors and time-on-task in schools involved with block scheduling for three or more years (Group 1). A multiple case, embedded design was used in this phase to address the qualitative question posed in the study (Yin, 1989). The design allowed for the comparison of teacher-level data from two selected schools from Group 1.

The research question posed in Phase II was:

What are the differing characteristics of block scheduled schools that have been differentially successful in creating more effective classroom environments?

The decision to select schools from Group 1 (three years + in block scheduling) was made due to findings from previous research literature which suggested that
implementation of most instructional changes required two to three years before implementation could be seen on a continuous basis (Fullan & Stiegelbauer, 1991). The qualitative phase of the study provided the researcher with rich detail to more fully understand the implementation issues related to block scheduling. This phase also allowed the researcher to probe for alternative or rival explanations which could have accounted for the findings in Phase I. Two phases of sampling were conducted in Phase II.

- Initial Sampling, Phase II

A purposeful, extreme or deviant case sampling strategy was used to select two schools from among the seven schools comprising Group 1, three years + block scheduled schools. Selection of the schools was made following analysis of the COI data on effective teaching behaviors which were gathered during Phase I.

Sample selection began by examining the mean scores on the COI. Schools were ranked from high to low according to overall mean scores on the observation instrument. Selection of the sample began with the school which received the highest overall mean score on the COI. Demographic data revealed that the school was comprised of approximately 1450 students (34% free and reduced lunch) and was located in a suburban area of the state.

The selection of the extreme "negative" case comparison from within Group 1 was also based on the COI. The school receiving the lowest obtained mean score on the COI was identified from initial data analysis. The primary research team in Phase I had
collected data in both schools which were selected for the final case study comparison.

Demographics of the schools selected for case study are contained in Table 3.6.

### Table 3.6  Demographics of Schools Selected for Case Studies, Phase II

<table>
<thead>
<tr>
<th>School</th>
<th>School Size</th>
<th>% Free/Reduced Lunch</th>
<th>Community Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>School One (Matisse)</td>
<td>1450</td>
<td>34 %</td>
<td>Suburban</td>
</tr>
<tr>
<td>School Two (Van Gogh)</td>
<td>868</td>
<td>34 %</td>
<td>Rural</td>
</tr>
</tbody>
</table>

- **Secondary Sampling, Phase II**

  Teachers who were randomly selected for study in Phase I were again asked to participate in the Phase II follow-up study. These teachers formed the core sample of teachers for Phase II. In addition, two other groups of teachers were used in the secondary sampling strategy. Core subject department chairs were asked to participate in either the interviews or focus group session(s), and the researcher also invited additional teachers from the general population to participate. These teachers were selected from among those who had planning hours which coincided with either the scheduled focus group(s) or interview times. This allowed for a varied selection, and not one pre-determined by the school administration.

  In Matisse School (School One), fifteen teachers comprised the sample. Ten were from the original pool of 12 teachers who were observed in Phase I, two were department chairs, and three were from the general population. A total of ten teachers from Matisse School participated in two focus group sessions, while five teachers were interviewed throughout the day.
In Van Gogh School (School Two), 11 total teachers were involved in the focus group and individual interviews. Eight were from the original pool of 12 who were observed in Phase I, two were department chairs, and one was from the general population. In Van Gogh School, six teachers participated in the focus group, while five were interviewed throughout the day. Table 3.7 contains the demographics of the secondary sample for Phase II. Demographics regarding the sample were obtained from the Phase II survey instrumentation.

**Instrumentation, Phase II**

Multiple instruments were used for data collection in order to establish a chain of evidence relating to the qualitative question. A copy of the qualitative instrument and the demographic survey is contained in Appendix E.

The primary instrument in Phase II was a qualitative interview guide. The interview guide was developed for use in the focus groups and individual interviews. Probing questions were developed by the researcher to serve as a basic checklist for each interview and focus group. This method of qualitative interviewing allowed the author to adapt to specific respondents, but assured that similar data would be obtained across the sample.

The quantitative-based survey instrument was used to obtain demographic data from the Phase II sample. The written survey form asked for gender, ethnicity, a range of total years teaching, teaching area, grade level(s), and highest degree.

As an additional quantitative measure, the researcher used individual teacher-level data and general school climate data gathered during an on-going study of school
Table 3.7  Demographics of Secondary Sampling, Phase II - Qualitative Study

<table>
<thead>
<tr>
<th>School</th>
<th>Sample Size</th>
<th>Gender</th>
<th>Ethnicity</th>
<th># Years Teaching</th>
<th>Grade Level</th>
<th>Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>School One</td>
<td>n=15</td>
<td>7 F 8 M</td>
<td>2 B 13 W</td>
<td>5 = 1 - 4 Yrs, 1 = 5 - 9 Yrs, 3 = 10 - 14 Yrs, 1 = 15 - 19 Yrs, 5 = 20+ Yrs</td>
<td>5 = 9th, 3 = 10th, 3 = 11th, 4 = Combo</td>
<td>9 = B.S., 6 = M.Ed. or Higher</td>
</tr>
<tr>
<td>School Two</td>
<td>n=11</td>
<td>9 F 2 M</td>
<td>1 B 10 W</td>
<td>2 = 1 - 4, 2 = 5 - 9, 1 = 10 - 14, 1 = 15 - 19, 5 = 20+</td>
<td>4 = 9th, 2 = 10th, 2 = 11th, 1 = 12th, 2 = Combo</td>
<td>6 = B.S., 5 = M.Ed. or Higher</td>
</tr>
</tbody>
</table>

Note: Combo = Combination of any grades 9 - 12 in one class; F=Female, M=Male; B=Black, W=White; B.S.=Bachelors’, M.Ed.=Masters’.

climate (McCoy, 1999). The questionnaire provided data regarding teachers' overall impressions of the school, faculty relations, student discipline, their schedule at the school, and the number of times per week that particular instructional methods were used with students. Descriptive statistics for both schools were computed from the quantitative data obtained from the school climate questionnaire. Frequency counts relating to the number of times teachers used particular teaching methods were generated and compared to classroom observation data.

In addition, the researcher took copious notes focused on a broad range of topics, including physical layout and condition of the school and campus, school staffing, and overall atmosphere of the campus.

Focus group sessions, individual interviews, direct observations and archival documents were primary data collection methods which provided data for Phase II.
Focus Group and Individual Interview Guide

A general interview guide approach was established by the researcher prior to data collection. The interview guide included broad questions and topics to be explored regarding implementation of 4 X 4 block scheduling and its effect on teaching behaviors in the schools and classrooms. The general guide approach allowed for flexibility in probing for additional responses but served to keep interactions focused (Patton, 1990). The interview guide also contained questions to probe for rival explanations of different findings across the schools.

General areas of inquiry on the interview guide included the following:

- Description of the overall teaching and learning environment;
- Description of faculty and administrators' attitudes and relations;
- Teachers' involvement in the decision to go to block scheduling;
- Teachers' expectations and assessment of actual impact of block scheduling;
- Teachers' preparation for block scheduling;
- Teachers' assessment of the impact that administration has on instructional planning;
- Teachers' assessment of the impact of block scheduling on instruction;
- Teachers' assessment of changes in their teaching methods;
- Teachers' assessment of the impact of department-level planning;
- Teachers' assessment of the impact of block scheduling on students; and
- Teachers' opinions of block scheduling.
• **Direct Observation**

Direct observation of the general school campus, physical plant, atmosphere, campus activities and of teachers' and administrators interactions were also made through copious field notes in order to obtain thick narrative description needed for the qualitative case study. Thick descriptions were captured to provide evidence of transferability of the conclusions.

• **Collection of Archival Data**

Archival data were also collected and examined. Among those items examined were copies of school newsletters, plans for professional development, materials used in professional development, and various documents relating to the school curriculum and school-based activities.

**Data Analysis and Inferences, Phase II**

Qualitative data from focus group(s) and interviews were analyzed using several methods. Lincoln and Guba’s Constant Comparative Method (Lincoln & Guba, 1985) was first used to identify “recurring regularities” in field notes and transcripts. The researcher continued analysis using Patton’s (1990) process of inductive analysis and Krueger’s (1989) method of identifying “big ideas” from focus group data in order to establish the patterns, themes, and final categories for cross-case comparison. These procedures of data analysis provided a systematic, orderly way to sort the data and provided a creative, yet technical means of analysis. The unit of analysis for this phase of the study was at the school level.
Transcripts of the focus group sessions and interviews were developed. The narrative data were sorted and analyzed according to major themes.

Six final categories for comparison were developed. Data from each of the two schools were then compared using a dimensions of contrast analysis. Observational data from copious field notes were also analyzed. Archival data were cataloged and used to support inferences drawn from the focus groups, interviews and observations.

While this phase of the study primarily involved qualitative data gathering and analysis, additional statistics from Phase I data were generated for the two case study school schools. Descriptive statistics generated from the Phase I Classroom Observation Instrument (COI) and the Stallings' Classroom Snapshot Time-on-Task instrument were analyzed. In addition, Coefficients of Variation were generated for the obtained data.

Procedures, Phase II

Follow up visits were made to the two sites in May 1999. Principals of the schools were contacted via phone and asked to participate in Phase II of the study. The researcher again developed and faxed a document to explain the purpose of the follow-up visit in general terms, and to clearly define the procedures to be used during the one-day visit. New semester classroom schedules were obtained in order to determine best times for focus groups and interviews. Principals were asked to assist in obtaining required permission forms from teachers for the interview and focus group sessions (Appendix D).
Both visits were conducted by the author and research assistant from Phase I of the study. Both researchers had been involved with on-site observations at the school during Phase I. The research assistant aided in recording of data.

Focus group sessions lasted from one to one and one-half hours. Individual interviews were between 30 to 40 minutes. The interview guide was used to guide questions and to record conversations from each interview and focus group. Tape recordings were made of all interviews and focus groups and were later used in data analysis.

Summary

This chapter has provided a description of the overall hypotheses, design and methodology used in the two phases of the study. The study used a combination of qualitative and quantitative methodologies and data sources in order to develop a greater understanding of the data related to the specific questions under study.

Phase I involved on-site observations of teachers within the 21 schools which had been grouped according to scheduling type. Observations were conducted from November 1998 - February 1999. Two primarily quantitative observation instruments were used by a five-member research team to address the two hypotheses related to teacher effectiveness and student time-on-task in block versus traditionally scheduled schools. Statistical analysis included use of MANOVA and individual ANOVAS. Descriptive data were also obtained.

Phase II involved selection of two extreme cases from within Group 1 schools which were involved with block scheduling for three or more years. This phase was
used to examine the qualitative research question regarding varying characteristics of block scheduled schools that have been differentially successful in creating more effective classroom environments. On-site focus groups and interviews were conducted with teachers from the original Phase I observation sample, available core subject area department chairs, and other faculty. Follow-up visits were conducted by the primary research team in early May 1999. An interview guide approach was used in data collection, and analysis was conducted using Krueger's theory of "big ideas," Patton's (1990) process for inductive analysis, and the Lincoln and Guba Constant Comparative Method. Six final dimensions of contrast were used to compare the two schools.

Chapter Four presents the research findings from Phase I. Chapter Five provides an in-depth analysis of the two schools selected for qualitative study.
CHAPTER FOUR
QUANTITATIVE RESULTS

Introduction

The primary purpose of this study was to examine the effect of extended learning time provided via the 4 X 4 block schedule on teaching behavior and student engagement rate or time-on-task at the high school level. Numerous educators have suggested that "too little thought and action have been given to the educational and emotional impact of a school schedule on the lives of students and teachers" (Canady & Rettig, 1995, p. xi). With increasing numbers of schools employing block scheduling practices, it is important that empirical research clearly examine the effects of block scheduling on teaching behavior and student engagement. Will block scheduling provide schools with the "power" to institutionalize effective classroom practices (Canady & Rettig, 1995)? This question is at the heart of this research.

This chapter will present the quantitative results from Phase I of the study. The questions addressed through Phase I included the following:

1. Has implementation of block scheduling in Louisiana high schools resulted in the use of more effective teaching methods by secondary school teachers as compared to those in traditionally scheduled classes?

2. Has implementation of block scheduling in Louisiana high schools resulted in higher student engagement rates during block scheduled classes as compared to traditionally scheduled classes?
3. Was there a difference in classroom instruction or student engagement rate in Louisiana high schools in Year 2 or Year 3+ of block scheduling compared to traditionally scheduled schools?

This study employed a causal-comparative (ex-post facto) design of teachers in three matched groups of schools in order to examine differences in teaching behaviors and student engagement rate. The three groups of seven schools each were matched to the extent possible on socio-economic status, community type and size. A total of 21 schools formed the sample for Phase I. Two matched groups were formed of schools involved with block scheduling for multiple years in order to examine the impact on teaching behavior and student engagement. A similarly matched group of schools formed the basis of a control group. The examination included teachers and schools in various stages of block schedule implementation since research literature suggests that two to three years are required before teachers fully embrace and implement change (Fullan & Stiegelbauer, 1991).

Phase I of the study involved two sampling strategies. Initial sampling was conducted using a purposeful, non-random, matched groups strategy in order to establish the three groups of teachers and schools for the study. A secondary sampling was conducted using a stratified random sampling strategy. In all, 250 Louisiana high school teachers were selected and observed in the core subject areas of English/language arts, math, science and social studies.

The chapter begins with the research hypotheses, a discussion of the descriptive statistics from Phase I, including sample demographics and frequency data relating to
the teachers, and concludes with statistical information regarding each of the two hypotheses for Phase I. The results of Phase II, the qualitative case study, will be presented in Chapter Five.

Hypotheses Tested, Phase I

The following hypotheses were tested:

Hypothesis 1:

Mean scores on effective teaching behaviors, as measured by the Classroom Observation Instrument (COI), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.

Sub-Hypothesis 1 (A):

Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers that have been on block scheduling for three or more years than teachers in block scheduling for two years.

Sub-Hypothesis 1 (B):

Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers that have been on block scheduling for three or more years than teachers in traditionally scheduled schools.

Sub-Hypothesis 1(C):

Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers on block scheduling for two years than teachers in traditionally schools.
Hypothesis 2:

Mean scores for on-task student engagement rate, as measured by the modified Stallings' Classroom Snapshot (CS), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.

Sub-Hypothesis 2 (A):

Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers that have been on block scheduling for three or more years than for teachers in block scheduling for two years.

Sub-Hypothesis 2 (B):

Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers that have been on block scheduling for three or more years than for teachers in traditionally scheduled schools.

Sub-Hypothesis 2 (C):

Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers that have been on block scheduling for two years than for teachers in traditionally scheduled schools.

Two general types of dependent variables were utilized in the study: Teaching Behavior and Student Engagement Rate or Time-on-Task. One independent variable was established: Scheduling Type, with three levels according to number of years on block scheduling, either 3+ or 2 years, plus a control group of traditionally scheduled schools.
Descriptive Statistics, Phase I

Demographics of the Secondary Sample, Phase I

A total of 250 teachers made up the secondary-level sample for Phase I. The teachers were selected through a stratified, random selection from among the three groups (21 schools) established for the study. The researchers gathered 263 total observations from the sample, including 13 observations conducted to measure inter-rater reliability of the Classroom Observation Instrument data. Demographics for the observed teachers were obtained from the School Climate Survey conducted by McCoy (1999). In order to obtain survey data, observed teachers were matched back to their pre-coded survey response form. The survey was voluntary. Of the 250 total teachers involved in the Phase I observations, 31 teachers chose not to respond to the survey. Table 4.1 depicts the number and percentage of teachers responding to the survey across the three established groups of schools and teachers. Demographics of the 219 teachers who chose to respond to the School Climate Survey are contained in Chapter Three, Table 3.3.

Table 4.1  Number and Percentage by Group of Observed Teachers Responding to School Climate Survey

<table>
<thead>
<tr>
<th>Number and Percent Responding</th>
<th>Group 1 ( n = 84 )</th>
<th>Group 2 ( n = 83 )</th>
<th>Group 3 ( n = 83 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total ( n = 250 )</td>
<td>219 ( (87.6%) )</td>
<td>71 ( (85%) )</td>
<td>78 ( (93%) )</td>
</tr>
</tbody>
</table>

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**Frequency of Observations Across Grade Levels and Core Subject Areas**

Frequency data were calculated for the number of observations made in each of the three groups. In addition, frequencies were generated for the number of observations made within each group by grade level and core subject areas. The data are presented in Tables 4.2 and 4.3, respectively.

Observations were conducted across all four grade levels of 9th - 12th grade teachers. Frequency data revealed that approximately 34% of the total observations were conducted of Group I teachers; 34% of Group 2 teachers; and 33% of teachers in Group 3.

While the researcher did not stratify the selected teachers according to grade level, the distribution is reported for informational purposes. An examination of frequency data across all grade levels revealed the following: 19% of the total observations were conducted of Grade 9 teachers; 21% of the total observations were conducted of Grade 10 teachers; 19% of the total observations were conducted of Grade 11 teachers; 13% of the total observations were conducted of Grade 12 teachers; and 28% of the total observations were of teachers in a combination class containing multiple grade levels.

The distribution of the observations across grade levels per group is also presented in Table 4.2. The frequencies of observation by grade level per group revealed that the largest number of the classes observed for Groups 1 and 3 were combination classes. For Group 2, the largest number of observations fell in the Grade
Table 4.2  Observations Conducted by Group Per Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Observations Total by Grade</th>
<th>% of Total</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 9</td>
<td>51</td>
<td>19%</td>
<td>16</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Grade 10</td>
<td>54</td>
<td>21%</td>
<td>17</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>Grade 11</td>
<td>51</td>
<td>19%</td>
<td>17</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Grade 12</td>
<td>35</td>
<td>13%</td>
<td>9</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Combination of Grades</td>
<td>72</td>
<td>28%</td>
<td>29</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>TOTALS</td>
<td>263</td>
<td>(34%)</td>
<td>88</td>
<td>89</td>
<td>86</td>
</tr>
</tbody>
</table>

Table 4.3  Observations Conducted by Group Per Core Subject Area

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Observations Total by Subject</th>
<th>% of Total</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>English/Lang. Arts</td>
<td>69</td>
<td>26%</td>
<td>22</td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td>Math</td>
<td>63</td>
<td>24%</td>
<td>21</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Science</td>
<td>63</td>
<td>24%</td>
<td>20</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>Social Studies</td>
<td>68</td>
<td>26%</td>
<td>25</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>TOTALS</td>
<td>263</td>
<td>(34%)</td>
<td>88</td>
<td>89</td>
<td>86</td>
</tr>
</tbody>
</table>
9 level, followed by the combination grades. This finding is interesting since one might expect fewer combination classes in control Group 3, traditionally scheduled schools.

Data pertaining to subject area were generated from individual course titles coded by observers under the four core subjects. Individual courses were those listed in the Louisiana Department of Education's Bulletin 741, Louisiana School Administrator's Handbook. These included a variety of course offerings, including progressive levels of courses, i.e. English I, English II, as well as some elective offerings (coded "Other"), such as Psychology within the social studies area.

Frequency data were then combined to distinguish courses according to the four core subject areas. Data found in Table 4.3 indicated that 26% of the total observations were of teachers in English/language arts subjects; 24% were conducted of teachers in mathematics subjects; 24% were conducted of teachers in science subjects; while 26% of the total observations were of teachers in social studies subjects.

Frequency data were generated to obtain the distribution of subject area observations across groups. Initially three teachers in each of the four core subjects were randomly selected for observation. An attempt was made to select alternates within each core area in case of absences or other extenuating circumstances where the originally selected teacher was unavailable. Observers originally attempted to gather at least three observations within each core subject per school. This would have resulted in 21 observations per subject, per group.

However, in several schools, the number of core subject area teachers was limited, and as a result, alternates within the same subject area were not available. In
some schools, even alternates were absent or unavailable during on-site observations. When this occurred, additional observations were made of alternate teachers in one of the other core subjects in order to obtain as many observations per school as possible. This occurred in each of the three established groups of schools.

In Group 1, only 20 science teachers were observed, while additional teachers were observed in English/language arts and social studies. For Group 2, only 19 mathematics teachers were observed, but additional observations were made within the other three subjects. For Group 3, fewer teachers were observed in both science and social studies, while additional observations were made in mathematics and English/language arts.

**Descriptive and Inferential Statistics Related to Hypothesis 1**

The Classroom Observation Instrument (COI) was used to test Hypothesis 1. Hypothesis 1 was formulated to test whether mean scores on effective teaching behaviors, as measured by the COI, would be higher for teachers that have been on block scheduling than those teachers in traditionally scheduled schools. A description of each item contained on the COI was provided in Chapters 1 and 3.

**Means and Standard Deviations for the COI**

Means and standard deviations were computed by group for each of the 15 individual variables which collectively measured effective teaching behaviors. Each item was designated as a dependent variable (DV) and numbered for reporting purposes (i.e. DV1, DV2). A score of 1 - 4 was recorded on each item, with 4 indicating that there was strong evidence of the indicator during the observation period. Table 4.4
presents group means and standard deviations by individual item on the COI broken
down by the three groups of schools.

**Multivariate Analysis (MANOVA) Results**

The testing of Hypothesis 1 and the sub-hypotheses began with Multivariate
Analysis of Variance (MANOVA) to determine if statistically significant differences
existed among the three groups on the dependent variables. The unit of analysis was at
the teacher level.

The data were first analyzed using a one-way MANOVA with scheduling type as
the independent variable. There were three levels of scheduling type: Block 3+ years;
Block 2 Years; and Traditional Schedule. The analysis revealed significant multivariate
effects for scheduling type \[ \text{Wilks' Lambda} = .763, F (30, 448) = 2.16, p < .0005 \].
These results indicated that there was a statistically significant difference between
groups on all COI items taken together.

**Univariate ANOVA Results**

Since the MANOVA results indicated a significant effect for scheduling type,
univariate ANOVAs were used to examine each of the 15 items on the COI to determine
where differences existed among the groups. The results of the univariate ANOVA for
each of the 15 items or dependent variables (DV1 - DV15) on the COI were then
examined individually.

