Block Scheduling: The Effects Of Extended Periods Of Class Time On Student And Teacher Perceptions Of The Instructional And Professional Climate Of A Secondary School

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Block Scheduling: The Effects of Extended Periods of Class Time on Student and Teacher Perceptions of the Instructional and Professional Climate of a Secondary School

by

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Submitted in partial fulfillment of the requirements for the Degree of Doctor of Education

Seton Hall University

1999
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DEDICATION

This dissertation is dedicated to my good friend and buddy,

Virginia "Ginny" May Charron.

There was never a word I was writing, or book I was reading

that I did not think of you. This work is dedicated to

your loving memory ("high five wink-wink").
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CHAPTER I

Introduction to the Study

"An invasion of armies can be resisted but not an idea whose time has come."

Victor Hugo

According to Theodore Sizer (1984), America's schools are in dire shape. High dropout and failure rates and extremely low test scores only serve to reinforce the belief that school reform and restructuring are necessary components for improving the educational process for our children. Fundamental to such reform is the need to re-examine how students are scheduled for learning activities.

Concentrating specifically on secondary schools, Sizer (1984) does not believe that programs that move students along every 45 minutes in lockstep fashion (among teachers who see hundreds of students a day) are effective. He states that this schedule is a "totally mindless system that results in intellectual chaos for the kids" (p. 39).

In most secondary schools across the United States and Canada, the Carnegie Standard is used to determine how much instructional time and how many credits a student should receive in a particular class. Once a student completes and passes the course, he/she is awarded a number of credit hours that are applied to graduation. This type of time scheduling
had its beginnings in early, industrialized America when time studies of factory workers were performed to examine their efficiency at fixed workstations. In an attempt to bring similar uniformity to the educational process, this type of structure with fixed workstations was applied to the schools. As a result, a factory-like system of education evolved, with students placed in a "production line" form of learning. Teachers were expected to create an acceptable product in a fixed amount of time. This type of scheduling has remained relatively unchanged for over 50 years (Carroll, 1994) and has resulted in many high schools resembling factories - with classrooms as isolated workstations with limited purposes, used only during specific parts of the day. Students became subject to the needs of a fixed master schedule: grouped, tracked and assigned for the duration of their high school careers. Teachers remained in the same departments and in the same classrooms for years at a time, teaching the identical curriculum to a rotating group of students for their entire careers. There is clearly little flexibility in this type of scheduling (Krause & Krause, 1995).

Many changes have occurred in education since the Carnegie Standard Unit was first introduced. Although some may disagree, many students, especially those identified in this study, are not learning in the same environment as they were in
the early part of the century when this Carnegie model was first introduced. Today, many urban high schools especially those in low, socio-economic urban areas, are extremely large (over 1,500 to 3,000 students) and very impersonal. Buckman, King & Ryan (1995) suggest that many of the students who go to these schools are "passive learners who lack the motivation to work hard" (p.10). In addition, they write that the curriculum is outdated and fragmented, without any "real world" applications. Because of these changes, learning environments must be restructured to accelerate and enrich the academic performance of today's youth and adapt to the demands of an increasingly technological world. The factory-like 45-minute rotation of students from class to class no longer addresses these basic educational needs. Classroom teaching must be enhanced to deliver classroom instruction in a more efficient manner (Huff, 1995). School administrators, teachers, parents and the community must be more responsive to the changing needs of the changing society. Edwards (1995) framed the issue succinctly: "The structure of the educational system itself inhibits school improvement efforts" (p. 25). In response to these major changes, many educators feel that high schools must be restructured to place greater emphasis on personalizing students' education. No longer can student seat-time (amount of time students are required to be instructed in specific
courses) be equated to completion or mastery of that subject.

Statement of Problem

Believing that high school students would benefit from a restructuring of time, many school districts across the nation have begun experimenting with "block scheduling," a model whereby the school year is divided into two or three semesters. Every student can take two or 4 courses per semester. Each of the courses consists of classes 80 - 90 minutes in length (or longer, depending on the model) (Canady & Rettig, 1995). Advocates see block scheduling as an effective way to meet the educational needs of today's students while improving the basic structure of the educational system. Through manipulation of instructional time and student schedules, many schools have implemented some variation of block scheduling into their secondary school curriculum. This change from the traditional 8 period day is being recommended by educators in the hope that it will improve student learning by providing more time on task. It is also expected to encourage teachers to readjust strategies so classes become more student focused and responsive to identified student needs.