- **Univariate Effect for DV2 “ Appropriately Uses Student Grouping”**

There was a significant univariate effect for DV2 “ Appropriately Uses Student
Grouping” \[ F (2, 238) = 3.28, p < .0394 \]. This indicates that there was a significant
<table>
<thead>
<tr>
<th>Group</th>
<th>Variable on COI</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DV1. Gets Show On Road</td>
<td>84</td>
<td>2.67</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>DV2. Appropriately Uses Student Grouping</td>
<td>84</td>
<td>1.75</td>
<td>1.11</td>
</tr>
<tr>
<td></td>
<td>DV3. Presents New Skill</td>
<td>84</td>
<td>2.43</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>DV4. Knowledge of Subject Matter</td>
<td>83</td>
<td>3.39</td>
<td>.91</td>
</tr>
<tr>
<td></td>
<td>DV5. Integrates Knowledge &amp; Skills Across Disciplines</td>
<td>84</td>
<td>1.75</td>
<td>.86</td>
</tr>
<tr>
<td></td>
<td>DV6. Uses Innovative Student Work Activities</td>
<td>84</td>
<td>1.90</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>DV7. Appropriate Use of Independent Practice</td>
<td>84</td>
<td>2.43</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>DV8. Establishes High Expectations</td>
<td>84</td>
<td>3.20</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>DV9. Uses Positive Reinforcement</td>
<td>84</td>
<td>2.81</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>DV10. Limited Number Interruptions</td>
<td>84</td>
<td>2.89</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>DV11. Maintains Discipline</td>
<td>84</td>
<td>3.13</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>DV12. Positive Classroom Climate</td>
<td>84</td>
<td>3.22</td>
<td>.94</td>
</tr>
<tr>
<td></td>
<td>DV13. Presence of Students’ Work</td>
<td>81</td>
<td>1.78</td>
<td>1.12</td>
</tr>
<tr>
<td></td>
<td>DV14. Displays Relate to Instruction</td>
<td>81</td>
<td>2.33</td>
<td>1.16</td>
</tr>
<tr>
<td></td>
<td>DV15. Number of Transitions in Modes of Teaching</td>
<td>84</td>
<td>2.17</td>
<td>.89</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Variable on COI</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>DV1. Gets Show On Road</td>
<td>83</td>
<td>2.83</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>DV2. Appropriately Uses Student Grouping</td>
<td>83</td>
<td>1.77</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>DV3. Presents New Skill</td>
<td>82</td>
<td>2.34</td>
<td>.933</td>
</tr>
<tr>
<td></td>
<td>DV4. Knowledge of Subject Matter</td>
<td>81</td>
<td>3.51</td>
<td>.99</td>
</tr>
<tr>
<td></td>
<td>DV5. Integrates Knowledge &amp; Skills Across Disciplines</td>
<td>83</td>
<td>1.70</td>
<td>.90</td>
</tr>
<tr>
<td></td>
<td>DV6. Uses Innovative Student Work Activities</td>
<td>83</td>
<td>1.80</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>DV7. Appropriate Use of Independent Practice</td>
<td>83</td>
<td>2.42</td>
<td>.98</td>
</tr>
<tr>
<td></td>
<td>DV8. Establishes High Expectations</td>
<td>83</td>
<td>2.96</td>
<td>.94</td>
</tr>
<tr>
<td></td>
<td>DV9. Uses Positive Reinforcement</td>
<td>83</td>
<td>2.76</td>
<td>1.03</td>
</tr>
<tr>
<td></td>
<td>DV10. Limited Number Interruptions</td>
<td>82</td>
<td>3.12</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>DV11. Maintains Discipline</td>
<td>83</td>
<td>3.36</td>
<td>.93</td>
</tr>
<tr>
<td></td>
<td>DV12. Positive Classroom Climate</td>
<td>83</td>
<td>3.15</td>
<td>.86</td>
</tr>
<tr>
<td></td>
<td>DV13. Presence of Students’ Work</td>
<td>81</td>
<td>1.62</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>DV14. Displays Relate to Instruction</td>
<td>81</td>
<td>2.23</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>DV15. Number of Transitions in Modes of Teaching</td>
<td>83</td>
<td>2.22</td>
<td>.91</td>
</tr>
</tbody>
</table>

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(Table 4.4 Continued)

<table>
<thead>
<tr>
<th>Group</th>
<th>Variable on COI</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>DV1. Gets Show On Road</td>
<td>83</td>
<td>2.72</td>
<td>1.03</td>
</tr>
<tr>
<td></td>
<td>DV2. Appropriately Uses Student Grouping</td>
<td>83</td>
<td>1.41</td>
<td>.78</td>
</tr>
<tr>
<td></td>
<td>DV3. Presents New Skill</td>
<td>83</td>
<td>2.62</td>
<td>.88</td>
</tr>
<tr>
<td></td>
<td>DV4. Knowledge of Subject Matter</td>
<td>82</td>
<td>3.53</td>
<td>.78</td>
</tr>
<tr>
<td></td>
<td>DV5. Integrates Knowledge &amp; Skills Across Disciplines</td>
<td>83</td>
<td>1.66</td>
<td>.93</td>
</tr>
<tr>
<td></td>
<td>DV6. Uses Innovative Student Work Activities</td>
<td>83</td>
<td>1.67</td>
<td>.96</td>
</tr>
<tr>
<td></td>
<td>DV7. Appropriate Use of Independent Practice</td>
<td>83</td>
<td>2.25</td>
<td>.99</td>
</tr>
<tr>
<td></td>
<td>DV8. Establishes High Expectations</td>
<td>83</td>
<td>3.10</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>DV9. Uses Positive Reinforcement</td>
<td>83</td>
<td>3.04</td>
<td>.96</td>
</tr>
<tr>
<td></td>
<td>DV10. Limited Number Interruptions</td>
<td>83</td>
<td>2.90</td>
<td>1.23</td>
</tr>
<tr>
<td></td>
<td>DV11. Maintains Discipline</td>
<td>83</td>
<td>3.17</td>
<td>.98</td>
</tr>
<tr>
<td></td>
<td>DV12. Positive Classroom Climate</td>
<td>82</td>
<td>3.40</td>
<td>.86</td>
</tr>
<tr>
<td></td>
<td>DV13. Presence of Students' Work</td>
<td>83</td>
<td>1.48</td>
<td>.93</td>
</tr>
<tr>
<td></td>
<td>DV14. Displays Relate to Instruction</td>
<td>83</td>
<td>2.50</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>DV15. Number of Transitions in Modes of Teaching</td>
<td>82</td>
<td>1.76</td>
<td>.75</td>
</tr>
</tbody>
</table>

**Note:** Scale: 1=Weak or Not Used; 2=Contradictory; 3=Some But Not Strong; 4=Strong; 5=Not Applicable. Results have been rounded.
difference among the three groups of teachers on the use of student grouping within the classes. Additional univariate results are provided in Table 4.5. The mean for Group 1 (3 Years+ Block) was 1.75, for Group 2 (2 Years Block) the mean was 1.77, and for Group 3 (Traditionally Scheduled Control Group) the mean was 1.41. Mean scores were highest for teachers in Group 2, but the means for both groups of block schedule schools were higher than that for Group 3, the control group. The findings were in the direction hypothesized.

- Univariate Effect for DV15 “Number of Transitions in Modes of Instruction”

Additional results from the univariate ANOVAs indicated that the independent variable had a significant effect on DV15 “Number of Transitions in Modes of Instruction” \[F(2, 238) = 7.69, \ p < .0006\]. Table 4.6 reveals the significant univariate effect for DV15.

Means from both Group 1 (3 Years+ Block) and Group 2 (2 Years Block) were higher than Group 3, (Traditionally Scheduled Control Group). The means for DV15 were: Group 1 = 2.17, Group 2 = 2.22 and Group 3 = 1.76. This indicates that there was a significant difference among the three groups of teachers in the number of times they made transitions in instructional methods or activities during the observed time, with observed time held constant across all groups. For example, a teacher may have begun the lesson with lecture, then moved to student presentations, and concluded with student assessment. Two transitions would be recorded for this teacher. The results are consistent with most survey literature on block scheduling which suggests that teachers generally use a greater number and variety of activities within the block classes.
Table 4.5 Significant Univariate ANOVA for DV2 “Appropriately Uses Student Grouping”

<table>
<thead>
<tr>
<th>Variable - DV 2</th>
<th>df</th>
<th>F</th>
<th>p</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriately Uses Student Grouping</td>
<td>(2, 238)</td>
<td>3.28</td>
<td>.0394</td>
<td>1.75 (SD=1.12)</td>
<td>1.77 (SD=1.09)</td>
<td>1.41 (SD=.78)</td>
</tr>
</tbody>
</table>

α = .05

Table 4.6 Significant Univariate ANOVA for DV15 “Number of Transitions in Modes of Instruction”

<table>
<thead>
<tr>
<th>Variable - DV 15</th>
<th>df</th>
<th>F</th>
<th>p</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Transitions in Modes of Instruction</td>
<td>(2, 238)</td>
<td>7.69</td>
<td>.0006</td>
<td>2.17 (SD=.89)</td>
<td>2.21 (SD=.91)</td>
<td>1.76 (SD=.75)</td>
</tr>
</tbody>
</table>

α = .05

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Results of the Post-Hoc Analysis

Post hoc analysis was conducted using Tukey's Studentized Range (HSD) Test for both DV2 “Appropriately Uses Student Grouping,” and DV15 “Number of Transitions in Modes of Instruction.” A pair-wise comparison of the three groups was conducted to determine which groups differed on each of the two variables and to determine the direction of the difference.

• Post-Hoc Results, DV2 “Appropriately Uses Student Grouping”

While a statistically significant difference was found in the ANOVA for DV2, post hoc analysis was unable to detect any significant difference between the three levels of the dependent variable.

• Post-Hoc Results, DV15 “Number of Transitions in Modes of Instruction”

Tukey's pair-wise comparisons revealed a statistically significant difference among all groups for variable DV15. Results showed that Group 1 (3 Years+ Block) differed significantly from Group 3 (Traditionally Scheduled Control) in the hypothesized direction. Group 2 (2 Years Block) also differed significantly from Group 3 in the hypothesized direction. However, results indicated that Group 2 and Group 1 were not significantly different. Table 4.7 contains the results of the post hoc analysis.

Summary of Results, Hypothesis 1

Results for the overall hypotheses and each sub-hypotheses are presented below. Hypotheses were stated directionally.
Table 4.7 Results of Tukey's HSD Pairwise Comparisons for DV15 “Number of Transitions in Modes of Instruction”

<table>
<thead>
<tr>
<th>Group Comparisons</th>
<th>Simultaneous Lower Confidence Limit</th>
<th>Difference Between Means</th>
<th>Simultaneous Upper Confidence Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 1</td>
<td>-.2148</td>
<td>.1020</td>
<td>.4189</td>
</tr>
<tr>
<td>2 - 3</td>
<td>.1822</td>
<td>.5000</td>
<td>.8178***</td>
</tr>
<tr>
<td>1 - 2</td>
<td>-.4189</td>
<td>-.1020</td>
<td>.2148</td>
</tr>
<tr>
<td>1 - 3</td>
<td>.0811</td>
<td>.3980</td>
<td>.7148***</td>
</tr>
<tr>
<td>3 - 2</td>
<td>-.8178</td>
<td>.5000</td>
<td>-.1822***</td>
</tr>
<tr>
<td>3 - 1</td>
<td>-.7148</td>
<td>.3980</td>
<td>-.08111***</td>
</tr>
</tbody>
</table>

Note: ****p < .05

Overall Hypotheses:

Mean scores on effective teaching behaviors, as measured by the Classroom Observation Instrument (COI), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.

Results:

There is statistical evidence in support of overall Hypothesis 1 regarding differences between block and traditionally scheduled schools on effective teaching behaviors with regard to Item DV2 “ Appropriately Uses Student Grouping” and item DV15 “ Number of Transitions in Modes of Instruction.”

Sub-Hypothesis 1 (A):

Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers that have been on block scheduling for three or more years than teachers in block scheduling for two years.

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Results:

There is no statistical evidence to support Sub-Hypothesis 1 (A).

Sub-Hypothesis 1 (B):
Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers that have been on block scheduling for three or more years than teachers in traditionally scheduled schools.

Results:
There is statistical evidence in support of Sub-Hypothesis 1 (B) in regard to more effective teaching behavior in 3 Year+ Block scheduled schools as compared to traditionally scheduled schools in regard to item DV15 “Number of Transitions in Modes of Instruction.”

Sub-Hypothesis 1(C):
Mean scores on effective teaching behaviors, as measured by the COI, will be higher for teachers on block scheduling for two years than teachers in traditionally schools.

Results:
There is statistical evidence in support of Sub-Hypothesis 1 (C) in regard to more effective teaching behavior in 2 Year Block scheduled schools as compared to traditionally scheduled schools in regard to item DV15 “Number of Transitions in Modes of Instruction.”
Descriptive and Inferential Statistics Related to Hypothesis 2

The Modified Stallings' Classroom Snapshot (CS) was used to test Hypothesis 2. Hypothesis 2 was formulated to test whether on-task student engagement rate would be higher in classrooms where teachers have been on block scheduling as compared to teachers in traditionally scheduled schools. A description for each item on the CS was provided in Chapters 1 and 3.

Means and Standard Deviations for the Modified CS

Means and standard deviations were computed by group according to four different types of student engagement rates. Group means and standard deviations for Overall Time-on-Task (TOT), Interactive TOT, Non-Interactive TOT, and Off-Task Behaviors are presented in Table 4.8. Group means and standard deviations by individual variables on the CS are included in Appendix F.

Means and standard deviations for Overall Time-On-Task of the three groups are as follows: Group 1 (Year 3+ Block) = .790 (79%), .156 SD; Group 2 (Year 2 Block) = .837 (84%), .146 SD; Group 3 (Traditional Schedule) = .792 (79%), .148 SD.

Means and standard deviations for Interactive Time-On-Task were generated from six of the individual items on the CS. Group means and standard deviations for Interactive Time-On-Task are as follows: Group 1 = .453 (45%), .230 SD; Group 2 = .476 (48%), .304 SD; Group 3 = .460 (46%), .310 SD.

Means and standard deviations for total Off-Task behavior within the three groups are as follows: Group 1 = .209 (21%), .156 SD; Group 2 = .163 (16%), .146 SD; Group 3 = .200 (20%), .148 SD.
Table 4.8  Group Means and Standard Deviations for Overall, Interactive and Non-Interactive Time-On-Task (TOT), and Off-Task Behaviors

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Overall TOT</th>
<th>SD Overall TOT</th>
<th>Mean Interactive TOT</th>
<th>SD Interactive TOT</th>
<th>Mean Non-Interactive TOT</th>
<th>SD Non-Interactive TOT</th>
<th>Mean Off-Task Behavior</th>
<th>SD Off-Task Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>.790 (79%)</td>
<td>.156</td>
<td>.453 (45%)</td>
<td>.230</td>
<td>.337 (34%)</td>
<td>.277</td>
<td>.209 (21%)</td>
<td>.156</td>
</tr>
<tr>
<td>(3 Yrs. + Block) n=84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
<td>.837 (84%)</td>
<td>.146</td>
<td>.476 (48%)</td>
<td>.304</td>
<td>.361 (36%)</td>
<td>.286</td>
<td>.163 (16%)</td>
<td>.146</td>
</tr>
<tr>
<td>(2 Yrs. Block) n=83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3</td>
<td>.792 (79%)</td>
<td>.148</td>
<td>.460 (46%)</td>
<td>.310</td>
<td>.334 (33%)</td>
<td>.285</td>
<td>.200 (20%)</td>
<td>.148</td>
</tr>
<tr>
<td>(Traditionally Scheduled) n=83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Results have been rounded. SD = Standard Deviation.
Univariate ANOVA Results

No multivariate statistics were calculated for the time-on-task variable because the multivariate value is a linear combination of the univariate values. Analysis of Variance (ANOVA) was used to test the hypothesis relating to Overall Time-On-Task. Each of the 13 items on the CS was designated as a variable and numbered for reporting purposes. Analysis was also done to determine whether significant differences existed among the three groups on Overall TOT, Interactive TOT, and Non-Interactive TOT, as well. Chapter Three contains information on how the variables were combined to create Overall TOT, Interactive TOT, and Non-Interactive TOT.

• Univariate Effect for Overall Time-On-task

The ANOVA for Overall TOT revealed no significant differences among the groups \( [F(2, 247) = 2.55, p < .0799]. \)

• Univariate Effect for Interactive Time-On-Task

The ANOVA for Interactive TOT also revealed no significant differences among the groups \( [F(2, 247) = .13, p < .8792]. \)

• Univariate Effect for Non-Interactive Time-On-Task

The ANOVA for Interactive Time-On-Task also revealed no significant differences among the groups \( [F(2, 247) = .13, p < .8792]. \)

Summary of Results, Hypothesis 2

Results for the overall hypothesis and sub-hypotheses are presented below. Hypotheses were stated directionally.
Overall Hypothesis

Mean scores for on-task student engagement rate, as measured by the modified Stallings’ Classroom Snapshot (CS), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.

Result:

There is no statistical evidence to support the overall hypothesis.

Sub-Hypothesis 2 (A):
Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers on block scheduling for three or more years than for teachers in block scheduling for two years.

Result:

There is no statistical evidence to support Sub-Hypothesis 2 (A).

Sub-Hypothesis 2 (B):
Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers on block scheduling for three or more years than for teachers in traditionally scheduled schools.

Result:

There is no statistical evidence to support Sub-Hypothesis 2 (B).

Sub-Hypothesis 2 (C):
Mean scores for on-task student engagement rate, as measured by the modified CS, will be higher for teachers on block scheduling for two years than for teachers in traditionally scheduled schools.
Result:

There is no statistical evidence to support Sub-Hypothesis 2 (C).

Summary

This study attempted to examine the effect of extended learning time provided via the 4 X 4 block schedule on teaching behavior and student engagement rate or time-on-task at the high school level. Two directional hypotheses, together with six sub-hypotheses, were tested in the study.

Multi-variate Analysis of Variance (MANOVA) results for Hypothesis 1 relating to differences among the three established groups on effective teaching behaviors, as measured by the Classroom Observation Instrument (COI), revealed a significant multivariate effect for scheduling type. Univariate ANOVA results on each of the 15 items on the COI provided evidence that there was a significant effect for DV2 “Appropriately Uses Student Grouping,” and for DV15 “Number of Transitions in Modes of Instruction.” Post hoc analysis on DV2 was unable to detect any significant difference between the three levels of the dependent variable (scheduling type). Post hoc analysis of DV 15 revealed that Group 1 (3 Years + Block) teachers differed significantly from Group 3 (Traditional scheduled) teachers. Group 2 (2 Years Block) also differed significantly from Group 3 in the hypothesized direction. However, Group 2 and Group 1 were not significantly different as had been hypothesized.

Analysis of Variance (ANOVA) results for Hypothesis 2 relating to differences among the three established groups on student engagement rate or Time-On-Task, as measured by the Modified Stallings’ Classroom Snapshot, revealed no significant multivariate effect for Time-On-Task among the three groups.
CHAPTER FIVE
QUALITATIVE RESULTS

Introduction

Quantitative results obtained from data analysis in Phase I suggested that schools within Group 1 (3+ years in block scheduling) varied greatly in obtained mean scores on the Classroom Observation Instrument (COI). Two schools with extreme scores on the COI were purposely selected for case study development in order to explore reasons for these obtained differences. Since schools throughout the country and in Louisiana are implementing 4 X 4 block scheduling, regardless of the major contextual variables of the schools (i.e. SES of students, grade-level configuration, urbanicity of the school), the researcher chose to use the qualitative portion of this study to explore the school-level processes which could impact the implementation of block scheduling across a variety of school settings.

What school-level processes have affected the implementation of block scheduling? What is the relationship of these processes to teacher-level behaviors? Are teachers within the block scheduled school rated most effective on teaching behavior exhibiting more or less variance when compared to teachers in the negative case comparison? Previous literature suggests that “teachers in more effective schools tend to behave more similarly than do those in less effective schools,” (Virgilio, Teddlie, & Oescher, 1991, p. 161).

The case study approach allowed these issues to be explored in depth across two different school settings. Phase Two of the study also allowed the researcher to probe
for alternative or rival explanations which could have accounted for the overall
differences in Phase I findings.

Chapter Five provides the qualitative results of the two case studies conducted in
Phase II. The chapter begins with a review of case study as a research methodology and
of the sampling considerations for this phase. Results of the individual case studies are
then presented, and a cross-case analysis concludes the chapter.

Case Study as a Research Methodology

Qualitative methods allow the researcher to explore selected issues in depth and
detail (Patton, 1990). The qualitative data collection and analysis process allowed the
researcher to provide a more complete picture of the schools and to better understand
the unique contexts which may account for observed differences on the COI and time-
on-task data. The design allowed for the comparison of school-level data from the two
selected schools from Group 1 (see Table 5.11). The results from Chapters Four and
Five should be considered as complementary evidence in order to more fully understand
the effects and implementation process of block scheduling within these schools.

The research question posed in Phase II was:

What are the differing characteristics of block scheduled schools that have been
differentially successful in creating more effective classroom environments?