Strong interest in block scheduling has also developed
over the last 5 years because educators, businessmen and women, parents and community leaders are seeking more effective ways to organize instruction and use classroom time more efficiently. This potential benefit of using intensified time blocks for learning has increasingly become a focal point in the arena of educational reform. Few definitive studies, however, exist that demonstrate whether this type of scheduling positively affects the instructional climate for children to learn or the professional climate for teachers to teach. As an educator for 29 years, at the high school level for all but one of those years, this researcher has seen a strong correlation between student success and an improved professional climate developed by implementing extended periods of time. Having taught for 27 years in a 40-minute traditional period, and then having the opportunity to teach in an 80-minute block, I have witnessed a positive change occurring within the extended time block. My rationale for writing this paper is to determine whether the students and staff within the district have also observed this change for the better.

In 1979, Walberg, Shiller and Haertal reported on a summary of over 2,500 research efforts to determine what the characteristics of an effective school and classroom are. The variables affecting quality schools differ, but a common
characteristic found woven throughout all the studies was that effective schools must have a safe and orderly climate that is conducive to learning and student achievement. For a school to be effective, a good school climate must be present. What has been reported to date is that block scheduling can help influence this school climate because it positively encourages the variables that affect it. Those variables that affect student climate are better student attendance, stronger emphasis on academics, fewer classroom interruptions, more personalized instruction for students, improved student/teacher relations and, most important, more time on academic learning (Edwards, 1995; Huff, 1995; Jablonski, 1994; Schoenstein, 1995).

**Purpose of the Study**

Lindelow, J., & Mazzarella, J.A. & Scott, J.C. & Ellis, T.I. and Smith, S.C. (1989) define school climate as the feeling an individual gets from the experiences within a school building. Climate is to the organization what personality is to the individual (Halpin & Croft, 1962). Chamberlin (1971) suggests that climate is a "subtle spirit" in the minds of the teachers and students that may not be exactly described. Sergiovanni (1979) states that school
effectiveness and enhanced instruction cannot be sustained without the presence of a favorable school climate, and the relationship of school climate to extended blocks of time will determine whether or not a school is operating effectively with this type of scheduling.

Instructional climate and learning are strongly connected. The relationships that teachers have with students and vice versa have a direct impact on the student learning. If the instructional climate of a building is not congenial, students will not learn. Improving school climate will improve student outcomes (Krug, 1989).

This paper will determine through a student survey instrument and teacher survey instrument whether a restructuring of time to provide extended periods of teaching will positively benefit students and teachers. For the purposes of this paper, the student climate will be defined by the term "instructional climate." The instructional climate will measure on the survey instrument the students' attitudes and feelings towards school. Questions that define instructional climate will include students' perceptions of: (a) School spirit and students' relations, (b) whether they have time to do things in school, (c) knowing and relating to other students, (d) learning and engaging with other students, (e) attitudes toward learning, (f) behavior in
class and in the hallways, (g) levels of boredom, (h) attitudes towards schoolwork, (i) quality of their teachers, (j) feelings of whether or not teachers care about them, (k) and feelings towards the block schedule.

For the purposes of this paper, teacher climate will be defined by the term “professional climate.” Professional climate will measure on the survey instrument the teachers' attitudes and feelings towards school and their profession. Questions that define professional climate will include teachers' perceptions of: (a) attitudes and feelings towards community, (b) attitudes towards shared norms and values within the school building, (c) student learning, (d) collaboration (reflective dialog, deprivatization, interdependent roles), (e) influence/empowerment, (f) respect and support on the job, (g) attitude towards opportunity (including access to expertise) and openness to improvement, and (h) their jobs as they relate to their lives outside of school.

Also included in this definition of professional climate are the teachers' perceptions of the 80-minute block. Questions on the instrument include whether the block: (a) facilitates student achievement, (b) maintains order and improves student behavior, (c) fosters quality education, and (d) improves teacher work life.
In addition, this paper will determine through an analysis of the questions on both student and teacher survey instruments whether block scheduling promotes a more positive learning environment within the school building and the classroom.