Primary data collection methods and data sources for the qualitative case studies
included focus group interviews, individual interviews, direct observation, and archival
documents. In addition, quantitative data were obtained from a brief demographic
survey completed by each teacher and from the School Climate Survey (McCoy, 1999).
Table 5.1  **Means and Standard Deviations on the COI in Case Study Schools**

<table>
<thead>
<tr>
<th>Classroom Observation Instrument (COI) Variable</th>
<th>Matisse School School One</th>
<th>Van Gogh School School Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keeps Students On Task</td>
<td>3.20 .582 18.15</td>
<td>2.45 1.11 45.4</td>
</tr>
<tr>
<td>Appropriate Use of Student Grouping</td>
<td>2.41 1.37 57.06</td>
<td>1.33 .77 58.4</td>
</tr>
<tr>
<td>Presents New Content and Skills</td>
<td>3.04 .915 30.11</td>
<td>2.16 .937 43.3</td>
</tr>
<tr>
<td>Command of Subject Matter</td>
<td>3.83 .389 10.15</td>
<td>2.58 1.24 48.00</td>
</tr>
<tr>
<td>Integrates Knowledge</td>
<td>1.33 .651 48.85</td>
<td>1.37 .644 46.83</td>
</tr>
<tr>
<td>Innovative Student Work</td>
<td>2.16 1.11 51.44</td>
<td>1.54 .890 57.78</td>
</tr>
<tr>
<td>Appropriate Independent Practice</td>
<td>2.33 .984 42.20</td>
<td>1.91 .792 41.37</td>
</tr>
<tr>
<td>Teacher Expectations</td>
<td>3.66 .492 13.43</td>
<td>2.54 1.26 49.94</td>
</tr>
<tr>
<td>Positive Reinforcement</td>
<td>3.12 1.00 32.09</td>
<td>2.37 .979 41.26</td>
</tr>
<tr>
<td># Interruptions Limited</td>
<td>3.50 1.00 28.57</td>
<td>2.33 .984 42.20</td>
</tr>
<tr>
<td>Maintains Discipline</td>
<td>3.58 .514 14.37</td>
<td>3.25 .965 29.70</td>
</tr>
<tr>
<td>Friendly Ambience</td>
<td>3.62 .482 13.31</td>
<td>2.87 1.00 34.88</td>
</tr>
<tr>
<td>Presence - Students' Work</td>
<td>2.00 1.12 56.41</td>
<td>1.27 .646 50.81</td>
</tr>
<tr>
<td>Displays Relate to Instruction</td>
<td>2.75 .965 35.10</td>
<td>2.13 1.09 51.37</td>
</tr>
<tr>
<td>Number Transitions/Modes Instruction</td>
<td>2.41 .514 21.31</td>
<td>1.75 .965 55.16</td>
</tr>
</tbody>
</table>

**Note:**  SD = Standard Deviation; CV = Coefficient of Variation. School One, n = 12; School Two, n = 12. Rating Scale as Evidence of Indicator: 1 = Weak or Not Used; 2 = Contradictory Evidence; 3 = Some, But Not Strong; 4 = Strong; 5 = Not Applicable.
Sampling Considerations

The initial decision to limit selection to schools from Group 1 was made due to findings from previous research literature. Fullan, et al. (1991) have suggested that implementation of most instructional changes requires two to three years before implementation may be seen on a continuous basis and before teachers begin to work together toward common goals of improving instruction. A second phase of selection involved identifying schools with the highest and lowest mean scores on the Classroom Observation Instrument (COI). Mean scores from the two schools are contained in Table 5.1. Matisse School (School One) scored above Van Gogh School (School Two) on 14 of the 15 COI variables. The coefficients of variation (a measure of variance among teachers' scores) were lower at Matisse than at Van Gogh on 12 of the 15 COI variables.

Both schools had approximately the same percentage of students on free and reduced lunch. Matisse School had a student enrollment of approximately 1450 students, while enrollment at Van Gogh School was approximately 868. The schools represented rural and suburban communities. Demographics from the two schools selected for case study are presented in Table 5.2 and may also be found in Chapter Three.

Table 5.2  | Demographics of Schools Selected for Case Studies

<table>
<thead>
<tr>
<th>School</th>
<th>School Size</th>
<th>% Free/Reduced Lunch</th>
<th>Community Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>School One (Matisse)</td>
<td>1450</td>
<td>34%</td>
<td>Suburban</td>
</tr>
<tr>
<td>School Two (Van Gogh)</td>
<td>868</td>
<td>34%</td>
<td>Rural</td>
</tr>
</tbody>
</table>
Additional demographic, behavioral, and achievement information pertaining to each of the selected schools was gathered via archival documents and from data provided by the Louisiana Department of Education (LDE) School and District Summary Progress Profiles Report (LDE, 1997-98.) These data included: Year of Block Schedule Implementation and Year of Last Administrative Change in Principalship (Table 5.3); Percent of Student Attendance (Table 5.4); Percent and Number of Students Suspended and Expelled (Table 5.5); Percent of Student Dropouts (Table 5.6); and Percent of Students Passing the State Graduation Exit Exam (GEE) by Core Subject Area (Table 5.7). They are presented in this section to enable comparisons between the two schools, and will be referred to throughout the case study results and cross analysis.

Data analysis for Phase II involved a variety of strategies. Methodology included three types of analyses. The Constant Comparison Method (Lincoln and Guba, 1985) allowed the researcher to identify units of meaning and categories from the data. In addition, the process advocated by Patton (1990) proved useful in allowing major themes to emerge from the data on which the two schools could be contrasted. Data from focus groups were analyzed using Krueger’s “big ideas” strategy (Krueger, 1988). Six final categories were used on which to contrast the case study schools.

The Phase I primary research team had collected data in both the highest scoring and lowest scoring schools. More details regarding the sample selection process, instrumentation and procedures for Phase Two of the study were presented in Chapter Three.
Table 5.3  Year of Block Schedule Implementation and Year of Last Administrative Change in Principalship in Case Study Schools

<table>
<thead>
<tr>
<th>School</th>
<th>'94-'95</th>
<th>'95-'96</th>
<th>'96-'97</th>
<th>'97-'98</th>
</tr>
</thead>
<tbody>
<tr>
<td>School One (Matisse)</td>
<td>NC</td>
<td>NP **</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>School Two (Van Gogh)</td>
<td>NP</td>
<td>NC</td>
<td>NC **</td>
<td>NC</td>
</tr>
</tbody>
</table>

Note: ** = Year of Block Schedule Implementation; NP = New Principal; NC = No Change in Principalship.

Table 5.4  Percent of Student Attendance in Case Study Schools

<table>
<thead>
<tr>
<th>School</th>
<th>'94-'95</th>
<th>'95-'96</th>
<th>'96-'97</th>
<th>'97-'98</th>
</tr>
</thead>
<tbody>
<tr>
<td>School One (Matisse)</td>
<td>93%</td>
<td>94%</td>
<td>95%</td>
<td>94%</td>
</tr>
<tr>
<td>School Two (Van Gogh)</td>
<td>91%</td>
<td>91%</td>
<td>92%</td>
<td>88%</td>
</tr>
</tbody>
</table>

Note: ** = Year of Block Schedule Implementation; State High School Average '94-'95 = 91.02%; '95-'96 = 90.62%; '96-'97 = 91.06%; '97-'98 = 90.75%.

Table 5.5  Percent and Number of Students Suspended and Expelled in Case Study Schools

<table>
<thead>
<tr>
<th>School</th>
<th>'95-'96</th>
<th>'96-'97</th>
<th>'97-'98</th>
</tr>
</thead>
<tbody>
<tr>
<td>School One (Matisse)</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Suspended In-School</td>
<td>-</td>
<td>-</td>
<td>337 (23%)</td>
</tr>
<tr>
<td>Suspended Out of School</td>
<td>386 (28%)</td>
<td>405 (27%)</td>
<td>15 (.96%)</td>
</tr>
<tr>
<td>Expelled</td>
<td>2 (15%)</td>
<td>8 (.54%)</td>
<td>2 (.13%)</td>
</tr>
<tr>
<td>School Two (Van Gogh)</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Suspended In-School</td>
<td>-</td>
<td>-</td>
<td>124 (12.8%)</td>
</tr>
<tr>
<td>Suspended Out of School</td>
<td>-</td>
<td>-</td>
<td>24 (2.5%)</td>
</tr>
<tr>
<td>Expelled</td>
<td>-</td>
<td>-</td>
<td>11 (1.1%)</td>
</tr>
</tbody>
</table>

Note: ** = Year of Block Schedule Implementation. State High School Average, Suspended In-School, '96-'97 = 8.67%; '97-'98 = 12%. Suspended Out of School, '96-'97 = 16%; '97-'98 = 16%. Expelled, '96-'97 = .80%; '97-'98 = .80%. Complete data for '95-'96 were not available.
### Table 5.6  Percent of Student Dropouts in Case Study Schools

<table>
<thead>
<tr>
<th>School</th>
<th>'95-'96</th>
<th>'96-'97</th>
<th>'97-'98</th>
</tr>
</thead>
<tbody>
<tr>
<td>School One (Matisse)</td>
<td>5.80%</td>
<td>3.53%</td>
<td>5.07%</td>
</tr>
<tr>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Two (Van Gogh)</td>
<td>12.36%</td>
<td>9.07%</td>
<td>10.91%</td>
</tr>
<tr>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** ** = Year of Block Schedule Implementation. Rate reflects Grades 9 - 12; State Average '95-96 = 11.75%; '96-'97 = 11.53%; '97-'98 = 10.20%

### Table 5.7  Percent of Students Passing State Graduation Exit Exam (GEE) by Core Subject Area in Case Study Schools

<table>
<thead>
<tr>
<th>School</th>
<th>'95-'96</th>
<th>'96-'97</th>
<th>'97-'98</th>
</tr>
</thead>
<tbody>
<tr>
<td>School One (Matisse)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language Arts</td>
<td>269 (89%)</td>
<td>341 (91%)</td>
<td>358 (94%)</td>
</tr>
<tr>
<td>Mathematics</td>
<td>285 (86%)</td>
<td>337 (92%)</td>
<td>357 (87%)</td>
</tr>
<tr>
<td>Written Composition</td>
<td>283 (94%)</td>
<td>335 (97%)</td>
<td>348 (99%)</td>
</tr>
<tr>
<td>Science</td>
<td>271 (87%)</td>
<td>282 (87%)</td>
<td>322 (91%)</td>
</tr>
<tr>
<td>Social Studies</td>
<td>269 (94%)</td>
<td>282 (93%)</td>
<td>320 (93%)</td>
</tr>
<tr>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Two (Van Gogh)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language Arts</td>
<td>203 (83%)</td>
<td>195 (84%)</td>
<td>180 (86%)</td>
</tr>
<tr>
<td>Mathematics</td>
<td>204 (68%)</td>
<td>194 (69%)</td>
<td>182 (64%)</td>
</tr>
<tr>
<td>Written Composition</td>
<td>200 (93%)</td>
<td>191 (93%)</td>
<td>175 (94%)</td>
</tr>
<tr>
<td>Science</td>
<td>168 (78%)</td>
<td>198 (72%)</td>
<td>173 (78%)</td>
</tr>
<tr>
<td>Social Studies</td>
<td>168 (92%)</td>
<td>197 (83%)</td>
<td>176 (87%)</td>
</tr>
</tbody>
</table>

**Note:** ** = Year of Block Schedule Implementation. State Averages for GEE, '95-'96 = Language Arts-86%, Mathematics-77%, Written Composition-93%, Science-82%, Social Studies, 90%; '96-'97 = Language Arts-84%, Mathematics-77%, Written Composition-93%, Science-82%, Social Studies, 88%; '97-'98 = Language Arts-87%, Mathematics-76%, Written Composition-95%, Science-84%, Social Studies-88%.

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Results - Matisse School (School One)

Background Information

Researchers visited Matisse School (School One) in early May 1999. The school is situated in a suburban school district of slightly less than 50,000 people.

The district ranked high in per capita income, exceeding the state average, with about 15% of the families falling below the poverty threshold. Primary industry included manufacturing, and the labor force consisted of approximately 58% white collar workers, 30% blue collar, and 11% service industry. The district had a relatively high level of high school graduates (74%), but considerably fewer of the population had completed college degrees (15%). Approximately 75% of the residents were white and 24% black.

The district was experiencing continued growth in population and student enrollments, causing expansion of the schools throughout the district. The district had a relatively few number of schools, but each of the high schools contained enrollments over 1000 students.

The school campus, while built in the 1980s, still looked like new. Additions and renovations were occurring throughout the buildings and on the grounds, in part due to increased enrollments. The campus was large, and it was surrounded by large fields, adding to the feeling of spaciousness. The school complex consisted of numerous buildings. Spacious, well-designed wings or separate buildings contained classrooms for individual disciplines. Very large workrooms for each discipline were provided, with filing cabinets, kitchenettes, bathrooms, work tables, and computers located in
each. Separate suites were provided for guidance and student health. Large auditoriums and practice rooms were provided for choral and instrumental music. A stadium and track facility, as well as tennis courts, were located adjacent to one of the main buildings. Outside benches were provided around the front of one building and a separate, covered "deck" with outside seating area was located by the cafeteria area for outdoor eating.

All buildings were connected by covered walkways. Classrooms were spacious and appeared well equipped, each with at least one computer. Equipment and other technology were observed in all of the classrooms. All buildings contained ample windows, flooding areas with natural light. The school was well designed to accommodate a large student body with minimal congestion. Halls were wide, lighting was good, and no congestion was observed at any point in the school buildings. A large lowered locker "pit" was located within a student commons area and allowed for viewing of students while controlling traffic congestion and flow. A book store located close to the central office sold t-shirts, sweats, and other school items. Each department area was able to offer items for sale, such as science shirts.

The campus was immaculately clean. Staff were observed throughout the day cleaning, picking up and performing maintenance activities. There was no litter and graffiti observed anywhere on campus. A large, covered outdoor seating area was provided for students. There was landscaping around the buildings, with flowers planted and blooming. The campus was an inviting place to be. Everything seemed orderly and well organized.
Administration and Staff

The school was staffed with a principal, a principal of a "school-within-a-school," and two assistant principals. Approximately 100 teachers were employed at the school. Guidance counselors, a school nurse, and special services personnel were also on staff. A permanent police officer was hired for full-time duty on the campus each day. A full-time admissions clerk was hired to handle all daily class and school attendance records, relieving much of this paperwork burden from teachers. Teachers were provided printouts each day. There was also a full-time, staffed copy center for teachers and a full-time staff development coordinator.

School Atmosphere

The overall atmosphere was inviting and friendly, yet serious about the business of education. Students, teachers, and administrators were frequently observed in personal and education-related conversation. On a personal level, administrators and teachers interacted positively with students, but always seemed in charge. During classroom time, students and teachers were focused on teaching and learning. There were no intercom interruptions of class time during any of the school observations. Even the bell between block periods was very soft and non-obtrusive.

Another unique feature observed during on-site visits were daily school bulletins which were distributed to teachers and students. One section dealt specifically with reminders for students (i.e. graduation practice, Advanced Placement (A.P.) exam schedules). The section also highlighted students for special accomplishments. Another section for teachers contained reminders about when grades were due, a list of students
excused to take A.P. tests at certain hours, advertisements regarding available administrative positions and summer positions. The newsletter took the place of morning and daily announcements over the intercom.

Teachers seemed happy to be in the school and engaged positively with students and colleagues. Lounge and workroom conversations were both of an educational and personal nature. Students and faculty alike welcomed the researchers.

There were no observed instances of disciplinary problems; teachers and administrators seemed well in control of student behavior, while the students themselves acted with decorum and appeared to know what was expected of them. Transitions between class were calm and orderly. There was no observed tardiness. Very few students were observed in hallways during class time. Hall passes were required, and the researcher observed constant vigilance by monitors for any student in the halls. Students were checked each morning upon arrival for appropriate dress according to school dress codes. Monitors selected a random number each day and checked students and their book sacks with hand-held metal detectors as they entered the building.

Responses to Interview Guide Probes, Focus Groups, and Individual Teacher Interviews

The teacher focus groups and interviews were conducted in a separate, private work room located close to the guidance area. Teachers were provided snacks as they gathered for focus groups and interviews. Two focus group sessions consisting of five teachers each were conducted at times throughout the day. In addition, five individual interviews were conducted of teachers in the sample. Teachers were asked to respond to
several general probes included on the interview guide. Answers to the general probes were summarized across the focus groups and interviews and are described below.

- Describe the Teaching and Learning Environment at the School.

Block scheduling was implemented in this school in the 1995-96 school year (Table 5.3). When asked to describe the teaching and learning environment at this school, one teacher commented, "This is almost like a private school." "The school climate here is excellent," replied another. Teachers indicated that the vast majority of the students "were great," although a few suggested that motivation will always be a factor for some students. Teachers generally agreed that students were "grade-oriented," and that student misbehavior of any kind was "simply not tolerated."

At one point, the researcher asked about whether students were allowed to "roam on and off campus due to block scheduling," and the response of one teacher was, "You don't know our principal and staff, do you? Our kids don't roam anywhere! That doesn't happen!" Teachers described very few disciplinary problems. One teacher commented that the students often complain that things are, "too tight around here." Additional teachers confirmed that students have expressed concerns about the strong stand taken on discipline and order in the school. Teachers suggested that it's a "my way or the highway" kind of approach to running the school.

They agreed that absenteeism was generally low (Table 5.4) and that class cutting, sleeping in class, fighting, verbal abuse and gang activity on campus were practically non-existent (Table 5.5). Data show that the school had a much higher than average rate for in-school suspension. This data confirm the "tightness" on the school
environment which was mentioned by several teachers. Some teachers expressed concern over the amount of time that students spend in part-time jobs and suggested that they are beginning to see some adverse effects on student performance as a result. Overall, teachers felt that most students had good attitudes, although several suggested that some needed to take more responsibility for learning.

One teacher said he felt that the learning environment here was "one of the best I've seen." The facility and "extras" offered by the school were referred to as being important to creating this positive teaching and learning environment. However, teachers also felt that the faculty and administration were most responsible for creating this academically focused environment.

- Describe Faculty and Administrator Attitudes and Relations.

One teacher described the faculty as "one big team." "We have respect for each other," replied another. "The school is unique," said one male teacher. "There are no cliques!" Other teachers generally agreed. They all agreed that they helped each other, that everyone was willing to share, and that it was a "refreshing school" in which to teach.

When asked about relations with the administration, one teacher suggested that the school had more than adequate administrative personnel. Overall, teachers suggested that the administration created an orderly, academically focused environment in which to teach. They also felt that the teachers at times "pulled the administration along," suggesting that they often came up with new ideas which were generally supported by the administration. All felt tremendous support from the administration and indicated
that administrators "backed the teachers." They also suggested that the administration was very involved in the "academic program" and classroom instruction. One referred to the school as a "well-oiled machine."

When asked about teachers' attitudes toward change, teachers replied, "We're a first to do school!" "We're the pilot people," suggested one teacher. Words used to describe the faculty were "aggressive," "into it," "progressive," "open," and "refreshing."

- Describe Your Involvement in the Decision to Go to Block Scheduling.

Teachers were asked to describe their involvement in the decision to go to block scheduling. One teacher recounted the history of block scheduling at the school, and indicated that "the school didn't go into it lightly." The "odyssey," as it was described, began around 1992-93 under a previous principal who "sent teachers all over the United States" (Table 5.3) to study block scheduling. Parents, students, teachers, school board members, and administrators were on those exploratory teams, according to the teachers.

Included in the focus group was the teacher who actually chaired the exploratory team. She recounted that the school took three years to study the concept. Approximately five of the fifteen teachers interviewed had been teaching fewer than five years and had not been personally involved in the initial decision-making process. Others suggested that they, along with all teachers at the school during that time, were totally involved in the decision. "It was our idea," said one teacher. Another teacher recalled that the school even tried out an alternative schedule called the "A-B Rotation"
for several weeks. This schedule was not liked by anyone, according to the teacher, and was abandoned after about six weeks in favor of the 4 X 4. The research and trial runs were important for building support and confidence in teachers, they suggested. In year three, the school gave notice to all parents and students. “It was a faculty-wide decision,” agreed those interviewed.

- What Were the Expectations for Block Scheduling?

Teachers suggested that students were the primary reason for going to block scheduling. “We wanted more innovation, more innovative teaching,” said one teacher. Several others echoed their remarks. “We saw it as a restructuring effort,” suggested another.

The teachers agreed that no other Louisiana district had tried block scheduling at the time, and after extensive research, they thought it was in the best interest of students. “We saw this as the best thing for our students, to educate them better,” according to one teacher. Another teacher quickly described her analysis of the reasons for moving to block scheduling. She pointed to six major reasons why the school chose block scheduling: “better discipline; better student attendance; better test scores; reducing the need for summer school; better quality of instruction -- block scheduling supported a greater variety of instructional strategies; more time with students; and more time with parents.” When asked about the administration's expectations, they suggested that they were the same: “overall school improvement.”

When asked whether those expectations have been realized, one teacher responded, “That’s yet to be seen, as far as student academic performance, but it’s
definitely brought our faculty together.” Other teachers clarified that test scores had generally improved. (Actual student-level state assessment results are noted in Table 5.7.) When compared to test scores prior to block schedule implementation, results indicated that scores of students have improved in three subject areas, held fairly constant in another (with a one point decline since ’95-96), and have wavered up and down in the mathematics area.

“It has made us think through lessons, have more collaboration, more research and more planning,” remarked another teacher. For most students, grades have definitely gone up, according to several of those interviewed. “Honor roll has tripled,” according to one teacher. Some still expressed concern over being able to cover appropriate amounts of material in the shortened time frame, and others expressed some on-going concern for impact on certain elective classes such as foreign languages and chorus.

Teachers suggested that while student attendance has improved, attendance is always a problem in high schools, and being on block creates bigger burdens for make up work.

An additional comment related to teacher attendance. One teacher said that teacher absences were down 50%.

• Were You Prepared for Block Scheduling?

“If you weren’t prepared, it was almost your fault,” according to one teacher. “Absolutely, we were all prepared,” said others. In the first exploratory years, there were early release days, but in year two, mandatory in-service began, with lots of
required Departmental-level planning and training.” Most training, according to those interviewed, was geared toward instructional strategies. Even new teachers were provided two weeks of intensive in-service. “In the summer, we did more workshops than I cared to attend,” said another. “The preparation was great, and transition was smooth.” The staff development was characterized as very positive and included very specific topics such as: cooperative grouping; forming study groups; teaching to multiple intelligences; reading and writing across the curriculum; and use of portfolio techniques in assessment. “We did it well because we were well prepared,” concluded one teacher. “We did it as a team!” Teachers expressed pride in the school-wide effort to make the transition to block scheduling. Teachers suggested that it was a time when they worked closely together to make sure that everyone was ready and prepared.

They suggested, however, that they still have room to “grow professionally.” Teachers indicated that they are a faculty that strives for excellence and that professional growth is as important to the school as is student achievement. They recognized the symbiotic relationship of teacher growth and student performance.

Describe the Impact of the Administration on Instructional Planning.

Teachers agreed that the administration was very involved with instructional planning. They're a major factor in successful implementation, according to several teachers. They described the school administration as "very consistent," especially in the areas of teacher support and student discipline. One teacher said, "They're supportive of teachers in general, supportive of academics, and supportive of teachers in regard to student discipline."
Numerous teachers spoke of the requirements that teachers build in at least three transitions in each block, and they discussed the fact that lesson plans were actually reviewed by both department chairs and the administration. They agreed that there was no latitude in this area. They also discussed other policies such as the requirement that class work had to be sent for students to the in-school discipline center each day by a certain time. One commented, "You'll get a nasty note from the office if you don't have it there."

All of the teachers were familiar with the overall school plan for improvement and indicated that their professional development activities tied directly to the plan. Teachers indicated that they were directly involved with development of the school plan and the overall goals set for the school each year. Teachers also indicated that they were involved with personnel decisions, often sitting on interview panels at the school.