**Research Questions**

This study will be guided by the following questions regarding block scheduling and organizational climate in a secondary school:

1. Are there instructional benefits for high school students who have been scheduled for extended periods of class time?
2. Does block scheduling affect the instructional climate of a high school?
3. Are there professional benefits for high school teachers using a schedule of extended periods of class time?
4. Does block scheduling affect the professional climate of a high school?

Each research question will be directed and operationalized by the questions on the student and staff survey instruments.
Limitations of the Study

In the New Jersey urban school district selected for this study, high school administrators were directed to infuse block scheduling into the 4 comprehensive high schools in September 1996. The 4x4 block (4 classes of 80 - 90 minutes each scheduled for each day) was implemented with two 90-day semesters. Students could earn up to 20 credits a semester. A district committee had been working on restructuring of the high school day since August 1995 and developed a block scheduling plan. The Board of Education adopted the plan, and it was recommended that it be implemented in September 1996. Potential limitations include:

1) Some felt that it should have been piloted in one school to determine its effectiveness and,

2) The district’s large transient population with students moving from one high school to another at a high rate during the school year may obscure program effects.

For the purposes of this study, data will be collected from each of the district’s 4 comprehensive high schools. The time frame for the study was two years 1996-1998.
Significance of the Study

The National Education Commission on Time and Learning (1994), an independent panel convened by Congress in 1994, suggested its report that time was "the missing element in the school reform debate." The report went on to state that the traditional 6 hour school day and 180-day year, "be relegated to museums as an exhibit of our educational past" (p.52). The report also urged schools to be less rigid in how they use time. In fact, it advised the use of block scheduling and an extended school year.

The district that has been selected for this study has been under the operation of the New Jersey Department of Education for 9 years. Still, student academic performance in the 4 comprehensive high schools has consistently been below state minimum levels of proficiency on the High School Proficiency Test (HSPT 11, previously HSPT 9) in all three areas of measurement, Reading, Mathematics and Writing.

Table 1 shows the passing percentages of students in the district's 4 comprehensive high schools on the 1997 and 1998 Spring HSPT 11. The Spring HSPT 11 is the second opportunity during the school year for students to pass the test.
### TABLE 1

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>Reading</th>
<th>Math</th>
<th>Writing</th>
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<tr>
<td></td>
<td>Percent Passing</td>
<td>Percent Passing</td>
<td>Percent Passing</td>
</tr>
<tr>
<td></td>
<td>Spring '97</td>
<td>Spring '98</td>
<td>Spring '97</td>
</tr>
<tr>
<td>H.S. #1</td>
<td>51.5</td>
<td>53.8</td>
<td>74.5</td>
</tr>
<tr>
<td></td>
<td>Spring '97</td>
<td>Spring '98</td>
<td>Spring '97</td>
</tr>
<tr>
<td>H.S. #2</td>
<td>47.7</td>
<td>43.4</td>
<td>52.3</td>
</tr>
<tr>
<td></td>
<td>26.0</td>
<td>35.1</td>
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<tr>
<td>H.S. #3</td>
<td>43.2</td>
<td>39.3</td>
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</tr>
<tr>
<td></td>
<td>44.8</td>
<td>50.0</td>
<td></td>
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</table>

**Note.** Table 1 displays the per cent of students in the 4 comprehensive high schools under study who passed the 1997 and 1998 spring implementation of the High School Proficiency Test. Minimum level of proficiency (MLP) is scored at the 75th percentile.

The school day for most students consisted of remedial classes in preparation for the HSPT 11, effectively eliminating the possibility of students taking electives to provide broader educational opportunities and experiences in their school day. As well, in the 1996-97 school year, the district's drop out rate was over 14% (District Strategic Plan 1995-2000, Annual Report of Progress, 1997).
The district determined that a restructuring of time in high schools was an essential first step to reverse the downward trend of student failure that had developed in the high schools. Also, if a commitment were made to extended blocks of time, the teaching program must shift from teacher-centered lectures and didactic methodology to student-centered, active and authentic learning strategies. The traditional Carnegie model for scheduling must be replaced by enhanced blocks of time that provide opportunities for more integrated, connected and relevant thematic projects, enabling students to develop critical thinking skills and engage in more collaborative learning/team building experiences. If implemented correctly, it was expected that such scheduling modifications would positively affect these areas of student learning.