They recounted several school policy revisions relating to student academics which were changed due to the request of teachers. One related to requiring seniors to take a certain course load in their senior year in order to participate in graduation ceremonies. They also discussed recent revisions to the Pupil Progression Plan aimed at encouraging students to keep up grades even in the last quarter of the year.

The assistant principal commented to the researcher in earlier conversation that the school conducted regular in-service and "show-and-tell" for anyone interested in block scheduling. Schools from all over the state, as well as out-of-state officials, have visited the school over the past two years.
The central office was characterized as "supportive." Initially, staff development was done in cooperation with the central office. However, numerous teachers commented that the district, for the most part, has allowed the school to decide on its own professional development needs for the last three years. All of the teachers suggested that the last three years have been among the most productive for them personally, with teachers directing their own staff development, provided that it complements the school improvement plan established by the school each year.

Teachers indicated that they may now choose from among departmental groups or may form interdepartmental ones for staff development. The focus now is on "study groups," said one teacher. Each study group completes a professional development plan. They characterized the professional development as "personally meaningful now."

Other teachers described the school district personnel and school board as supportive, "as long as it works." One said, "Even the lawyer is supportive." They discussed the lead in professional development that the central office took when the high school was in the exploratory phase of block scheduling. "The parish gave a lot of staff development. They wanted us to wait the third year to make sure we had studied and tried out the schedule," recounted another.

- **Describe the Impact of Block Scheduling on Instruction.**

  "Block forces you to use more techniques," reported one teacher. The teachers indicated that school policy requires three changes in instructional method during each block. Lesson plans are read and reviewed by each Department chair, and then each Department chair submits information to the school administration. "I used to only
lecture; now I do projects and group work," said one teacher. Another suggested that more technology is now used by teachers and students alike. "I also think that block has allowed us to do more in the area of research skills with students. We turn it over to the kids more. We let them select ideas and defend them."

The School Climate Survey (McCoy, 1999) provided details on teachers' responses regarding the frequency of use of certain teaching methods. Responses of the school-wide faculty, as well as the responses of those interviewed, are contained in Table 5.8 and Table 5.9, respectively. Response to the survey was voluntary. Frequency data contained in Tables 5.8 and 5.9 appear to support the comments by teachers suggesting a wide variety of classroom methods reportedly being used on a fairly consistent basis by teachers. Of the school-wide responses, only 11% of responding teachers reported using daily lecture. Approximately 17% reported using small group work on a daily basis, and the majority, 79%, indicated that they used small groups at least once per week, with most reporting use 3 - 4 times per week. Mean scores on the COI (Table 5.1) rated "Appropriate Use of Student Grouping" at 2.4, indicating some contradiction on this variable.

Frequency data also indicated that 63% of the teachers reported using projects and laboratory work at least once per week. Tables 5.10 and 5.11 provide analysis of the time-on-task data gathered in Phase I which also contained data on this variable. The frequency data show that of the observed methods, technology and laboratory work was observed 9% of the time. The reader should be reminded that observational data was collected on one day.
Table 5.8  **Frequency of School-wide Responses by Teachers on Use of Classroom Methods, as Reported on the School Climate Survey (McCoy, 1999)**

<table>
<thead>
<tr>
<th>Method</th>
<th>Matisse School (School One)</th>
<th></th>
<th></th>
<th></th>
<th>Van Gogh School (School Two)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=84</td>
<td>Almost Never (37%)</td>
<td>34 (40%)</td>
<td>12 (14%)</td>
<td>Daily</td>
<td>n=23</td>
<td>5 (22%)</td>
<td>9 (39%)</td>
</tr>
<tr>
<td>Homework</td>
<td>31 (11%)</td>
<td>21 (25%)</td>
<td>22 (26%)</td>
<td>36 (42%)</td>
<td></td>
<td>2 (9%)</td>
<td>7 (30%)</td>
<td>5 (22%)</td>
</tr>
<tr>
<td>Project/Lab</td>
<td>12 (14%)</td>
<td>42 (50%)</td>
<td>11 (13%)</td>
<td>19 (23%)</td>
<td></td>
<td>3 (14%)</td>
<td>15 (68%)</td>
<td>1 (4%)</td>
</tr>
<tr>
<td>Role Play</td>
<td>30 (36%)</td>
<td>27 (32%)</td>
<td>23 (27%)</td>
<td>4 (5%)</td>
<td></td>
<td>14 (64%)</td>
<td>6 (27%)</td>
<td>2 (9%)</td>
</tr>
<tr>
<td>Small Group</td>
<td>1 (1%)</td>
<td>28 (33%)</td>
<td>39 (46%)</td>
<td>17 (20%)</td>
<td></td>
<td>1 (4%)</td>
<td>13 (59%)</td>
<td>6 (27%)</td>
</tr>
</tbody>
</table>

**Note:** Response was voluntary.
Table 5.9  Frequency of Responses by Teachers Participating in Focus Groups or Interviews on Use of Classroom Methods, as Reported on the School Climate Survey (McCoy, 1999)

<table>
<thead>
<tr>
<th>Method</th>
<th>Matisse School (School One)</th>
<th>Van Gogh School (School Two)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Almost Never</td>
<td>1-2 Times Week</td>
</tr>
<tr>
<td>Homework</td>
<td>n=12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 (25%)</td>
<td>6 (50%)</td>
</tr>
<tr>
<td>Lecture</td>
<td>n=12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 (17%)</td>
<td>4 (33%)</td>
</tr>
<tr>
<td>Discussion</td>
<td>n=12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 (17%)</td>
<td>2 (17%)</td>
</tr>
<tr>
<td>Project/Lab</td>
<td>n=12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 (8%)</td>
<td>10 (83%)</td>
</tr>
<tr>
<td>Role Play</td>
<td>n=12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 (67%)</td>
<td>3 (25%)</td>
</tr>
<tr>
<td>Small Group</td>
<td>n=12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 (17%)</td>
<td>4 (33%)</td>
</tr>
</tbody>
</table>

Note: Response was voluntary. Total Number Teachers in Focus Groups and/or Interviews for Phase II, by School: Matisse School = 15; Van Gogh School = 12. Does Not Reflect All Teachers Interviewed or in Focus Group.
Teachers continued their comments on changes made in teaching methods and planning. “We definitely have to think through our lessons.” "In my class, I can build skills and then give students time to work with individual problems," said one teacher. Another remarked, “It helps me to organize.” One teacher concluded, “It’s been wonderful for me as a teacher. The kids are not just passive now!” One female teacher explained her previous years of frustration as she “taught her heart out.” She explained that she had been a wonderful lecturer, thinking that all of the students should have understood her material. She indicated that she was perplexed at the continuing failure of her students. Now, she indicated, she’s finally “got it.” “Now, they’re more actively engaged in the learning process, and we try to get them in the teacher role a lot.” Students really understand the material better, explained another teacher. All teachers agreed that they now have time to give personal attention to students.

- Describe Any Changes Made in Teaching Methods.

Teachers generally agreed that block scheduling had forced them to change teaching methods. Another teacher suggested, “You can’t lecture for 90 minutes; we must have three activities. It keeps me changing. Now I’ve learned what works.” She continued by saying that the different methods require student collaboration and that "we no longer spoon feed them." Several suggested that the block schedule has led to more "hands-on learning. Tables 5.10 and 5.11 contain data which seem to support that teachers are using more interactive methods.

Table 5.10 suggests that approximately 55% of the time-on-task reported for School One was recorded as Interactive. There were no recordings for “Paper and
Pencil Drill Activities” and only 7% of observed time was in “Lecture.” However 28% of recorded snapshots revealed “Students Working on Assignments or Reading Silently.” There were no observed instances of “Simulations/Role Playing/Debates/Oral Presentations.”

Table 5.10  **Means, Standard Deviations, and Coefficients of Variation for Overall, Interactive, Non-Interactive and Off-Task Behaviors on the Modified Stallings’ Classroom Snapshot (CS) Time-On-Task (TOT) Instrument in Case Study Schools**

<table>
<thead>
<tr>
<th>Stallings’ CS Time-On-Task Variable</th>
<th>Matisse School School One</th>
<th>Van Gogh School School Two</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$     SD   CV</td>
<td>$\bar{x}$     SD   CV</td>
</tr>
<tr>
<td>Overall Time-On-Task (TOT)</td>
<td>.898         .048  5.37</td>
<td>.791         .157  19.87</td>
</tr>
<tr>
<td>(90%)</td>
<td>(79%)</td>
<td></td>
</tr>
<tr>
<td>Interactive TOT</td>
<td>.549         .287  52.3</td>
<td>.295         .316  107.2</td>
</tr>
<tr>
<td>(55%)</td>
<td>(30%)</td>
<td></td>
</tr>
<tr>
<td>Non-Interactive TOT</td>
<td>.349         .279  79.9</td>
<td>.495         .277  56.00</td>
</tr>
<tr>
<td>(35%)</td>
<td>(50%)</td>
<td></td>
</tr>
<tr>
<td>Off-Task Behavior</td>
<td>.101         .048  47.4</td>
<td>.209         .157  75.00</td>
</tr>
<tr>
<td>(10%)</td>
<td>(21%)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** School One, $n = 12$; School Two, $n = 12$. SD = Standard Deviation; CV = Coefficient of Variation. Percentages have been rounded.

Data from the School Climate Survey (McCoy, 1999) also suggest more frequent use of Interactive methods (Tables 5.8 and 5.9). Teachers from the interview group and focus groups reported “Discussion” and use of “Small Groups” as the most frequently used daily classroom methods (Table 5.9). They reported a 25% daily use of “Discussion” and a 33% daily use of “Small Groups.” Fifty percent reported “Discussion” at least 3 - 4 times per week, and 25% reported using “Role Playing” at
least 1 - 2 times per week. One teacher commented that an additional benefit of the extra time in block scheduled classes was that it allowed teachers to "cover all students or to hit on the learning styles of students." Teachers described the block time as "good, very good for students," since it gives them the time to have ideas presented and practiced in several ways in one block period.

Other teachers commented that the block has allowed more integration of technology and laboratory work. "It's been great for Science." Scores from the Time-On-Task analysis (Table 5.9) indicated that students were engaged in "Technology" or "Laboratory Work" 9% of the observed time. Teachers further indicated that they used more reading strategies, journaling, concept maps, diagrams, and portfolios than when on a traditional schedule. "All I used to do was lecture, worksheets, test, and that was it." Most teachers suggested that their techniques more actively involved students now. However, one math teacher described some difficulties, due to "sequential gaps in learning," which occur because of the length of time between courses taken by students. She indicated that the math department has now required a two to three-week review of the previous course content as students enter each higher level course. "After about three weeks, they're back on track again."

- Describe the Impact of Department-level Planning.

Teachers characterized the role of departments as vital to their personal and school-wide growth. "The subject-area departments hold meetings every week," according to two of the department chairs interviewed. But, "The plan for next year will be different, and so will our professional growth plans," one continued. "We have built
Table 5.11  **Means and Standard Deviations for Individual Variables on the Modified Stallings' Classroom Snapshot (CS) Time-On-Task (TOT) Instrument in Case Study Schools**

<table>
<thead>
<tr>
<th>Stallings' CS Time-On-Task Variable</th>
<th>Matisse School School One</th>
<th></th>
<th></th>
<th>Van Gogh School School Two</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Overall Time-On-Task (TOT)</td>
<td>.898</td>
<td>.048</td>
<td>90%</td>
<td>.791</td>
</tr>
<tr>
<td>Working on Assignments/Reading Silently</td>
<td>.276</td>
<td>.241</td>
<td>28%</td>
<td>.401</td>
</tr>
<tr>
<td>Lecture or Non-Interactive Visual/Video Presentation</td>
<td>.073</td>
<td>.152</td>
<td>7%</td>
<td>.049</td>
</tr>
<tr>
<td>Discussion/Q &amp; A -- Rapid Fire</td>
<td>.007</td>
<td>.023</td>
<td>.7%</td>
<td>0</td>
</tr>
<tr>
<td>Discussion/Q &amp; A --Higher Order Thinking</td>
<td>2.73</td>
<td>.246</td>
<td>27%</td>
<td>.119</td>
</tr>
<tr>
<td>Making Assignments/Structuring Statements</td>
<td>.111</td>
<td>.18</td>
<td>11%</td>
<td>.094</td>
</tr>
<tr>
<td>Rote Practice and Drill Work with Paper &amp; Pencil</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>.046</td>
</tr>
<tr>
<td>Students/Teacher Using Technology or Laboratory</td>
<td>.092</td>
<td>.141</td>
<td>9%</td>
<td>.056</td>
</tr>
<tr>
<td>Simulations/Role Playing/Debates/Oral Presentations</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>.027</td>
</tr>
<tr>
<td>Student Assessment/Taking Test/Quiz</td>
<td>.067</td>
<td>.141</td>
<td>7%</td>
<td>0</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>.044</td>
<td>.040</td>
<td>4%</td>
<td>.088</td>
</tr>
<tr>
<td>Student Uninvolved</td>
<td>.055</td>
<td>.041</td>
<td>6%</td>
<td>.101</td>
</tr>
<tr>
<td>Being Disciplined</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>.009</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>.003</td>
<td>.008</td>
<td>.3%</td>
<td>.012</td>
</tr>
</tbody>
</table>

**Note:** School One, n = 12; School Two, n = 12. SD = Standard Deviation. Percentages have been rounded.

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in time every other week to meet during the school day, so that it’ll be easier for all staff to meet, including coaches,” explained one teacher.

All subject-area Department chairs meet together each week, as well. Teachers described the meetings as a time to conduct joint planning, discuss policy issues, and to receive information about the on-going activities of the school.

One teacher commented on one idea used last year to focus on improving instruction. Several teachers participated in a special critique of their instructional methods via videotape. One teacher described the experience as “wonderful.” After buy-in from all who chose to participate, each teacher picked a partner who helped to critique the observed lessons. A male teacher said, "I didn't realize how many times I said "you know" in just a couple of minutes." "It was a very successful learning experience for all of us," commented another.

Several teachers commented that departmental planning has helped them tremendously in planning for daily instruction and in testing. Teachers explained that because of the strong departments, they have developed core exams for students at mid-term and final. Most felt that the district-developed curriculum had provided continuity to their instruction and that the core exams were a good thing for teachers and students. The teachers received extra pay to help develop the test items, and anyone who wanted to could participate in the development.

Describe the Impact of Block Scheduling on Students.

“It’s more hands on than ever, because you have the time. As long as they’re involved, you’ve got no discipline problems.” When asked whether sleeping in class
was a problem, all teachers responded that sleeping during school was simply wasn’t allowed.

“Our honor roll has tripled due to students just taking four subjects.” “I have no problem keeping students engaged; I just keep the activities diverse,” suggested another teacher. Students like it better because the day is less chopped up, suggested several teachers. “Students now see the relevancy of what we’re teaching,” commented another.

Teachers indicated that the issue of student performance was being monitored carefully by the administration and that information is being shared with them regularly on overall student performance.

• Describe the Greatest Obstacles to Block Scheduling.

When asked about obstacles to implementing block scheduling, most teachers agreed that quality preparation time was critical to successful implementation. Other teachers suggested that teacher acceptance and buy-in was critical, as well.

One teachers said that staying organized, especially for new teachers, was important. Time management and strategies are key to successful implementation, agreed several teachers. Some teachers suggested that the pace of instruction is very different and that at times, "You feel like you never catch up. The cycle starts all over again at Christmas."

One complained about feeling rushed, especially in some "lower level classes." One also expressed concern that "you just get to know the students and then they leave."
Others listed paperwork burdens and reporting as frustrating at times, although they agreed that the reports were good for students and parents.

While they generally agreed that there are some downsides to block scheduling, all of the teachers interviewed wished to remain on the block schedule.

**Results - Van Gogh School (School Two)**

**Background Information**

Researchers also visited School Two in early May 1999. This school was located in a rural district of approximately 43,000 people. The district ranked well below the state average for per capita income, with approximately 31% of the population living below the poverty threshold. Primary industry for the area was state and local government, and the labor force consisted of 43% white collar workers, 35% blue collar, and 17% in the service industry. Approximately 61% of adults held high school diplomas, with a small number having completed college degrees (9%). The district demographic breakdown indicated approximately 69% white and 31% black in the population.

There was little industrial growth in the area, and within the school district, there appeared to be a slight decline in student enrollments over the past five years. There were very few schools within the district.

The selected high school was located on several acres across from one of the few industries in the district. The grounds appeared to be fairly well kept. The school complex had been added on to several times and contained four major buildings and an auditorium which was undergoing renovations. The school administrative area, library
and gymnasium were built in the 1970s. The other main buildings were very old, having been built in the 1950s, and were in need of serious repairs. Glass enclosed walkways joined most of the large classroom buildings.

Window panes were broken throughout the older buildings, and some sections had no air conditioning. Moveable windows in many of the observed areas also appeared difficult to open and close. Mildew and peeling paint was observed throughout the older buildings. A large teachers' lounge was located in the old building. Air conditioning did not work in the lounge, and an old Christmas bulletin board was still on display in May. The room did not appear to be used frequently.

Maintenance workers and janitorial staff were observed throughout the day, but there appeared to be a lack of personnel to keep up a campus of this size and age. Student restrooms needed attention; major repairs such as replacing ceiling tiles appeared to be beyond the capacity of the staff.

Students gathered under the covered areas during recess. A few benches were provided for student seating. The cafeteria was very small and inadequate for the size of the student body. The library was nice size, and new computer labs had been added for English and Mathematics. Most of the classrooms in the newer buildings were spacious, although lab equipment was old and there were few accessible sinks for clean up. Painted murals decorated many of the hallways, and student art work was permanently displayed outside numerous classrooms.

The school was very spread out on the grounds, making visual contact with students difficult. Lockers were strung out in hallways all around the classroom.
buildings. Numerous lockers were dented or broken. Students were regularly seen by observers in hallways, bathrooms, and other places during instructional time. One student was observed racing down the hallway during the morning Channel One presentation. No one stopped the student. The same student was observed later in the day again in the hallway during instructional time. While teachers appeared to be in control of classroom behavior, the opposite appeared true regarding students' out-of-class behavior.

Administration and Staff

The school was staffed with a principal and two assistant principals. One resource officer was shared with another school. Approximately 65 teachers were employed at the school. A guidance counselor also served students. The administrative office was staffed by at least two secretaries.

School Atmosphere

Overall, the school faculty and administration were friendly and open with the researchers. The administration and teachers were genuinely welcoming to the team and even invited us for lunch in one of the teacher's classrooms. Most were very open to discussing the school and their classrooms. Teachers appeared to have developed regular groups with whom they socialized. They did not appear to talk or work outside of those groups to any great extent during the school day. Teachers appeared to be "left alone" to manage their own classrooms.

While teachers for the most part, maintained fairly consistent discipline within their classrooms, overall discipline on the campus appeared very lax. Students were
regularly observed being tardy, hanging around hallways, and completely ignoring bell schedules. Loud screams and laughter were heard coming from hallways numerous times throughout the day. Several students hanging outside the gymnasium responded to the researcher that "we're supposed to be in drugs (education)." No adults were anywhere in sight. The students seemed to do whatever they wanted while on the grounds. No one appeared in charge, and they weren't bothered that the adult researchers were present. Hall passes were not used regularly, and teachers did not monitor the hallways during class time transitions.

The intercom interrupted instruction constantly throughout the day. Students were called repeatedly (by alphabetical order) to receive shots from the school nurse. While the staff and administration were very friendly and gracious, overall, the school seemed to lack order and a sense of purpose. There appeared to be tremendous inconsistencies in enforcement of policies and rules. Many were simply ignored by teachers, students and administrators. There appeared to be little value placed on academic time by the administration, as evidenced by the constant hall traffic during class and continual intercom announcements. The faculty and school, in general, seemed to lack direction.

Responses to Interview Guide Probes, Focus Groups, and Individual Teacher Interviews

The teacher focus group and individual interviews were conducted in the teachers' lounge. Teachers were provided with snacks as they gathered. A total of six teachers participated in the focus group and five other teachers were interviewed throughout the day. Teachers were asked to respond to the general probes included on
the interview guide. Answers to the general probes were summarized across the focus
group and interviews and are described below.

- Describe the Teaching and Learning Environment at the School.

When asked to describe the teaching and learning environment at the school, one teacher remarked, "Expectations are lax. There are no consequences." This sentiment was echoed by several other teachers who were interviewed. Teachers expressed concern over "low expectations for students," both academically and in regard to discipline.

Numerous teachers suggested that students at the school fail to take responsibility for their work. Others suggested that teachers may be doing too much to accommodate for students. Teachers frequently cited lack of parental support when describing problems at the school. Another teacher suggested that the community simply didn't value education. One teacher responded, "These kids have no families, churches, or homes."

Others expressed concern about the motivation of students. One teacher commented, "students expect that they should be entertained." Several agreed when a teacher commented, "Students put school last." One teacher commented on the fact that "students are just trying to get by. They have the ability, but they just will not perform." She went on to describe a pervasive feeling by students that "we'll water it down just so they'll have A's." "Kids are more interested in a grade than in what they are learning, and the parents are the same way," one teacher suggested.
Teachers described student absences as a "pervasive problem," and one that also emanates from the home. "Absenteeism is terrible at this school." "It's not gotten any better with the 4 X 4 either," commented one teacher, "in fact, it stayed the same, which multiplies 10-fold because they are missing so much." "While not all kids are the type we're describing here," remarked one teacher, "after missing school, many students do not even try to make up the work they've missed." Another commented that students feel like it's the teacher's job to teach them what they've missed when absent. One teacher described several instances when students checked out of school for haircuts, to go to work, and for other social functions. They expressed dismay that school is no longer first priority for many students or parents. Another suggested that the school can't do it all by themselves. Table 5.4 indicates that daily student attendance at the school has declined from 92% in 1996-97 to 88% in 1997-98.

Teachers also expressed serious concerns over the lack of enforcement of discipline codes and other rules such as dress codes and offenses for tardies. Teachers generally agreed that most behavior of the students is within the normal, acceptable limits. "But, we have the same, continuous, repeat over and over and over problems." They generally agreed that fighting was not a big problem at the school since the security guard was placed on campus. They also agreed that drugs are a big problem in the community, though they are not common on campus. One teacher suggested that you could watch the absentee list and tell when a "big shipment" has come in. Others said that class cutting was a problem and that "a severe consequence" was needed. They indicated that students are generally assigned to work in the cafeteria if they cut class.
Table 5.5 contains percentages of students suspended or expelled over the past three school years for which data are available. Data indicate that suspensions and expulsions in 1997-98 have declined, which may be in part due to the Department of Education's decision to publish this data. In-school suspension percentages for the same year paralleled the state-wide percentage at 12%, while out-of-school, reported at 13% for Van Gogh, was below the state average of 16%. No comparison data is available for the 1995-96 school year. Teachers' comments suggest that discipline is "too loose," and that disciplinary actions should be more frequently imposed and more consistently enforced.

One teacher commented on a specific case where a student was continually tardy. She indicated that she continued to send the student to the office and that the administration failed to support her when she finally said "enough." "He had been sent down three times, and each time he was sent back, ... a slap on the wrist, lunchtime detention." Another discussed a problem with cellular phones ringing in class and beepers going off during class, as well. She indicated that a group of teachers had asked the administration to "outlaw" them on campus. The decision of the administration was that they would not enforce a ban on these devices. The teacher expressed extreme frustration. In addition, almost all of the teachers interviewed commented that dress codes are no longer enforced at the school.

There was general agreement with the statement, "We've loosened our standards in the last [years] since I've been here." One said, "And now, nobody cares." "It's things like are a problem, the [lowered] expectations," another concluded.
Describe Faculty and Administrator Attitudes and Relations.

There were conflicting comments regarding overall faculty attitudes and relations. Several teachers suggested that the faculty was generally positive. Most commented that teachers got along well for the most part, and that teachers were supportive of one another. Most teachers said that they liked teaching at the school. However, one teacher who had been at the school since the 1970s said, "In the past, teachers were friends. Now they aren't really. There is little cohesiveness. At one time, this lounge used to be full, but now, rarely. Teachers seem more dissatisfied with conditions, extra responsibilities, pay. There are just too many responsibilities now besides teaching."

One teacher said, "We have some real excellent teachers here, but we need to be backed up by the administration." A teacher commented that the administration is supportive-enough of academics, and they attributed that to the assistant principal. However, the teacher continued to say, "The weakness is discipline."

Administrators were observed in classroom areas of the buildings at times during the day, and they appeared to have good rapport with teachers and students. While teachers appeared to personally like the school administrators, they indicated that "nothing is done in the office."

One teacher began by saying, "It's been a really hard year. We asked administration to crack down on discipline, to really enforce tardies, dress codes." She continued to explain that the response was that there are always exceptions, and that the administration could not wholesale prevent such activities. She said that from then on,
teachers' attitudes were seriously affected. "What's the point...there is just no consequence for the students." One teacher summarized the general feeling expressed by the group: "The structure is too loose." The teacher cited another specific example. "At lunch, two-thirds of the students walk off campus; it's dangerous," she said. One teacher remarked, "It's discouraging. I don't write them up any more. I just close my door and let them kill each other in the hall. Why do it?"

Teachers' attitudes were described by one teacher as sometimes problematic. "Attitudes can be a problem, like when they're spending classtime watching Armageddon." Another suggested that there is a "core group of workers, and others who don't." The faculty was described by one as "split, with lots of division."

When asked about attitudes toward change, one teacher suggested, "There have been lots of ideas, but not lots of implementation." Others suggested that many teachers are "set in their ways and won't change." Another added, "Teachers here are willing to try and go along with things." One suggested that the 4 X 4 schedule forced them to change and to come up with lots of good electives.

Others expressed concerns over excessive paperwork. One teacher remarked that computers should help to ease the burden but that for some reason, here, that's not been the case. Another teacher added, "Some of us just don't do those every two and one-half week progress reports any more."

Describe Your Involvement in the Decision to Go to Block Scheduling.

Van Gogh School began block scheduling in the 1996-97 school year (Table 5.3). Teachers were asked to describe their involvement in the decision to go to block
scheduling. One commented, "The movement to the 4 X 4 came from the bottom up; teachers wanted the change." One teacher recalled that the faculty voted on the move. Teachers generally agreed that they were the moving force behind the change. Several of the teachers had participated in visits to out-of-state schools and others within Louisiana during the "exploratory phase." The initial exploratory work began under the leadership of a previous principal, prior to the 1995-95 school year. Visits were coordinated by both the principal and assistant principal, as well as the central office secondary supervisor who has since retired. Much of the effort was credited to the Assistant Principal for Academics. The new principal who came in the 1994-95 year (Table 5.3) continued the exploratory efforts of the committee.

Teachers reported studying the concept of block scheduling for "a couple of years." Early work appears to have begun in the 1993-94 school year, followed by implementation in 1996-97. Teachers did not report any trial periods of implementation. Table 5.3 contains information regarding the year of block schedule implementation and stability of the principalship over a four-year period.

- What Were the Expectations for Block Scheduling?

Teachers generally agreed that they hoped the overall school climate and atmosphere would change. "Teaching seven classes a day was hard, and it was hard on the students." One recalled, "Teachers were bored; seven periods was too repetitive."

Teachers listed additional expectations for block scheduling, including: more time for individual attention with students; lower dropout rates; better test scores; greater variety of curriculum offerings; better attendance; more opportunities for
remediation other than summer; and more classes and opportunities for students to graduate on time with their peers. Teachers also suggested that they had hoped block scheduling would lead to improved student discipline.

When asked about the administration's expectations, they responded, "It's a different principal than when we first got into this." However, one teacher indicated that the superintendent of schools and school board are still not in favor of block scheduling. "We didn't get any real expectations from the current principal or the superintendent at the central office," commented another.

When asked whether their expectations for block scheduling have been realized, one responded, "Standardized test scores haven't really gone up as a whole in all areas. There have been no changes on absences."

Table 5.7 provides data regarding the attainment rates of students from Van Gogh on the state Graduation Exit Exam (GEE) assessments. Data show that students performance improved in four subject areas since the implementation of block scheduling but has declined in one (mathematics). However, attainment in many areas were still below state averages. In 1996-97, the year of block scheduling implementation, students scored on-level with state averages in two subjects, while scoring below average in three areas. When performance for 1997-98 are compared to the state averages for the same year, students at Van Gogh scored below state averages in all five areas on the GEE.

One teacher suggested that grades of students have improved and that there are truly fewer fights now due to fewer class transitions. The teacher continued by saying,
"All seniors passed the state-wide assessment program [Louisiana Educational Assessment Program, (LEAP)] this year (1998-99), and that's directly related to a special course offered this year on LEAP preparation. But it is indirectly related to the 4 X 4, because now we have the time to offer the course." Others commented that block scheduling has allowed students to take more subjects of interest to them.

One teacher commented that the block has helped teachers, "but if your a poor teacher, it becomes evident real fast." The implication was that poor teachers were quickly identified when in block scheduling. Block scheduling requires, according to the teachers, careful planning which must be done ahead of time and include a variety of methods and activities. Several of those interviewed suggested that teachers' attitudes have improved since moving to block scheduling. "Teachers have fewer lesson plans and preparations," commented another.

Were You Prepared for Block Scheduling?

Teachers indicated that they studied the block scheduling concept for two years prior to implementation. Several commented that the in-services were "well done." One teacher credited the assistant principal for academics with arranging quality training. Others credited the central office staff, namely the secondary supervisor, who was involved in initial training for the teachers.

All suggested that they were well prepared. Teachers were sent by subject area departments to visit schools and then began meeting together to discuss implementation issues. Teachers recalled that they had to have two weeks of advanced lesson plans prepared. Topics for workshops included learning styles training and time management.
While teachers indicated that they were required to prepare two weeks of lessons, teachers' comments suggest little oversight of the day-to-day curriculum planning and implementation which is needed to sustain change.

No mention was made of any trial efforts using the alternate scheduling format. Only one teacher discussed efforts to get the community involved. She recounted that some articles were put into the newspaper and that some pamphlets were developed and distributed. It did not appear that the community played a large role in the investigation or final decision for block scheduling.

- Describe the Impact of the Administration on Instructional Planning.

Teachers indicated that the assistant principal for academics was involved in curriculum planning. "He's a perfectionist," said one teacher. "He's the one we go to," said another. Teachers suggested that they followed state and local curriculum guides.

Professional development was described as "the responsibility of the central office." When asked whether teachers are asked about their staff development needs, the reply was consistently "it's done by the central office." Teachers did not know of any overall goals for professional development. There also appeared to be no plans for true personal development at the teacher level.

None of the teachers mentioned overall school goals or school improvement plans. One teacher, however, indicated that the School-to-Work program had been good for the school in that more inter-disciplinary planning was now taking place.

When asked about development of lesson plans, one teacher responded, "We turn them in, but they don't read them." She continued by saying that no feedback was
ever given, and that she knew some teachers at the school continually turned in the same three lesson plans all year long. "No one ever realized it was being done."

The central office and school board were not viewed as supportive to the faculty or to the concept of block scheduling.

- Describe the Impact of Block Scheduling on Instruction.

Several teachers explained that they are not able to cover as much material as in a traditional schedule. Others indicated that band and choir programs were suffering under block scheduling.

Some expressed concern about students being scheduled all electives in one semester and all core courses in another. Teachers said that "the administration should be correcting that problem. It's not good for the teachers or kids."

Others expressed continuing concern that the central office and school board were beginning to cut back on the number of teachers assigned to the school. This concern comes from the fact that teachers can actually carry a greater pupil/teacher load than under the traditional schedule. With proper scheduling, teachers are able to teach required subjects to students in fewer class periods, and as a result, are also able to add electives to the curriculum. This is often a reason that educators cite for going to block scheduling (Canady & Rettig, 1995). However, teachers at Van Gogh School expressed concerns that teachers are being cut by the administration, and that it will "kill off electives." "More electives -- this was a premise on which we went to block scheduling," suggested one teacher. Other teachers agreed.
Several teachers indicated that the administration had initially suggested that teachers incorporate three activities per block. However, one teacher indicated that this was not really policy and that it may or may not be followed by teachers. There was no mention of grading policies or other specific policies impacting academics.

- Describe the Changes Made in Teaching Methods.

When asked about methods, almost all teachers indicated that they use a greater variety of instructional methods now. "I'm doing more experiments now that I have 90 minutes," claimed one teacher. Teachers cited using graphing calculators, journals, projects, experiments, and other hands-on activities far more frequently than in their previous schedule. Another teacher indicated that students have enjoyed doing surveys, for example.

One teacher said, "It's hard to get them to do essays. They don't like interdisciplinary work." Others indicated that students were having difficulty transferring their skills to the state assessment program, even with the new teaching methods.

Most indicated that they try for three transitions per class. Others suggested that there is still little student grouping and little curriculum integration. When asked about how teachers keep current with their fields, one indicated, "We don't do enough of that."

Frequency data contained in Table 5.8 indicated that teachers school-wide reported daily use of "Lecture" (22%), "Discussion" (41%) and "Project and Labs" (14%). Approximately 9% reported using "Small Group Work" on a daily basis. Sixteen percent of the teachers reported "Projects or Labs" from 1 - 4 times per week,
with the majority (68%) responding that they used “Labs or Projects” 1 - 2 times each week. “Role Playing” was the most infrequently used of all methods, with 64% indicating “almost never.”

Time-on-task data (Table 5.10) indicated that only 30% of the observed classroom activities were “Interactive” in nature. Over 50% of the activities were considered “Non-Interactive,” and 21% of the activities in the class were considered “Off-Task Behaviors.” A further breakout of the activities on the modified Stallings’ Classroom Snapshot showed that 40% of the observed activities were “Working on Assignment or Reading Silently.” Six percent reflected use of “Technology” or “Laboratory Work.”

Data from the Classroom Observation Instrument (Table 5.1) suggests that the average number of transitions in methods was 1.75. Data on the COI also confirmed teachers’ responses that they were not likely to use “Small Group” instruction more than three times per week. The COI score for “ Appropriately Uses Student Grouping” was 1.33.

Only five of the original 12 teachers who were observed returned the School Climate Survey (Table 5.9). As a result, the data do not reflect all teachers from Phase I. Of those responding, one indicated daily use of “Lecture,” while others reported the following: one almost never; one 3 - 4 times per week; and two reported using “Lecture” 1 - 2 times per week. “Projects and Labs” were reportedly used by four (80%) of the teachers from 1 - 2 times per week. Four teachers (80%) responded that they almost never used “Small Groups” or “Role Playing.” Sixty percent (three teachers)
reported using “Discussion” 3 - 4 times per week, which appears to also be confirmed in the score of the item pertaining to “Innovative Student Work.” The obtained score on this item reflected a mean of 1.54. The COI score for “ Appropriately Uses Student Grouping” also appeared to corroborate the reported frequency data (mean score of 1.33).

• Describe the Impact of Department-level Planning.

All teachers indicated that department-level planning was almost non-existent. When asked how often they meet, one replied, "Not at all." Another responded, "Not often." One teacher said, "There is not much impact by departments." She indicated that teachers were willing to share with one another, however. "There is no curriculum planning in reality. We're all guilty of that," said a fellow teacher.

Teachers recalled that in the initial year of block scheduling, all department members had the same planning hour. One teacher recalled, "It had made the Department closer together." The common planning time was later eliminated due to "big trouble" with student scheduling, they explained. Teachers initially developed a scope and sequence to follow under block scheduling. But, they indicated that there had been no recent department planning or activities as in the early planning stages for block scheduling.

• Describe the Impact of Block Scheduling on Students.

Teachers agreed that block scheduling has helped some students with academic performance and grades since they take fewer courses. Several again mentioned that all had passed the state assessment this year. Table 5.7, described previously in this
section, contains the analysis of student performance on the state assessments both prior to and after implementation of block scheduling.

Some teachers expressed concern over the time gaps from when students take courses until the state test. Several mentioned that absences were still a big problem at the school (Table 5.4).

Teachers indicated that there were some school-wide focus areas for this year, including changing format of tests to be more like state assessments, and writing throughout the curriculum. Teachers described these efforts as beneficial to the students.

Student attention was described as a problem by many of the teachers. One teacher explained, "If one asks me a good question, I immediately think I've done something right today. Lately, I've found there are a lot of sleepers. They come in and put their heads down."

One teacher indicated that she really thought block scheduling was "an injustice to students." She felt that the schedule was not productive for core curriculum areas and that it had a negative impact on many electives. "As it was presented, it initially sounded good." She concluded that she didn't feel that she covered what she needed to in her class.

Teachers also expressed concern that class sizes were increasing to 32 and up per core area. They indicated that staffing was being cut by the central office since the teachers actually carried a heavier teacher/student load now that they're on block
scheduling. "That was not the idea, and that was not supposed to happen," said one teacher. Teachers felt that this trend was not in the best interest of students.

- Describe the Greatest Obstacles to Block Scheduling.

Teachers generally felt that lack of preparation time was a serious obstacle for successful implementation of block scheduling. They also suggested that dealing with makeup work by students was extremely time consuming. Also cited was the paper work burden caused by "crunching" the year. "Teachers resent the amount of paperwork we have to do," commented one teacher. One teacher cited the lack of technology for students as an obstacle in certain courses. The new computer lab was accessible for only math and English. Teachers also felt that dealing with fellow teacher absences was a significant problem when on block scheduling.

Cross-Case Comparison and Results

A cross-case study of the two schools allowed for examination of the similarities and differences which were found during the on-site data gathering and initial quantitative analysis. Phase I analysis revealed that the overall mean score on the Classroom Observation Instrument (COI) was 2.87 for Matisse School (School One) and 2.09 for Van Gogh School (School Two), with 4 being the highest possible rating. Mean scores and standard deviations for both schools on all items on the COI are provided in Table 5.1.

Dimensions of Contrast

Multiple themes obtained from analysis of the qualitative data appeared to differentiate the schools. Six major themes emerged (Patton, 1990; Krueger, 1989;
Lincoln & Guba, 1985). Identified themes included: High Expectations; Clear, Articulated Academic Focus; Atmosphere of Professionalism; Spirit of Innovation; Shared Leadership and Decision-Making; and Faculty Cohesiveness. Each of these school-level factors appears to have influenced the differential implementation of block scheduling in the case study sample. Table 5.12 provides a graphic picture of the Dimensions of Contrast used in the cross-case analysis.

**Table 5.12 Dimensions of Contrast in Case Study Schools**

<table>
<thead>
<tr>
<th>Dimensions of Contrast</th>
<th>Matisse School (School One)</th>
<th>Van Gogh School (School Two)</th>
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<tbody>
<tr>
<td>High Expectations</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Clear, Articulated Academic Focus</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Atmosphere of Professionalism</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Spirit of Innovation</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Shared Leadership and Decision making</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Faculty Cohesiveness</td>
<td>+</td>
<td>/</td>
</tr>
</tbody>
</table>

Note. Level of emphasis: + = High (Above Average); / = Medium (Average); - = Low (Below Average).

- **High Expectations for Students**

  There was a significant contrast between Matisse School and Van Gogh School in regard to level of expectations established for students. This theme may be analyzed on two levels: high expectations for student achievement and student behavior.

  Everything about School One spoke to the high standards that have been set for the
students. In regard to the academic expectations for students, the comment by one teacher that "this is almost like a private school," was a very telling one. Teachers commented that they "expected students to handle the work and to accomplish the tasks given." Another said, "They know why they're here."

While there were some comments about the lack of motivation of a few students and their attitudes being a problem to some degree, the majority of teachers seemed to feel that students were capable of achieving and that there was only a small percentage of students, "only 2 or 3," of the entire grades 9 - 12 population who wouldn't be able to pass the state assessments. Teachers did express concerns about students needing to take responsibility for their actions, particularly in regard to areas like homework. Their response to the problem was to make the issue of homework accountability a focus area in the overall school improvement plan for the year. Every teacher focused on homework accountability during the year, raising the expectations set for students in this regard. This was a team effort of administrators, teachers, and parents.

Based on interviews and observations, just the opposite seemed the case for Van Gogh School (School Two). The school seemed to lack any overall mission and generally seemed to hold lower expectations in regard to student achievement. This finding was also evidenced by the Phase I COI score for "Teacher Expectations." The mean score across all observations for the item "Teacher Expectations" was 2.54 on a scale of 1 - 4 points. The mean score for Matisse School (School One) on the same item was 3.66. The Coefficient of Variation on this item was approximately 50% for Van Gogh, indicating that teachers within the school behaved very differently from one
another on this item, regardless of the mean score. In contrast, the Coefficient of Variation for Matisse School on this item was 13%, indicating that teachers overall behaved more similarly in level of expectations set for students.

One teacher in Van Gogh School suggested that it is basically the students who decided "how far you can go and how far you can challenge them." This type of comment seemed to exemplify the pervasive mood of the faculty and student body. While some teachers individually may have set higher expectations for their classroom, there was wide variation across the observed group of teachers and the school as a whole. It was a school where expectations of the student body as a whole were minimal, and in some areas such as discipline, were basically non-existent at the school level. It was not a school where teachers or administrators consistently pushed students to higher levels of academic attainment.

Teachers in Van Gogh also seemed to comment on negative student attitudes far more frequently than did teachers in Matisse School. Numerous teachers described students as "getting by with as little effort as possible." Teachers themselves expressed negative comments about the special class for "Section 504 students," explaining that instead of being a positive way to help students it had almost the negative effect of "creating the wrong idea." Teachers felt that many students did not belong in the class and certainly didn't have severe disabilities. Another commented, "You have kids now who are just trying to get by." Still another commented, "I don't know if we're fostering that idea by letting them get away with less, or what." Teachers were not aware of school-wide goals other than simply a desire to raise the passing rate on the state tests.
None of the teachers were able to articulate specifics of that plan. Van Gogh School had no other alternative programs to meet special academic needs of students, and the in-school suspension program was not highly thought of by teachers. It was described as a "slap on the wrist."

Two areas directly relating to academic achievement were discussed by teachers at Van Gogh School in the interviews. Teachers and administrators in Van Gogh frequently cited a high failure rate for students, particularly as a result of high student absenteeism. The teachers also referenced a high level of student dropouts (Table 5.6) which was confirmed by data made available by the LDE School and District Progress Profiles Report (1999). School-level dropout data showed almost twice the percentage of students dropping out of school in Van Gogh School when compared to Matisse School.

Dropout statistics in Van Gogh for Grades 9 - 12 ranged from 11.6% in grade 9 to 13.2% in grade 12. Rates at the 10th and 11th grade were 9.4% each. School One statistics showed a much lower percentage of dropouts, ranging from a high of 7.5% in grade 9 to a low of 2.9% in grade 11. The 10th grade showed a 4.4% rate, while 12th grade averaged 5.3%. It appears that the overall low expectations for student academic achievement in Van Gogh School may have contributed to the high percentages of students leaving school without completion.

Matisse School, on the other hand, had taken proactive steps to assist learners of all levels, establishing a special alternative "school-within-a-school" program for students entering the high school. The program was established for those students...
needing additional assistance or more individualized instruction. Students who scored below the 40 percentile in English/language arts and mathematics on the state administered tests were targeted for the special program. Interestingly, the program was called "High Expectations." It provided smaller classes and more individual attention for students in need of special assistance. The special program involved a team teaching approach to help get students to grade level expectations and to raise self confidence in students. Teachers at Matisse School credited the block scheduling with allowing the school to have the time for these additional course offerings for students, yet still enabling them to graduate on time with their peers.

Another area where expectations varied greatly was in student attendance (Table 5.4). Attendance for students was very high at Matisse School. Teachers clearly indicated that student absenteeism was "not a problem at this school." Administrators were proud to report a 94% attendance rate, a full three points higher than the state average of 91%. Teachers indicated that absenteeism was not something that was tolerated by the school. They also indicated that special efforts such as dedicating a staff person as attendance clerk had improved communication with parents, resulting in a higher level of student attendance. Someone was responsible and watching, and that, they indicated, made the difference.

Student attendance was cited by teachers at Van Gogh as a serious problem. Even administrators indicated that the problem was a growing one. Data provided from the LDE indicated an 88% daily attendance rate for the school, well below that of Matisse School, and below the state average of 91%. There seemed to be no one
addressing the issue of student attendance on a daily basis; acceptance of the status quo was the order of the day. Very little seemed to have been done to address or change the high absenteeism problem.