Moreover, high schools today are filled with culturally diverse student populations who have a variety of student learning styles. Also, there is a growing perception that our high schools are not preparing many students for work or college. With valid, in-depth, on-going staff development, teachers could seek to vary and modify their strategies to address these issues and provide more student-centered classes. If, through block scheduling, students could focus on fewer classes, teachers could get to know their students
better because of a lessened student load, students' individual needs could be better addressed and teacher-student workloads could be made more manageable, then this initiative might prove to be the catalyst to effect major, positive reform.

In 1983, after a 5 year study of high schools that was co-sponsored by the National Association of Secondary School Principals and the Commission on Educational Issues of the National Association of Independent Schools, Sizer (1983) recommended that there be radical changes in the structure of high schools. In the same year, the National Commission on Excellence in Education in its *Nation at Risk* (1983) report indicated that there was a "crisis" in our American high schools and that drastic reform was needed. The reform efforts through the last two decades have strongly emphasized the need for all students to meet world class standards. Bulach and Malone (1994) suggest that reform is a continual process, possibly like that of planting a seed. There must be proper soil or "climate" for the seed of reform to sprout and grow so that it produces a healthy plant or effective education. This paper will determine whether extended periods of instructional time in high schools can promote a more positive instructional and professional environment and help to produce a more effective school.
Definition Of Terms

The following list defines the terms used in this report:

1. A/B Block—Each semester, students take 8 90-minute classes, but classes meet every other day, 4 on day A and 4 on day B.

2. At Risk—Describes students with socio-economic challenges, such as poverty or teen pregnancy, which may place them at a disadvantage in achieving academic, social, or career goals. Such students are deemed "At risk" of failing, dropping out, or "falling through the cracks" at school.

3. Block Scheduling—Intensive scheduling of school time into longer blocks or units of classroom time. Block scheduling increases the length of the traditional class period and carves out more time for instruction by reducing the amount of time students spend getting from one class to another as well as the amount of time teachers spend taking attendance and on other administrative matters. Blocks can run from 80 to 180 minutes depending upon the type of restructuring implemented. Block scheduling has become an innovative component in a total restructuring effort by American high schools.

4. Carnegie Unit—In New Jersey in order for a student to receive 5 credits, he/she must have instruction in
required courses at least 8100 minutes per year. In the case of a 4x4 block schedule, the minutes remain the same, but the classes are extended into 80 - 90 minute blocks in 90 days. The Carnegie unit represents a credit towards the completion of a core of high school courses. Developed in the early 1900's to set norms for curriculum and course time in public schools across the country, these are named after the Carnegie Foundation for the Advancement of Teaching, which first suggested the practice.

5. Critical Thinking-The mental process of acquiring information, then evaluating it to reach a logical conclusion or answer. Increasingly, educators believe that schools should focus more on critical thinking than on memorization of facts.

6. Copernican Plan-Block scheduling plan implemented in the city in this study in the 4 comprehensive high schools in September 1996. The plan provides for two types of scheduling. The first is based on one 4 hour class each day for a period of 30 days; the second schedules two 4 classes each day for a trimester. The district under study chose to vary the plan and use the 4x4 model. The major purpose is to have students enrolled in and teachers teaching fewer classes, each class for a longer period of
time each day but only for part of the year. Dr. Joseph Carroll first developed the plan for high schools as a 180-minute intensive block of time for scheduling classes (Traverso. 1991).

7. District Factor Group-The District Factor Group (DFG) is an indicator of the socio-economic status of citizens in each district and has been useful for the comparative reporting of test results from New Jersey's statewide testing programs. The measure was first developed in 1974 using demographic variables from the 1970 United States Census. A revision was made in 1984 to take into account new data from the 1980 United States Census. The DFG designations were updated again in 1992 using the following demographic variables from the 1990 United States Census: (a) Percent of adult residents who failed to complete high school, (b) percent of adult residents who attended college, (c) occupational status of adult household members, (d) population density: persons per square mile, (e) income: median family income, (f) unemployment: percent of those in the work force who received some unemployment compensation, (g) poverty: percent of residents below the poverty level. The variables described above were combined using a statistical technique called principal components analysis, which resulted in a single measure of socioeconomic status.
for each district. Districts were then ranked according to their score on this measure and divided into 8 groups based on the score interval in which their scores were located. Eight DFGs have been created based on the 1990 United States Census data. They range from "A" (lowest socio-economic districts) to "J" (highest socio-economic districts) and are labeled as follows: A, B, CD, DE, FG, GH, I, J. The district under study in this research is in the DFG A (New Jersey State Department of Education, 1997).