Setting high expectations for students necessarily involves the family. There was also a marked contrast between the schools in efforts to increase parental involvement as a means to improve overall expectations for students. There appeared to be numerous efforts by Matisse School to involve parents in the educational process. Van Gogh School could not describe any recent efforts to bring parents in the schools or to include them as partners in raising expectation levels for students. It was also interesting that teachers at Van Gogh School were more likely to comment on the poor backgrounds from which many students came. They frequently alluded to the social problems in the community and lack of parental support, another indicator of lower expectations for students.

Matisse School, however, had signs and banners welcoming parents to the school, and teachers frequently commented on special efforts such as positive notes which were sent home each semester about students. They also mentioned that parents often served as volunteers, with some being hired as monitors, to watch hallways during lunch and recess so that teachers could be free to concentrate on instruction. The school had begun a "parent contract" program, where parents were asked to assist the school in seeing that students completed homework and attend to school responsibilities. While teachers did express concern about students work schedules at night, the teachers felt that with their efforts, parent involvement was improving every year. The school clearly
had made efforts in this regard. Parents were viewed as important to the overall success of their child and success of the school.

A second level of contrast related to school discipline. School-level discipline in Van Gogh was a serious problem, with students seeming to set the limits more so than administrators. While the mean score for "Maintains Appropriate Classroom Discipline" was rated 3.25 for individual teachers, the observers witnessed disregard for tardy bells, disruptive hallway behavior, and class cutting in the school as a whole. While some individual teachers may have established class discipline standards and enforced them, overall, Van Gogh clearly held lower expectations for student discipline. Teachers interviewed complained strongly about the perceived lack of support from the administration. The very idea of cell phones and beepers going off in classrooms would send most school administrators into immediate action. In Van Gogh, however, teachers were told that the administration would not enforce any policies on such devices. Teachers also complained about a lack of adherence and enforcement of the school dress code. It was now completely ignored. It is no wonder that most teachers retreated to the sanctity of their individual classrooms, with little regard for what was occurring in the school as a whole.

In contrast, Matisse teachers commented, "We run a tight ship." These teachers indicated that students sometimes complained about the carefully structured and monitored classroom and overall school disciplinary code. Expectations for appropriate discipline in School One were extremely high. Misbehavior of any kind was simply not tolerated by teachers or administrators. Adherence to school dress codes was monitored
daily, and deviations were not permitted. Consistency in enforcing discipline at the classroom and school levels was a constant theme which emerged throughout the interviews and on-site observations. The qualitative findings corroborated the high scores for "Maintains Appropriate Classroom Discipline" on the COI. Mean score for teachers in School One was 3.58, the highest within Group 1 schools. The Coefficient of Variation for the item also suggested large differences in observed teachers' behaviors in Van Gogh for this item when compared to Matisse School (Table 5.1).

- Clearly Articulated Academic Focus

Another theme which emerged from the Constant Comparative Method was that of a clearly articulated academic focus. Matisse School and Van Gogh School varied greatly on this dimension. The COI Coefficient of Variance (CV) on this item (Table 5.1) reflected the substantial difference in teacher behaviors within the two school in regard to time-on-task (Matisse = 18%; Van Gogh = 45%).

Upon entering the campus of Matisse School, researchers could immediately sense that the school was orderly, well-disciplined and that the priority was on student learning. The school operated in business-like fashion, with everyone, including students, knowing what to do and what was expected. Most importantly, they did just that. Teaching and learning, and the time required for that to occur, were the focus of the school. Everything else was secondary.

Matisse School carefully protected the academic time spent in classrooms. Intercom interruptions were non-existent. Very few students were allowed to leave classes, and only with hall passes. Students clearly knew that the school was a place for
learning and that learning was the central purpose of their time at school. It was a carefully structured environment, with the central focus of academic achievement. The administration had methodically removed any obstacles which interfered with academic instruction (i.e. student misbehavior and intercom interruptions) so that the focus could stay on teaching and learning. One had the sense that the school never let up in its vigilance to maintain that focus.

Matisse had also established clear expectations for what was to be accomplished in each academic subject. Teachers had carefully planned course content and end-of-year tests for all core subject areas. In addition to establishing curriculum content, the school had also established requirements for the type of student work to be used in calculating grades. The school established the percentages of grades to be determined by teacher-determined work (including student portfolios) and end-of-semester tests. Teachers definitely collaborated on instruction. One teacher commented, "We make a big deal out of standards and benchmarks for students." There was no guessing about who was to teach what, or when students were to master certain content. The curriculum was carefully planned across grade levels and followed by all teachers. Block scheduling was credited by almost all of the teachers as helping to improve the quality and consistency of the curriculum offered for students. The schedule allowed time for curriculum planning, test development, and development of school-wide policies that affected what and how subjects were taught. Matisse School had also developed a wide variety of elective offerings which were available to students as a result of the extra course opportunities provided via block scheduling. The school had
even established a senior jacket program focused on academic achievement where students "lettered in academics."

In Van Gogh School, however, even the researchers found concentration difficult because of the non-stop intercom interruptions during class. The problem was even worse when researchers visited the school a second time for interviews. Senior exams were taking place on the day when constant intercom messages called students out alphabetically for Hepatitis shots. Teachers were disturbed and made negative comments to the researchers about the interruptions. Many teachers openly expressed frustration.

In addition, students were constantly coming and going from the classroom. This problem was a direct result of the failure of the administration and some teachers to maintain appropriate standards for school discipline. There was not the protection of academic time that researchers observed in Matisse School. Many obstacles existed for those teachers trying to provide quality instruction. Once students entered most classrooms, teachers generally maintained an appropriate level of student discipline. However, many obstacles interfered with concentrated classroom instruction. As a result, the school as a whole did not place the value on academic class time as did Matisse School. Students certainly sensed the lack of focus on academics, as evidenced by their observed behaviors. While no serious incidents were observed, the fact was that students seemed more in control of their time than did the teachers or administrators.
Students in Van Gogh School were basically free to roam the campus and to do as they pleased. Many students observed in Van Gogh seemed to think school was more for socializing than for learning. The comment by one student about "we're supposed to be in drug [education class]" exemplified the problems with the school's lackadaisical approach to school administration. This was in stark contrast to the focus on academics in School One. As teachers from Matisse School politely stated, "No one roams at this school!"

Teachers in Van Gogh had not cooperatively planned course content since first having changed to block scheduling three years ago. Again, teachers were allowed autonomy to decide what to teach and how to teach it. Limited help and guidance were given by the administration. In addition, while offering additional electives had been a major reason for going to block scheduling, teachers complained that electives were being cut from the school offerings. There was little mention of any collaborative teacher planning.

- Atmosphere of Professionalism

The two schools may also be contrasted in regard to the "Atmosphere of Professionalism" which existed in each. As previously mentioned, Matisse School operated in a business-like manner; a "well-oiled machine," stated one teacher. Everyone, including custodians and cafeteria workers, seemed self-directed, motivated and professional in their approach to work. Even teachers' dress exemplified high standards. All men wore ties, and female teachers dressed professionally, as well.

Certainly, the additional resources made available to teachers such as the copy center

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and attendance clerk, helped to create a sense that the teachers' job was to teach. The
school had placed great priority on creating an environment in which the teacher could
be "a professional."

While Van Gogh School lacked some of the resources available to Matisse
School, the most striking difference between the schools was in the opportunities for
professional growth provided to teachers and administrators. Teachers in Matisse
School continued to experience personal growth through their own self-directed study
groups. Everyone indicated their strong commitment to continued improvement
through their professional growth plans. Teachers had control, and as a result, had
become internally motivated to constantly examine their teaching behaviors and
curriculum offerings. As a result, the sense of professionalism in School One was
extraordinarily high.

In contrast, teachers in Van Gogh School did not seem to have the same sense of
professionalism as did those in Matisse School. It was certainly not a "well-oiled
machine." While many teachers obviously worked hard at their individual levels, the
lack of overall direction from the administration had a negative influence on the sense
of professionalism of the faculty. In fact, there was a sense of futility in many teachers'
comments. A cloud of oppression seemed to engulf many of the teachers. "Why
bother," said one. Many of those interviewed had been those most involved in the
initial move toward block scheduling. The sense of professionalism which teachers
initially felt during that time had not been sustained. This feeling almost certainly is
related to the lack of support that teachers felt from both the school superintendent and school board, as well.

Without continued growth opportunities, behavior often becomes stagnant. Teachers in Van Gogh School basically had no control over professional development opportunities. For all practical purposes, their personal professional growth was largely in the hands of the central office. There appeared to be little school-wide planning or attempts to focus efforts as existed in Matisse School, and teachers seemed to have had little opportunity to learn new content or skills since the initial move to block scheduling. Teachers largely seemed to be doing what they've always done. As teachers reported, "No one is watching, anyway."

Teacher attendance is another very simple way of measuring one's sense of professionalism and commitment to work. In Matisse School, teachers and administrators reported that teacher absenteeism had gone down 50% as a result of block scheduling. Overall, teachers reported liking the new schedule and felt continued enthusiasm about work. Teachers indicted that they knew that there were dozens of people wanting and waiting to take their jobs.

In Van Gogh School, there was no such discussion about a waiting list of applicants for their positions. Perhaps as a result, teachers and administrators in School Two indicated that teacher absences were a significant and continuing problem.

•  Spirit of Innovation

Another dimension of contrast between Matisse School and Van Gogh is in the area identified as "Spirit of Innovation." In the larger school context, one had the sense
that Matisse School looked for obstacles to be overcome, and further that they looked upon eliminating those obstacles as a game of challenge. They were proud of each victory. Overall, as one teacher said, "We're the pilot people. We're the first to do everything." Examples of this spirit of innovation were everywhere. Administrators had started a daily school bulletin with sections for both teachers and students. Reminders about meetings, events, practice schedules, students attending functions away from school, and numerous other topics kept intercom announcements to a minimum. A teacher section also contained listings of professional opportunities for teachers, grading deadlines, and other important administrative matters. The bulletin served as the major communication vehicle on campus. The school also had secured an electronic message board which they mounted by the cafeteria area to flash daily messages to students. The outdoor eating area was also quite unique for a high school campus.

Another innovative idea was the development of "parental contracts" which were designed to increase parents' understanding of and involvement with the school. Teachers also spoke of the fact that teachers initiated a plan to call a particular number of parents each month and to send positive notes to parents about every enrolled student. At the individual teacher and classroom level, there was an excitement that was clearly evident in both students and teachers in Matisse School. For the most part, teachers still exhibited enthusiasm toward teaching, and students generally responded favorably.
Van Gogh School lacked the "Spirit of Innovation" that was evident in Matisse. The school seemed very traditional in most areas, and particularly in regard to instructional techniques and methods. Teachers were unable to articulate any real changes which one might consider innovative. The obstacles faced by teachers seemed overwhelming, and neither the administration or teachers seemed to muster the energy to try to tackle them. Student absenteeism and student and teacher apathy were the status quo. The campus was less than inspiring, although the majority of the campus was neatly kept.

- Shared Leadership and Decision Making

Another important area of contrast between the schools is the level of shared leadership and decision making. Teachers in Matisse School explained, "Teachers matter here. The administration listens to us." Matisse School had begun a move toward site-based management several years earlier. This move established a foundation on which strong departmental leadership has been built over the past years. Department chairs were part of the school management team which met weekly with the administration in Matisse School. The team discussed policies, procedures, personnel matters, and was generally charged with overseeing all school improvement efforts. They also served as a vehicle to communicate information and to develop and share strategies for improvement among administrators and faculty. The clearly defined communication lines were essential in informing decision making and influencing school policies. One got the feeling that everyone “knew what page they were on.” Matisse School teachers said, "We won't tolerate weak Department Chairs." They went
further to say, "We don't tolerate weak teachers." Teachers felt that they shared in decisions, and most importantly, shared in the responsibility for implementation.

Teachers in Matisse indicated that Department-level planning has been vital to their continued professional growth and to improved student achievement in the school.

In contrast, Van Gogh had very weak or non-existent Department-level impact. Researchers did not discover any indications of shared decision making at the school. Quite the contrary was true. When teachers had approached the administration about concerns with discipline, their concerns were summarily dismissed. Teachers in Van Gogh did not have a vehicle to effectively change school policies. The traditional model of school administration was clearly evident. Although the principal indicated he had high regard for the teachers, this actions indicated a limited acceptance of teachers' recommendations for change. While the administrator was very likeable and friendly, there was clearly not a shared leadership role for teachers in Van Gogh.

- Faculty Cohesiveness

Faculty relations in Van Gogh were characterized by one interviewed teacher as "split." There was evidence of the factionalism to observers, as well. There appeared to be those teachers who liked things as they were and saw no reason to change. Others, however, were vocal about their frustration with the administration. One teacher said, "It's frustrating. We have the potential to make change, and it's frustrating that we're not doing more." While most teachers were congenial, teachers were rarely observed in the lounge, and there was very limited personal or professional conversation taking place among teachers. One group of six to eight teachers had begun a regular routine of
eating lunch in one teacher's classroom. They were called "the rebels," by the principal when he observed that the researchers had been invited to eat with them. He seemed nervous about the open communication between observers and the teachers.

Another dimension of faculty cohesiveness can be measured by teachers’ expressed attitudes toward block scheduling. A number of teachers in Van Gogh expressed concerns about the block schedule and its impact on core curriculum areas. While only five teachers of the 12 observed in Phase I completed this item on the School Climate Instrument, three of the five indicated that they liked the schedule "Not very much" or "Somewhat." Two of the five indicated that they liked it "Very much." In contrast, all 12 observed teachers in Matisse responded to the item, with eight of the 12 indicating they liked the schedule "Very much." Their attitudes could certainly be an intervening variable in the level of expectations set for students and in overall faculty cohesion and commitment.

In contrast to the sense the researchers had of a non-cohesive faculty in Van Gogh, Matisse teachers were happy, appeared to work together at every available moment, and frequently met in the lounge or department-area workrooms to talk and plan. There was a feeling of a much closer faculty on both personal and professional dimensions. Overall, Matisse teachers seemed to sense that this was a special place to be and that the school was providing an "out of the ordinary" environment in which they might work. Teachers viewed their roles as highly professional and worked closely together and with the administration to improve student achievement. One even sensed that the clerical and support staff of the school shared in a commitment to excellence.
Summary

This chapter has presented the results of the qualitative analysis phase of this work. Two schools scoring at the extreme levels on the Classroom Observation Instrument were selected for development of case studies. Results of school-level focus groups and interviews were presented individually for the two schools. Background information regarding each school's demographics, administration and staffing, school atmosphere, and finally, responses to the interview guide probes were presented in narrative form. A final cross-case comparison of the two schools was developed along six dimensions of contrast: High Expectations; Clear, Articulated Academic Focus; Atmosphere of Professionalism; Spirit of Innovation; Shared Leadership and Decision Making; and finally, Faculty Cohesiveness. Matisse School (School One) exhibited very positive results along all dimensions noted, while there was wide variation in observed behaviors in Van Gogh (School Two). The data were generally consistent with findings from Phase I classroom observations.
CHAPTER SIX
CONCLUSIONS AND RECOMMENDATIONS

Overview

Proponents of 4 X 4 block scheduling have suggested that this alternative scheduling approach provides schools with the “power” to institutionalize effective classroom practices (Canady & Rettig, 1995). The primary purpose of this study was to examine the following questions:

1. Has implementation of block scheduling in Louisiana high schools resulted in the use of more effective teaching methods in secondary school classrooms as compared to traditionally scheduled classes?

2. Has implementation of block scheduling in Louisiana high schools resulted in higher student engagement rates during block scheduled classes as compared to traditionally scheduled classes?

3. What are the differing characteristics of block scheduled schools that have been differentially successful in creating more effective classroom environments?

Educators have long attempted to identify what elements of the educational system can be changed or combined to ensure that schools at all levels become more productive (Cawelti, 1995). Identifying the critical elements of restructuring and school redesign are at the heart of our quest for successful reform. As education professionals, we are constantly seeking better programs, methods, and materials which may positively impact student achievement. Indeed, each of these areas contains its own literature base and place in the area of educational research.
However, educators in the last decade have begun to focus on something far more fundamental to the educational experience -- the issue of time and the very structure of the school day. Numerous researchers have suggested that is the traditional structure of the school day which must be altered if we are to provide the opportunity for teachers to utilize strategies and techniques proven effective with today’s increasingly complex and diverse student body (Bryant, 1995; Hottenstein & Malatesta, 1993; Canady & Rettig, 1995; Marshak, 1997; Cawelti, 1995.)

Over the past decade, many high schools throughout the country, including an increasing number in Louisiana, have begun to experiment with 4 X 4 block scheduling in an attempt to restructure the school day. While only one of numerous models, the 4 X 4 block schedule approach allows students to take four subjects in extended 90-minute blocks of instructional time during one semester. This scheduling model is the most prevalent among the Louisiana high schools engaged in reform via alternative scheduling approaches.

Proponents of block scheduling have suggested that traditional scheduling practices have limited the ability of teachers to utilize “proven instructional practices and techniques, and thus, has limited the ability of students to access and master challenging academic content” (National Education Commission on Time and Learning, 1994; NASSP Curriculum Report, 1996). Proponents argue that block scheduling is a necessary step toward a new model of high school that will facilitate use of effective teaching practices (Marshal, 1997).
Previous literature has suggested that 4 X 4 block scheduling may be a catalyst for the following:

Improved instructional practice and implementation of more innovative teaching strategies besides traditional lecture, including increased use of technology and laboratory experiences, interdisciplinary activities, simulations, use of small groups, higher level discussions, student presentations in class, and a greater number of separate instructional activities (Monroe, 1989; Averett, 1994; Davis-Wiley, 1995; Salvaterra & Adams, 1995; Bryant, 1995; Buckman, King & Ryan, 1995; Sturgis, 1995; Whitla, et al., 1992);

Higher levels of student engagement as a result of more interactive teaching methods (Buckman, King & Ryan, 1995; Meadows, 1995);

Improved overall school climate, including better student/teacher relationships, less hectic pace for teachers and students, fewer student dropouts and improved student discipline (Sharman, 1990; Averette, 1994; Hackman, 1995; Buckman, King, & Ryan, 1995; Ishmer, 1996; Canady & Rettig, 1995; Canady & Rettig, 1996);

Improved student attendance (Buckman, King & Ryan, 1995);

Improved student grades (Carroll, 1994; King, et al., 1975; Reid, 1994); and

Increased opportunities for individual teacher planning, cooperative planning among faculty members, and professional development activities (Canady & Rettig, 1995; Kramer, 1996; Bryant, 1995; Smith, 1996; Davis-Wiley, 1995; Wyatt, 1996).
This causal-comparative, ex-post facto study was designed to focus on two of these areas most closely linked to classroom practice: teaching behaviors and student engagement in block scheduled classrooms. Phase I of the study involved direct classroom observation of 250 teachers grouped according to the three different levels of scheduling which were the focus for the study. Group 1 consisted of teachers in schools implementing block scheduling for three or more years; Group 2 consisted of teachers in schools implementing block scheduling for two years; and Group 3 teachers comprised the control group from traditionally scheduled schools. Data were collected to measure teaching behaviors and student engagement rate or time-on-task within the four core curriculum subjects in Grades 9 - 12. Phase II consisted of a case study of two schools which were identified from Phase I data as differentially successful in creating effective classroom environments.

This chapter presents the significant findings, methodological lessons, and implications from this study.

Restatement of the Hypotheses and Discussion of Findings

Two directional hypotheses, each followed by three sub-hypotheses, and one qualitative question formed the basis of the study. The overall hypotheses and qualitative question are restated below.

Hypothesis 1:

Mean scores on effective teaching behaviors, as measured by the Classroom Observation Instrument (COI), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.
Hypothesis 2:

Mean scores for on-task student engagement rate, as measured by the modified Stallings' Classroom Snapshot (CS), will be highest for teachers that have been on block scheduling and lowest for teachers in traditionally scheduled schools.

In addition, the following qualitative question was examined:

Question 1:

What are the varying characteristics of block scheduled schools that have been differentially successful in creating more effective classroom environments?

The significant findings relative to each hypothesis will be presented and discussed individually.

Findings for Hypothesis 1 and Related Sub-Hypotheses

Data gathered via the Classroom Observation Instrument (COI) were used to test Hypothesis 1 and related Sub-Hypotheses 1(A), 1(B), and 1(C).

The MANOVA results revealed a significant multivariate effect for scheduling type, providing statistical evidence in support of Hypothesis 1. The findings indicated that the three established groups of teachers (according to scheduling type) varied significantly when all items on the COI were considered together (Table 4.4). This finding suggested that teachers across the three groups differed in use of effective teaching behaviors.

Univariate ANOVAs were used to examine each of the 15 items or dependent variables on the COI to determine where significant differences existed among the three groups of teachers. Results revealed significant univariate effects for two items, DV2,
" Appropriately Uses Student Grouping," and DV15, "Number of Transitions in Modes of Instruction." Results were presented in Tables 4.5 and 4.6, respectively.

However, after post-hoc analysis, only DV15, "Number of Transitions in Modes of Instruction," revealed significant differences. While a statistically significant difference was found in the ANOVA for DV2, " Appropriately Uses Student Grouping," post-hoc analysis was unable to detect any significant difference between the three levels of the dependent variable.

Tukey's pair-wise comparisons for DV 15, "Number of Transitions in Modes of Instruction," revealed a statistically significant difference among all three groups of teachers on this variable. Results indicated that Group 1 (3+ Years Block) differed significantly from Group 3 (Traditional Schedule) in the hypothesized direction. Group 2 (2 Year Block) teachers also differed significantly from Group 3 (Traditional Schedule) in the hypothesized direction. However, results indicated that Groups 1 and 2 were not significantly different on this variable, as had been proposed in Sub-Hypothesis 1(A).

In summary, teachers in both block scheduled groups, Groups 1 and 2, differed significantly from teachers in traditionally scheduled schools on DV15, "Number of Transitions in Modes of Instruction." This finding indicated that they more frequently changed modes of instruction over observed classroom time, when time was held constant across observations. However, teachers within Group 1 (3+ Years Block) did not employ a greater number of transitions than did Group 2 (2 Years Block) teachers as had been hypothesized. The mean scores on the COI for this item (Table 4.6) indicated
a higher mean score for Group 2, although there was not a statistically significant difference between the two groups.

The findings related to DV15, "Number of Transitions in Modes of Instruction," seem to indicate that teachers within block scheduled schools were aware of the need to include a wider variety of instructional methods within the block scheduled time. This finding is in line with much of the survey and anecdotal literature on block scheduling in which teachers and students reported a larger number and variety of methods being used, as previously described in the overview of Chapter Six and in the Chapter Two literature review.

In contrast, obtained evidence indicated that teachers in traditionally scheduled classes used fewer transitions during observed class time. This finding is expected if one considers the time limitations imposed in a typical 50- to 55- minute period. However, confirmation of the fact that teachers within block schedules are not simply doing more of the same old stuff (i.e. lecturing for a full 90 minutes) is in itself an important finding adding to the limited empirical evidence regarding block scheduling (Wyatt, 1996).

It is important to mention that DV15 was designed to enable researchers to record the number of transitions, without regard to the appropriateness of such changes or to the quality of each instructional method which was used. Other items on the COI were designed to answer the substantive questions regarding the quality of the instructional method or activity.
Interestingly, teachers who had more experience with block scheduling (Group 1), did not necessarily employ more instructional transitions as had been projected. This finding may be due to a variety of reasons, including the possibility that the initial newness of the innovation was subsiding, that teachers might be less enthusiastic in lesson preparation, or that leadership might be waning with regard to instructional oversight. School context variables are important when analyzing these findings, and underscore the importance of the qualitative component of this study.

While post hoc analysis of DV2, Appropriately Uses Student Grouping, was unable to detect significant differences, mean scores for both groups of block scheduled schools were higher than for Group 3, the control group. The same pattern emerged as was previously described for DV15. The mean score for Group 2 was higher than the obtained score for Group 1. This finding has educational significance, indicating that block scheduled schools are using student grouping more often and doing so more effectively when compared to teachers within the traditional structure.

The fact that no statistically significance difference was found for any other variables on the COI is also important. It was hypothesized, based on the literature, that teachers involved in block scheduling would obtain higher mean scores on overall teacher effectiveness than teachers in traditionally scheduled schools. While mean scores were higher for block scheduled schools on a number of important variables (i.e. "Integrates Knowledge Across Disciplines;" "Uses Innovative Student Work;" " Appropriately Uses Independent Practice;" "Displays Student Work;" "Keeps Show on the Road;" "Minimum Number of Interruptions;" and "Maintains Discipline"), none of
these reached statistical significance. Thus, these findings are in contradiction to much of the previous theory and research which had predicted more interactive and interdisciplinary strategies within the block scheduled classrooms (Bryant, 1995; Whitla, et al., 1992; Buckman, King & Ryan, 1995).

Findings for Hypothesis 2 and Related Sub-Hypotheses

Data gathered via the modified Stallings’ Classroom Snapshot (CS) were used to test Hypotheses 2 and related Sub-Hypotheses 2 (A), 2 (B) and 2 (C). This instrument measured Overall, Interactive, and Non-Interactive Time-On-Task, as well as Off-Task Behaviors within each classroom. The modified CS provided basic frequency data for observed activities within the classroom (i.e. “Teacher/Student Using Technology or Laboratory;” “Simulations, Role Playing, Debates, Oral Presentations”).

The ANOVAs for Overall Time-On-Task, Interactive, and Non-Interactive Time-On-Task, revealed no significant differences among the groups. These findings are also important in that they contradict previous theory and research which had suggested higher levels of student engagement as a result of more interactive teaching methods being employed in block scheduled classrooms (Buckman, King & Ryan, 1995; Meadows, 1995).

A closer analysis of mean scores revealed that Group 2 schools obtained the highest Overall Time-On-Task and Interactive Time-On-Task scores, while Group 1 (3+ Years Block) received the lowest scores of all three groups for these same variables. An examination of the coefficients of variation for these variables indicated that teachers within Group 1 behaved less similarly on this item than did teachers in the other two
groups. This finding may be the result of the various school-level factors which appeared to differentiate the two schools in Phase II of the study. Overall school discipline and teachers' and administrators' expectations could have impacted the mean scores of schools within Group 1.

A closer examination of the Time-On-Task data by group revealed additional areas of interest. The amount of recorded Off-Task Behavior for Group 1 and Group 3 was roughly the same at 21%. Off-Task Behavior for Group 2 was the lowest at 16%. Recorded Overall Time-On-Task was also the same for Groups 1 and 3 at approximately 79%. The amount of Interactive Time-On-Task among the 3 groups was also very similar.

It is important to note that individual items on the CS reflect some activities which are school-level factors. For example, interruptions by intercom and other classroom visitors are recorded as Off-Task Behaviors on the snapshots, although they may be more reflective of a school-wide lack of focus on protecting academic time.

Findings Related to the Qualitative Question

Data gathered via interviews and focus group sessions were used to probe for varying characteristics of 3+ year block scheduled schools that were identified as differentially successful in creating more effective classroom environments. Schools obtaining the highest and lowest scores on the COI were selected for case study. They represented both suburban and rural areas. Numerous school-level processes were identified which appeared to impact the implementation of block scheduling within these schools. Further, data gathered through the case studies suggested that these
variables may have differentially impacted the schools’ abilities to change teaching behaviors toward more effective teaching practices.

A cross-case comparison of the two schools identified six dimensions which differentially characterized the two schools. These contrasts were in the areas of: High Expectations; Clear, Articulated Academic Focus; Atmosphere of Professionalism; Spirit of Innovation; Shared Leadership and Decision Making; and finally, Faculty Cohesiveness.

Matisse School (School One) exhibited very positive results along all dimensions noted, while there was wide variation in data obtained in Van Gogh (School Two). The qualitative and archival data from these two schools were generally consistent with findings on the COI and modified CS Time-On-Task Instruments used during Phase I (Table 5.1). Teacher behavior within Matisse School was more consistent than that of Van Gogh teachers, which suggested a variety of school-level factors may have differentially influenced implementation in these two schools.

The two schools varied significantly in regard to the level of expectations set for students. Van Gogh School seemed to lack any overall mission and generally seemed to hold lower expectations in regard to student achievement, student attendance and student discipline when compared to Matisse School. Data obtained during classroom observations, as well through archival data, supported this finding. Van Gogh School had twice the percentage of students dropping out of school when compared to Matisse. All teachers who participated in interviews and focus groups for Van Gogh expressed concerns over high absenteeism and the lack of administrative support in student
discipline. Ratings on the COI for the item "Teacher Expectations" suggested a wide variation among the teachers for this item. In Van Gogh School, policies regarding discipline were inconsistently enforced, if at all. Teachers felt that they were "on their own" in regard to enforcing school rules and policies. Many had given up trying.

In contrast, archival data and interviews for Matisse School provided evidence of a high level of daily student attendance, consistently enforced discipline, and high expectations for student achievement. Both students and teachers commented that the school was a "tight ship" and a "well-oiled machine." The school had started specific programs to improve academic performance of all students. The administration had set clear expectations for student attendance, academics and student behavior, and they enforced all rules consistently. Archival data relating to student suspensions and expulsions, as well as classroom observation data, confirmed the high level of expectations held for students in the areas of academics, discipline and attendance.

A second area of contrast involved the extent to which the schools had a Clearly Articulated Academic Focus. Interviews, focus groups, and general observational data revealed that many school-level processes had been developed by Matisse School in order to avoid interruption to academic time. New systems for checking student attendance, elimination of intercom interruptions, and carefully planned curriculum across grade levels all ensured that academic time in Matisse School was protected and well-spent by students and teachers. In contrast, little cross grade-level planning had occurred in Van Gogh since initial planning for block scheduling. Intercom interruptions were a constant nuisance. There was not the protection of academic time
that the researchers observed in Matisse School. Students’ behavior and comments seemed to suggest that many felt school was more for socialization than for any academic purpose.

The Atmosphere of Professionalism also distinguished the two schools. In Matisse School, teachers were very involved with planning their own professional development, and department-level planning was clearly evident. Teachers appeared internally motivated to improve their instruction, and professional development was ingrained in the fabric of the school. Teachers in Van Gogh School, however, had no overall plans for professional development, and what was offered was arranged and coordinated by the central office. Teachers had few opportunities to share experiences or to plan cooperatively. Teachers themselves suggested that it was an area of weakness for the school. Many teachers appeared to have resigned themselves to the status quo, retreating to the sanctity of their individual classrooms since little administrative direction or support were offered.

The Spirit of Innovation evidenced by the faculties also differentiated the two schools. Matisse School embraced challenges and appeared to constantly seek ways to conquer those challenges and to move forward. The focus was always on improving outcomes for students. They were proud to be the first in the state to try block scheduling, and equally proud of the innovative ways that they approached each implementation issue. Van Gogh teachers, on the other hand, faced many obstacles throughout each day, and many that interfered directly with their teaching. They had no
vehicle to make changes in the overall school climate, and as a result, felt overwhelmed with the daily challenges they faced. There was little or no time for innovation.

A further dimension of contrast between the two schools was that of Shared Leadership and Decision Making. Matisse School had established a pattern of shared leadership such that each teacher felt they had a voice in determining policies. Strong department leaders served as vehicles of communication both up and down the ladder. Teachers were part of the management teams which allowed for influence in policies, procedures and personnel matters of the school. In direct contrast, Van Gogh leadership was still highly centralized. Department teams rarely met. There was clearly a lack of communication and a “dis-connect” between administrators and faculty on critical issues affecting the school. No attempts were made by the administration to involve teachers in the decision-making process.

A final area of contrast was that of Faculty Cohesiveness. Some teachers in Van Gogh suggested that the faculty was more “divided” than ever. The teachers’ lounge was empty most of the day, and teachers appeared to stick to themselves. In Matisse, faculty members were frequently observed in both professional and personal conversation. Teachers reported that they constantly worked together to improve classroom performance and to improve the overall school climate. One teacher expressed that Matisse School was the most unusual school he had ever seen in terms of positive teacher interactions. Teachers viewed themselves as part of a team with a mission of improving overall student performance. Each teacher contributed equally to
that mission, and each was cognizant of the importance of that role. It was an "out of the ordinary" environment in which to work.

**Conclusions and Recommendations**

Several observations are offered in regard to the findings of this study. They are important and have implications for various audiences concerned with education and teacher preparation.

Overall, the data support the expectations of the researcher that the subject-matter knowledge of secondary classroom teachers throughout the state was quite high. Mean scores for all three groups were above 3.3 on the 4 point scale on the COI. While this finding may or may not have been influenced by professional growth opportunities made available as a result of block scheduling, it is a positive finding, and it is important information for state policy makers and the general public who may have misconceptions of the academic rigor of secondary-level teacher preparation programs. This finding was consistent throughout all three groups of teachers.

Classroom-level discipline and in general, school-level discipline, was adequately controlled by most teachers and administrators. Many of the teachers who were interviewed credited the block scheduling with improved classroom and school-wide discipline. However, discipline within the traditionally scheduled schools was also well controlled. Mean scores for classroom level discipline on the COI confirm this observation, with the mean scores by group ranging from 3.1 to 3.4. These findings contradict public opinion one frequently hears with regard to the discipline standards established in most public schools. There were some exceptions at individual school
level to this finding, as evidenced by the negative case school comparison, Van Gogh School.

In general, overall instruction in the secondary schools in Louisiana remains traditional in nature. Block scheduling has not had the projected impact on changing teaching behavior when examined over a wide variety of teachers and schools. Data indicated that there was a lack of creativity in instructional methods. Instances of time-on-task behavior for some identified practices were almost non-existent during the data collection period (i.e. "Simulations, Role Playing, Debates, Oral Presentations"). Similar findings on the COI indicated low scores on "Integration of Knowledge and Skills Across Disciplines." Likewise, group scores for "Innovative Student Work" ranged from 1.7 to 1.9, well below midpoint on the 4-point scale.

While teachers from both schools involved in case studies suggested that they were well prepared for block scheduling, differences were found in the quality and usefulness of information obtained from such professional development opportunities. Significant differences were also found in the type and structure of professional development opportunities for teachers. Data obtained during the case studies suggest that teachers may have more "buy in" to professional development when they have a part in planning professional growth opportunities, when it's not a "sit and get" type of opportunity, and when such opportunities are personally relevant to their areas of instruction.

The two schools varied greatly in regard to time spent in curriculum development and planning across grade levels and subject areas. Little evidence was
found in Van Gogh School in regard to shared instructional planning. The lack of attention to instructional planning may be an essential variable which has negatively influenced teacher behaviors as assessed via the COI. Both qualitative and quantitative data reflect the extreme differences in overall teacher effectiveness found within the two schools. Teachers must have time to jointly plan day-to-day instructional methods and curriculum content if more effective teaching behaviors are to emerge for the school as a whole.

The data also suggest the importance of leadership in sustaining any innovation. While the pattern of leadership may vary, particularly in regard to secondary schools, it is important that the principal maintain links to key members of the “network.” In Matisse School, there was a well established, shared leadership pattern involving core area department chairs who met weekly with all teachers and with the school administration. The shared leadership created a new level of teacher accountability beyond that normally established in traditional principal-centered leadership patterns. While individual personalities of principals may dictate particular leadership styles, teachers in Matisse School credited block scheduling with helping to further the shared decision making pattern of leadership now firmly in place at the school. The scheduling provided needed time for planning and sharing among faculty members and administration. The need for leadership in succeeding years of reform efforts is evidenced by the wide variation in teaching behaviors in a number of the schools studied. The data suggest that there must be someone watching, creating accountability and providing leadership for innovations such as block scheduling to be sustained.
The importance of having a clearly articulated, academic purpose for school was clearly evident in the data collected for this study. While previous research has indicated the importance of this factor, it was evident that “academic purpose” was not clearly articulated to students in Van Gogh school. This factor is perhaps more critically important in block scheduled schools since students actually spend fewer total minutes per year in each subject when compared to traditionally scheduled classes. The lack of academic focus (i.e. time lost due to intercom interruptions, students in hallways, lack of instructional focus for teachers) at Van Gogh School certainly influenced the obtained scores on the COI, and seems to have been a factor in implementation of block scheduling.

Recommendations for Practice

1. Implementation of block scheduling will be most effective when other school-level context variables (i.e. student discipline problems) are firmly in check. Teachers must feel supported and that overall school-level factors are controlled so that they may be free to focus on improving instruction.

2. Shared patterns of leadership appear to be important for creating accountability and in sustaining innovations and reforms such as block scheduling over the long-term. Administrators should contemplate the importance of this finding prior to embarking on implementation.

3. Teachers should be involved in planning for professional development. A large portion of professional development activities should be specific to core content areas and involve joint planning with other faculty. Staff development must be
focused on the appropriate design of curriculum and how to use more innovative and creative teaching methods. Teachers must be reminded of the research base on effective teaching, observe each other in teaching practice, and have designated time for interdisciplinary planning if teaching behavior is to change.

4. There must be agreement on key skills and objectives for each course and subject area if block scheduling is to be successful in improving overall outcomes for students at the high school level (Benore, 1989).

**Significance of the Study**

This research study has added to the literature in two important and unique ways. First, the study involved direct classroom observation in order to examine the teaching behaviors and student engagement rates in high schools employing 4 X 4 block as compared to traditional schedules. The study fills a void in the literature base on 4 X 4 block scheduling and other scheduling approaches in that the research is based on extensive classroom observation. Almost all of the previously available literature consisted of survey methodology and anecdotal reports, with little empirical evidence regarding actual practices. The results of the study are important to education professionals, including classroom teachers and those who are charged with administration and policy-making.

Second, the study attempted to measure teaching behaviors against what research has identified as most effective practices, and to determine whether there were differences among teachers in block scheduled schools as compared to a traditionally scheduled control group. The study is significant in that it provides a picture of day-to-
day classroom instruction and student engagement occurring within the core curriculum areas in the state's high schools. An added dimension of this study was the attempt to examine teaching behavior and student engagement rate within schools in various stages of block schedule implementation (i.e. three or more years as compared to two years).

Recommendations for Further Study

Methodological Lessons from the Study

Several sampling, instrumentation and methodological lessons were learned by conducting this study. They will be presented according to these three areas.

While it was the researchers' desire to conduct direct classroom observations, the enormity of this task was not evident until after the proposed sampling strategy was approved by the Doctoral committee. While this study proved to be professionally stimulating, it was at a considerable cost in time and money. Data collection efforts of this magnitude may best be organized through departments of education, research centers, or universities where resources may be more plentiful. Logistical arrangements for such a study were also more time consuming than anticipated.

There was difficulty in interpreting the difference between some variables on the Stallings' instrument. For example, it was sometimes difficult to decide whether an activity was lecture or question/answer. Careful discussion with all observers helped to clarify these instrumentation issues. More revision of the CS is probably required.

There was also some difficulty in determining the level of proper analysis for this study. While data in Phase I were analyzed at the teacher level, additional analysis at the school level at some point in the future may be helpful in interpreting particular
nuances of the data. The analysis at teacher level provided the best method for
addressing the stated hypotheses.

Prolonged engagement over multiple days would enhance both the in-class
observation data and case study development. However, this would not be practical in a
study of this size, but could be informative in studying particular findings arising from
this data.

A final methodological issue which presented the most difficult threat to the
validity of these findings was that of confounding variables which may have influenced
the results of the study. Careful matching of the groups according to relevant
demographic factors provided some measure of control for these variables, but not for
all of them.

Areas for Further Research

Related to an aforementioned methodological issue, further study of the affect of
certain context variables on implementation of innovations is suggested. Freeman
(1997), for example, suggested that rural schools appear to ignore the instructional core
when involved in efforts to improve schools. The study of context variables and their
affect on implementation of school change is an area where additional research is
needed. An interesting design for further case studies might be to select highly rated
block scheduled schools (on effective teaching) from a wider variety of contexts. Case
studies could address how schools from these wider contexts successfully adapted to
block scheduling.
The role of shared leadership (i.e. the role of department chairs or other identified leaders) in regard to implementing and sustaining educational reform also requires further study. This area significantly differentiated the two schools that were chosen for case study development.

Longitudinal studies are truly needed to ascertain the long-term effects of innovative approaches to restructuring such as block scheduling. While the current study identified only one area in which significant differences were found among the three established groups of teachers, it is conceivable that three years is not enough time to change the behaviors of an entire faculty. Block scheduling deserves to be studied over time in order to determine its true long-term significance to educational reform and teaching practice.

When studying the previous attempts at increased academic flexibility during the 1970s and 1980s, Goldman (1983) asked a question which is still relevant to today’s experimentation with block scheduling. His question was simply, “Does the innovation produce better results than the system it replaces?”

In many ways, data from the current study suggests that the answer to the Goldman question is, “Yes.” Almost all teachers reported a desire to stay with block scheduling, and many have credited improved student achievement, improved student discipline and other positive school changes to the 4 X 4 schedule. But block scheduling is “not an end in itself” (Canady & Rettig, 1996, p. xix). It will not automatically result in changes in teaching behaviors or improved student outcomes. It is simply another innovation which may, when carefully implemented and nurtured over
a period of years, lead to organizational growth and improvement. While the new
structure appears to provide many positive opportunities, particularly the time for
incorporation of more innovative teaching methods, most aspects of teaching behavior
have not yet significantly changed. Certainly, those administrators and teachers who
ventured into this new area should be applauded for making a courageous move to break
from the traditional time structure in secondary schools. However, more time may be
needed to determine whether block scheduling is the first step toward the new model of
high school in which effective teaching practices are institutionalized.
REFERENCES


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APPENDIX A: CLASSROOM OBSERVATION INSTRUMENT

<table>
<thead>
<tr>
<th>Rating Scale for Scripted Notes — Evidence of Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>Weak/Not Used</td>
</tr>
</tbody>
</table>

1. Get the show on the road (must have 85% time on task to code 4) ........................................... 1 2 3 4 5
   Classes start promptly; % time on academics vs. social/managerial; orderly and reasonably disciplined environment (students know what to do & do it).

2. Appropriately uses student grouping ........................................................................................... 1 2 3 4 5
   Task is appropriate for student grouping; student-team learning approach used; group problem solving & investigation used; students use variety of resources; students analyze & evaluate information; student as worker/teacher as coach.

3. Presents new content and skill ................................................................................................... 1 2 3 4 5
   (must have at least 3 components to code 4)
   Teacher provides overview; gives detailed instructions/explanations; new skills phased in while old being mastered; everyone understands what they're doing.

4. Command of subject matter ......................................................................................................... 1 2 3 4 5
   Teacher has firm grasp of subject; no factual errors made in presentation; teacher is able to provide additional information on points of student interest.

5. Integrates knowledge and skills across disciplines ...................................................................... 1 2 3 4 5
   (must tap at least 2 disciplines to code 4)
   Students learn to use minds well, with complex thinking skills addressed; activities call for interdisciplinary approach to problem solving; demonstration/exhibition of mastery condition of passing.

6. Uses innovative student work activities (must take at least 50% of time to code 4) .................. 1 2 3 4 5
   Activities require higher order thinking, student creativity, planning, performance, and/or physical activity such as might be involved in experiments, interviews, or model building. Teacher-centered lecture, textbook, workbook, work sheet-bound lessons avoided.

7. Appropriate use of independent practice (must take less than 35% of time to code 4) .......... 1 2 3 4 5
   Some silent seat work; teacher or aide monitoring to ensure student engagement; busy work limited; seat work reinforces skills

8. Teacher establishes high expectations ......................................................................................... 1 2 3 4 5
   Overall high teacher expectations for achievement.

9. Teacher uses positive reinforcement ......................................................................................... 1 2 3 4 5
   Clear, specific academic-related praise and/or other rewards used.

10. Limited number of interruptions (1 or none to code 4) ......................................................... 1 2 3 4 5
    Number of interruptions limited (i.e., students coming into room; intercom; janitor).

11. Maintains appropriate discipline/classroom behavior ............................................................ 1 2 3 4 5
    Few discipline problems; those that arise are handled quickly and with minimum disturbance to other students.

12. Creates a positive classroom climate (Friendly ambience) .................................................... 1 2 3 4 5
    The class seems like a friendly place.

13. Characteristics of room
A. Presence of students’ work ........................................................................................................... 1 2 3 4 5
B. Classroom displays relate to instruction ...................................................................................... 1 2 3 4 5

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CLASSROOM OBSERVATION SCRIPTING FORM

1. Get the Show on the Road (Time-on-task)
   
   
   
   

2. Appropriately Uses Student Grouping
   
   
   
   

3. Presents New Content and Skills
   
   
   
   

4. Command of Subject Matter
   
   
   
   

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5. Integrates Knowledge and Skills Across Disciplines

6. Innovative Student Work Activities

7. Appropriate Use of Independent Practice

8. Teacher Establishes High Expectations

9. Teacher Uses Positive Reinforcement
10. Number of Interruptions


11. Maintains Appropriate Discipline/Classroom Behavior


12. Creates a Positive Classroom Climate (Friendly Ambience)


13. Characteristics of Room
   A. Presence of Students' Work


   B. Classroom Displays Relate to Instruction


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14. Miscellaneous Notes

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

15. Number of Transitions in Modes of Instruction during this Observation

(i.e., From Whole Class Lecture to Small Group Work) ____________

Description of Each Change:

1. From: ___________________________ To: ___________________________

2. From: ___________________________ To: ___________________________

3. From: ___________________________ To: ___________________________

4. From: ___________________________ To: ___________________________

5. From: ___________________________ To: ___________________________
# Classroom Observation Sheet

**School:**

**Teacher:**

## Demographics/Data

<table>
<thead>
<tr>
<th>School Number</th>
<th>Treatment Group</th>
<th>Teacher Number</th>
<th>District Number</th>
<th>Observer Number</th>
<th>Interacter Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Date:**

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Start Time (Hr</th>
<th>Min)</th>
<th>End Time (Hr</th>
<th>Min)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Subject(s):**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Number of Students Present:**

**Number of Teachers in Classroom:**

**Number of Volunteers Present:**

**Number of Others Present:**

**Grade Level:**

---

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Classroom Observation Instrument

1. Set the tone on the road (must have 81% time on task to code 4) ........................................... 2
2. Appropriate use of student grouping ......................................................................................... 3
3. Present new content and skills (appropriate transitions in lesson) ........................................... 4
4. Command of subject matter ..................................................................................................... 5
5. Integration of knowledge and skills across disciplines ............................................................ 6
6. Innovative student work activities (must take at least 59% of time to code 4) ......................... 7
7. Independent practice (must take less than 15% of time to code 4) ........................................... 8
8. Teacher expectations ................................................................................................................... 9
9. Positive reinforcement ................................................................................................................ 10
10. Number of interruptions (1 or none to code 4) ...................................................................... 11
11. Discipline ................................................................................................................................ 12
12. Friendly ambiance .................................................................................................................... 13
13. Characteristics of room
   A. Presence of students' work ...................................................................................................... 14
   B. Classroom displays relate to instruction ................................................................................ 15

NOTES:

Indicate the number of transitions in Modes of Teaching/Instruction during this Observation.

= = = = =
# APPENDIX B: MODIFIED STALLINGS' CLASSROOM SNAPSHOT

## Time-On-Task

Classroom Observation Snapshot

<table>
<thead>
<tr>
<th>School:</th>
<th>District:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher:</td>
<td></td>
</tr>
<tr>
<td>Subject(s):</td>
<td>Grade Level(s):</td>
</tr>
</tbody>
</table>

**Date:** Month _________ Day ___________ Year ____________

Day of Week __________

<table>
<thead>
<tr>
<th>Obs. Start Time</th>
<th>Obs. End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># Students in Room</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># Teachers in Room</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># Aides in Room</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># Volunteers in Room</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># Parents/Visitors in Room</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Others Present</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total # Changes in Modes of Teaching/Instruction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Coding:

- T = Teacher
- A = Aide
- O = Other
- I = Independent
- I = Individual (1)
- S = 2-10 (small group)
- L = 1 Less than whole group
- E = Everybody

Observer _______________________________

---

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<table>
<thead>
<tr>
<th>Activity</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
<th>Column 5</th>
<th>Column 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working on Assignments/Reading</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Lecture OR NOTES</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Interactiveoral presentation</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Discussion/Question &amp; Answer</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Making Assignments/Data Entry</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Note Practice</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Student/Teacher Interaction</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Simulations/Role Playing/Debate/Oral Presentation</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Student Assessment/Testing/Quiz</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Student Uninvolved</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Student Disciplined</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>Teacher</td>
<td>Aide</td>
<td>Other</td>
<td>Indep.</td>
<td>Teacher</td>
<td>Aide</td>
</tr>
</tbody>
</table>
### TEACHER SURVEY

Thank you for helping with this research project. Please return this survey to the main office today, if possible. 

**PART 1:** Indicate the extent to which you agree or disagree with each item below. Mark one response per item.

<table>
<thead>
<tr>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can trust on most staff members to help out anywhere, anytime. Even though it may not be part of their official assignment...</td>
</tr>
<tr>
<td>Most of my departmental colleagues share my beliefs and values about the central mission of the school...</td>
</tr>
<tr>
<td>The level of student misbehavior (e.g., noise, horseplay, or defiance in the halls, cafeteria, or student lounges) in this school interferes with my teaching...</td>
</tr>
<tr>
<td>Many of the students I teach are not capable of learning the material I am supposed to teach...</td>
</tr>
<tr>
<td>The amount of student tardiness and class cutting in this school interferes with my teaching...</td>
</tr>
<tr>
<td>I receive duties and paperwork that interfere with my job of teaching...</td>
</tr>
<tr>
<td>The department chair or curriculum area coordinator's behavior toward the staff is supportive and encouraging...</td>
</tr>
<tr>
<td>Teachers in this school are continually learning and seeking new ideas...</td>
</tr>
<tr>
<td>There is a great deal of cooperation among all staff members...</td>
</tr>
<tr>
<td>There is broad agreement among the entire school faculty about the central mission of the school...</td>
</tr>
<tr>
<td>This school seems like a big family; everyone is so close and social...</td>
</tr>
<tr>
<td>The attitudes and habits students bring to my class greatly influence their chances for academic success...</td>
</tr>
<tr>
<td>The level of student drudgery in this school interferes with my teaching...</td>
</tr>
<tr>
<td>I have sufficient time in each class period to give most of the students I teach the individual attention they need...</td>
</tr>
<tr>
<td>More of the class preparation I need to do can be completed during my planning period...</td>
</tr>
<tr>
<td>I get to know the strengths and weaknesses of most of the students within the first month of school...</td>
</tr>
<tr>
<td>There is enough time to do all the things I want to do with my students in each class period...</td>
</tr>
</tbody>
</table>

**PART 2:** How often do you do these things with your students?

<table>
<thead>
<tr>
<th>Task</th>
<th>1-2 Times</th>
<th>3-4 Times</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Submit homework assignment...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Lecture (whole group)...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Open discussion...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Project and/or lab work...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Role playing...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Small group work...</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Teacher Survey (continued)

<table>
<thead>
<tr>
<th>Question</th>
<th>Alternatives</th>
<th>Yes</th>
<th>No</th>
<th>Part 1</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. My school uses this scheduling format</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. I like the scheduling format used at my school</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**PART 1:**
1. Career degree to which item below is a problem with students at your school.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not a Problem</th>
<th>Minor Problem</th>
<th>Moderate Problem</th>
<th>Serious Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. Absenteeism</td>
<td></td>
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<tr>
<td>27. Class cutting</td>
<td></td>
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<tr>
<td>28. Drug and/or alcohol use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Gang activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Physical conflicts among students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Possession of weapons</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Evading the curriculam</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Teacher absence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Vandalism</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35. Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Teacher School Profile Section

16. Your ethnicity:
- **Black**
- **Hispanic**
- **White**
- **Other**

17. Your gender:
- **Male**

18. What subject do you primarily teach?
- **English**
- **Mathematics**
- **Science**
- **Social Studies**
- **Other**

19. Are you certified for all subjects you teach?
- **Yes**
- **No**

20. How many total years teaching experience do you have?
- **0-3 years**
- **4-6 years**
- **7-9 years**
- **10-12 years**
- **13-15 years**
- **16+ years**

21. How many years have you been at this school?
- **0 years**
- **1-2 years**
- **3-4 years**
- **5-6 years**
- **7-8 years**
- **9-10 years**
- **11-12 years**
- **13-14 years**
- **15-16 years**
- **17-18 years**

22. What is your highest degree?
- **Bachelor's**
- **Master's**
- **Specialized**
- **Doctorate**

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APPENDIX D: PHASES I AND II DOCUMENTS USED IN CORRESPONDENCE WITH PRINCIPALS, SUPERINTENDENTS AND TEACHERS; TEACHER CONSENT FORMS

Introduction and On-Site Protocol for Phase I of the Study
To be Used in Phone Calls and Fax with Superintendents and Principals
Karen Soniat and Mary Helen McCoy - Principal investigators

Purpose of the Study:

To study instructional practices and climate in high schools. 21 schools have been selected for the study based on a school population range and on geographic distribution throughout the state. The SDE is also interested in the overall findings and is cooperating in the study.

We are interested in observing, in a non-obtrusive way, what occurs in an ordinary school day. Two researchers will visit the school for one day, with the possibility of one follow-up day in the spring.

Teacher and school confidentiality will be assured. A consent form will need to be signed by teachers and the principal. Data will be used for 2 doctoral level dissertations in education.

Components:

1 Questionnaire for all teachers at the school taking a maximum 10-15 minutes to complete. Questionnaires will be distributed and collected on the same day, if possible.

Principal interview regarding school climate that will take less than 30 minutes.

Classroom observations of 12 randomly selected core subject-area teachers (certified in S.S., Science, Math, or English/Language Arts).

What We Need from the Principal:

Roster and class schedule for each teacher. Principal will be asked to eliminate from roster any non-certified teachers or teachers in their initial (1st) year of teaching or 1st year at the school.

Principal or assistant principal to be available for 30-minute interview.

Assist in collecting any unreturned questionnaires and return via pre-stamped envelope.
TEACHER CONSENT FORM FOR CLASSROOM OBSERVATION

TITLE OF RESEARCH STUDY:

Effects of Structural Components on Teaching and Students in Louisiana's High Schools

PROJECT DIRECTOR:

Karen Soniat, LA Department of Education, Principal Investigator
(225-342-3355)
[Charles Teddlie, Ph.D., LSU Faculty Advisor]

PURPOSE OF THE STUDY:

The purpose of this study is to explore the effects of school structural components on teaching and students in Louisiana high schools. Teachers in core subjects of English/Language Arts, Science, Math and Social Studies have been randomly selected for classroom observation. The observation will last approximately 40 minutes.

The study will provide valuable information regarding activities in Louisiana's high schools. Your participation will benefit researchers and practitioners who seek to improve education.

This consent form is provided for each participating teacher. Your participation is entirely voluntary, and you may withdraw consent and terminate participation in the study at any time without consequence.

Names of teachers will not be attached to the data, and confidentiality will be protected. If there are concerns, please feel free to contact the principal investigator noted above.

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

_________________________  ___________________________  ______________
Signature of Teacher        Printed Name of Teacher        Date

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On-Site Protocol Document Distributed to Teachers
for Phase II

(Name) High School Teachers Are Being Asked to Participate
in Brief Discussions with Karen Soniat and Mary Helen McCoy
for LSU Dissertations on School Climate and Instruction in Louisiana High
Schools

(DATE)

Location and Time: Beginning of Planning Period -- Teachers’ Lounge

Earlier this year your school graciously agreed to participate in Phase I data collection for two
dissertation projects regarding Louisiana High Schools. We very much enjoyed our visit
to__________(School) in ________(date). Phase II of the studies require that 2 schools who have
been involved with block scheduling for 3 or more years be selected for teacher-level discussions.

We would like to have a brief discussion with a number of core subject area teachers, either individually
or in a focus group, or in whatever way will be least intrusive for the school. We are working within
teachers’ regularly scheduled planning hours or preparation times so that there will be no interruption of
classroom instruction.

The list of teachers includes those who may have been observed in our earlier visit, and also includes
other core subject department chairs and teachers who are “off” at certain blocks. Some teachers will be
asked to participate in individual interviews which have been designed to last approximately 40
minutes. Others will be asked to participate in a small focus group(s) designed to last a little over an
hour. All interviews will cover general school climate and instruction. Responses are confidential and
will be aggregated to school, not teacher level, for analysis. Pseudonyms will be used in place of school
names. The data will be used in a qualitative case study to illustrate the contrast of two different schools
currently involved with block scheduling.

These two studies will add valuable research to the available data on high schools and particularly to the
literature on high schools in block scheduling. Your participation would be greatly appreciated.
Without your cooperation, our research would not be possible. We are indebted to teachers and schools
who have allowed us the opportunity to experience your schools and classrooms.

<table>
<thead>
<tr>
<th>TEACHERS ASKED TO PARTICIPATE IN DISCUSSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Block</td>
</tr>
<tr>
<td>(Names)</td>
</tr>
</tbody>
</table>

Teachers who may be asked to substitute (in case of absences of above teachers):
(Names)
TEACHER CONSENT FORM FOR INTERVIEW OR FOCUS GROUP

TITLE OF RESEARCH STUDY:

Effects of Structural Components on Teaching and Students in Louisiana's High Schools

PROJECT DIRECTOR:
Karen Soniat, Principal Investigator (225-342-3355)
[Charles Teddlie, Ph.D., LSU Faculty Advisor]

PURPOSE OF THE STUDY:

The purpose of this study is to explore the effects of school structural components on teaching and students in Louisiana high schools. Teachers in core subjects of English/Language Arts, Science, Math and Social Studies who were observed in Phase I of the study are being asked to grant interviews or to participate in focus group discussions. The interviews will last approximately 45 minutes, while the focus group will be slightly over one hour. Each session will be tape recorded for review only by the researcher. Additional colleagues who serve as department chairs and teach core subjects may also be asked to participate.

The study will provide valuable information regarding activities in Louisiana's high schools. Your participation will benefit researchers and practitioners who seek to improve education.

This consent form is provided for each participating teacher. Your participation is entirely voluntary, and you may withdraw consent and terminate participation in the study at any time without consequence.

Names of teachers will not be attached to the data, and confidentiality will be protected. If there are concerns, please feel free to contact the principal investigator noted above.

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

________________________________________  ____________________________________
Signature of Teacher                  Printed Name of Teacher

Date ____

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PRINCIPALS' AND SUPERINTENDENTS' PERMISSION FORM
Used for Both Phases of the Study

School / Code: ____________________________________________
Parish: ________________________
Principal: ________________________
Superintendent: ________________________
Permission Granted: ______ Yes ______ No
Date of Visit: ________________________

School / Parish Information:

Phone: ________________________ Fax #: __________

Address:

Person Spoken To or Secretary: ________________________

School Start Time: ___________ End: ___________

Number on Faculty: ________________________

Special Concerns/Notes:
________________________________________________
________________________________________________

Directions:
________________________________________________
________________________________________________
________________________________________________
________________________________________________

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APPENDIX E: PHASE II QUALITATIVE INSTRUMENTATION

Interview Guide and Probes
Demographic Survey

Phase II: Questions
School: _________________________ Teacher/Group__________________________

LEARNING ENVIRONMENT:
1. Describe the overall learning environment in this school.

2. Describe faculty and the administrations' attitudes and relations.

ININVOLVEMENT:
1. Were you involved in the decision to go to block scheduling? If so, describe your involvement.

EXPECTATIONS:
2. Do you have a clear understanding of why your school went to block scheduling?

A. What did your principal hope to see happen in terms of students and teachers?

Have those things happened?

B. What were your expectations for block scheduling...
   - for the school as a whole?
   - for you individually?
   - and for students?

Have those things happened?

PREPARATION:
3. How much time did you have to prepare for block scheduling?

A. Was there any special in-service prior to block scheduling? If so, what kind?
B. Were you asked about your staff development needs? How?

C. Does your school have a plan for continuous staff development? Can you tell me about it?

INSTRUCTION:

4. How involved is the administration in your instructional planning? Give examples.

A. Have they explained what they think instruction should look like in block scheduling?

B. What role does the Central office play?

C. Are there others who have impacted instructional planning?

5. Have your teaching methods changed as a result of block scheduling? If so, how?

A. What are you doing now that you didn’t do before?

B. How frequently do you do those things in a week?

C. How has block affected your lesson preparation time?

IMPACT OF DEPARTMENT-LEVEL PLANNING:

6. How frequently do you meet as Department members?

Do you meet more or less often now that you’re in block scheduling?

7. Did Department-wide planning occur during transition to block scheduling?

A. Describe the impact that Department-level planning has had on your teaching and instruction?

B. What do you do when you meet?
IMPACT ON STUDENTS:

5. What change has block scheduling made on students ....
   A. Academics?
   B. Motivation?
   C. Attention in Class?
   D. Other Areas?
   E. Are you aware of any data that's been collected or analyzed to look at student performance in the block schedule? Describe...

OPINIONS:

6. Have you been asked your opinions of block scheduling?
   A. Do you like the regular or block schedule better?
   B. What helped you the most in making the change to block scheduling?
   C. What have been the biggest obstacles?
TEACHER INTERVIEW PROFILE

Your Gender:  
_____ M  
_____ F  

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

How many total years teaching experience (counting this year) do you have?  
_____ 2 - 4  
_____ 5 - 9  
_____ 10 - 14  
_____ 15 - 19  
_____ 20+  

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

What is/are the grade level(s) of MOST of your students?  
_____ 9th  
_____ 10th  
_____ 11th  
_____ 12th  

What is your highest degree?  
_____ Bachelors’  
_____ Masters’  
_____ Specialist  
_____ Doctorate  

Are you certified for all the subjects you teach?  
_____ Yes  
_____ No  

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### APPENDIX F: GROUP MEANS AND STANDARD DEVIATIONS BY INDIVIDUAL VARIABLES ON THE MODIFIED STALLINGS' CLASSROOM SNAPSHOT (CS)

<table>
<thead>
<tr>
<th>Group</th>
<th>Variable on CS</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DV1. Working on Assignments/Reading Silently</td>
<td>.220</td>
<td>.248</td>
</tr>
<tr>
<td></td>
<td>DV2. Lecture or Non-Interactive Visual/Video Presentation</td>
<td>.103</td>
<td>.210</td>
</tr>
<tr>
<td></td>
<td>DV3. Discussion/Question/Answer – Rapid Fire</td>
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<td>.130</td>
</tr>
<tr>
<td></td>
<td>DV4. Discussion/Question/Answer – Higher Order Thinking</td>
<td>.222</td>
<td>.260</td>
</tr>
<tr>
<td></td>
<td>DV5. Making Assignments/Structuring Statements</td>
<td>.060</td>
<td>.100</td>
</tr>
<tr>
<td></td>
<td>DV6. Rote Practice and Drill/Work with Pencil &amp; Paper</td>
<td>.017</td>
<td>.100</td>
</tr>
<tr>
<td></td>
<td>DV7. Students/Teacher Using Technology or Laboratory</td>
<td>.073</td>
<td>.190</td>
</tr>
<tr>
<td></td>
<td>DV8. Simulations/Role Playing/Debates/Oral Presentations</td>
<td>.031</td>
<td>.140</td>
</tr>
<tr>
<td></td>
<td>DV9. Student Assessment/Taking Test/Quiz</td>
<td>.021</td>
<td>.074</td>
</tr>
<tr>
<td></td>
<td>DV10. Social Interaction</td>
<td>.70</td>
<td>.084</td>
</tr>
<tr>
<td></td>
<td>DV11. Student Uninvolved</td>
<td>.124</td>
<td>.110</td>
</tr>
<tr>
<td></td>
<td>DV12. Being Disciplined</td>
<td>.004</td>
<td>.013</td>
</tr>
<tr>
<td></td>
<td>DV13. Classroom Management</td>
<td>.011</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Variable on CS</th>
<th>Mean</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>DV1. Working on Assignments/Reading Silently</td>
<td>.164</td>
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<td>DV2. Lecture or Non-Interactive Visual/Video Presentation</td>
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<td>DV3. Discussion/Question/Answer – Rapid Fire</td>
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<td>DV4. Discussion/Question/Answer – Higher Order Thinking</td>
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<td>DV5. Making Assignments/Structuring Statements</td>
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<td></td>
<td>DV6. Rote Practice and Drill/Work with Pencil &amp; Paper</td>
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<td></td>
<td>DV7. Students/Teacher Using Technology or Laboratory</td>
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<td>DV8. Simulations/Role Playing/Debates/Oral Presentations</td>
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<td>DV9. Student Assessment/Taking Test/Quiz</td>
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### APPENDIX F CONTINUED

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<td>Discussion/Question/Answer — Rapid Fire</td>
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<td>.230</td>
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<td>Social Interaction</td>
<td>.076</td>
<td>.101</td>
</tr>
<tr>
<td></td>
<td>Student Uninvolved</td>
<td>.093</td>
<td>.069</td>
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<tr>
<td></td>
<td>Being Disciplined</td>
<td>.004</td>
<td>.001</td>
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<tr>
<td></td>
<td>Classroom Management</td>
<td>.025</td>
<td>.059</td>
</tr>
</tbody>
</table>
VITA

Karen Meredith Soniat du Fossat was born in Baton Rouge, Louisiana, on July 12, 1954. She is the daughter of Joyce and Joel (Shank) Meredith.

She was raised in Ascension Parish and attended East Ascension High School where her father served as principal. After graduating in 1972, she attended Louisiana State University. Ms. Soniat received a bachelor of science degree in secondary art education in 1975, and later returned to earn a master of education degree in educational technology in 1980. Further graduate study earned Ms. Soniat additional certifications in educational administration and supervision.

Ms. Soniat began her teaching career at Baker Middle School in East Baton Rouge Parish, where she served as a middle-junior high school art teacher. She also taught middle school art, enrichment courses, and journalism for six years in the Ascension Parish Schools. Ms. Soniat joined the staff of the Louisiana Department of Education in the early 1980s, serving as a Program Manager in the Office of Research and Development. She assisted in data collection during the early stages of the Louisiana School Effectiveness Study under direction of Charles Teddlie, Ph.D., and other key researchers. Ms. Soniat has since worked as a special assistant to both the Deputy Superintendent and State Superintendent of Education, and spent six years as a special assistant to the director of the state office of special education. She has served in a similar capacity for the past seven years for the Office of Student and School Performance. As an Education Executive Administrator for the Louisiana Department
of Education, Ms. Soniat has primary responsibilities for policy development and legislative coordination for K-12 education.

She has been married to Lyle M. Soniat du Fossat, Ph.D., for the past 18 years.

She has one 11-year old daughter, Meredith Margaret Soniat.
Candidate: Karen Meredith Soniat

Major Field: Educational Leadership and Research

Title of Dissertation: Effects of the 4 x 4 Block Schedule on Teacher Behavior and Student Engagement Rate at the High School Level

Approved:

[Signatures]

Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination:

3 September 1999