8. 4x4 Model—The 180-day school year is divided into two 90-day semesters. Every student takes 4 courses per semester. Each of the 4 courses consists of classes 80–90 minutes in length. In this model, electives can be implemented for 45 days for 2 ½ credits each. Remedial classes are replaced by electives chosen by the students. Remediation is then infused into the English and Mathematics curricula and some limited related classes (Canady & Rettig, 1995).

9. New Jersey High School Proficiency Test—The New Jersey Grade 11 High School Proficiency Test (HSPT 11) consists of three sections—Reading, Mathematics and Writing—and must be passed as one of the requirements for a high school diploma. Students who do not pass all three sections receive additional instruction and will be retested on the section or sections they did not pass. The Total HSPT 11
Reading, Mathematics and Writing scores are reported as scale scores with a range of 100 to 500. The passing score is 300. The HSPT II scores reported in this study exclude special education students, limited English proficient students, students who were taking the test for the second or third time and students whose answer folders were voided.

10. Organizational Climate—Teachers' and students' perceptions of the professional and instructional environment. It is controlled and influenced by many variables that affect the environment of a building, such as teachers' and students' formal and informal relations, personalities of the staff and student body and the impressions the staff has of their leadership (Hoy, & Tarter, 1992). A positive school climate is expected to improve educational opportunities for students. An open and trusting learning environment should encourage students to perform at higher levels. Job satisfaction should increase because there is a healthy learning and working environment (Sergiovanni & Starratt, 1993).

11. Remedial Classes—Courses offered to those students who have failed one or more sections of the state mandated tests or the benchmark test offered for that specific grade level. In the block schedule, remedial classes are scheduled for
80 minutes for a 45-day period. Instruction in these classes seeks to bring students deficient in basic skills up to standard levels in subjects that are incorporated on the state mandated tests, such as writing, reading, and math.

12. Seat-Time—The Carnegie Standard Model (National Commission on Time and Learning, 1994), denotes the amount of time students are required to be instructed in specific courses to receive credit for that course. In order for a student to receive 5 credits for a required course, the class must meet for 8100 minutes during the school year or its equivalent.

13. Special Needs District—Those school districts whose families fall into the lowest socio-economic group—DFG "A." Updating the DFGs has not changed any district's designation as Special Needs or not Special Needs.

14. State Operated District—In October of 1989, the New Jersey Department of Education voted to takeover the operation of the (district under study) Public Schools. This district was the first in the nation to be taken over by the state government. The takeover law allowed the state to control a local district for 5 years, but then gave the state Board of Education power to extend the operation annually until the district met certification standards. These
certification standards include minimum passing rates for tests given to fourth, eighth and eleventh grade students and for attendance, dropout and graduation rates. This "takeover law" has generated lawsuits and grievances. It has lasted longer than expected, with officials still uncertain as to how to relinquish state control while still maintaining the reforms that have been initiated.

15. Strategic Plan—With the October 1989 State takeover of the public schools in a city in New Jersey, the school district entered a period of rapid development and change. The need to manage this change led to the design of a comprehensive Strategic Plan, both to establish a direction and focus for the district as an educational organization and to provide a context for day to day decision making for district and school staff. Development of the Strategic Plan included broad-based constituent involvement. Board of Education members, parents, district and school staff and community members were involved through representation on school-based planning teams, adviser committees, task forces and parent organizations, and through surveys and meetings which solicited input from a variety of stakeholders. The Strategic Plan continues to keep pace with the dynamic environment and extraordinary range of student needs in the district.
16. Trimester-45 days with two 160 minute classes a day.

   Semesters change three times a year.
CHAPTER II

Review of the Literature

This study seeks to determine whether the implementation of block scheduling in the secondary school curriculum improves the climate of the building. It will specifically focus on the connection between student and teacher and address whether or not extended periods of time of teaching and learning during the school day affect the formal and informal relations between student and teacher. The literature cited in this study includes research conducted in the last 8 years in high schools in the United States and Canada that have implemented block scheduling into their curricula.

The research in this chapter will provide a perspective of block scheduling around the nation and in Canada. Related questions in the reviews include:

1. Do extended periods directly affect student and staff attitudes toward academics?

2. Is there a collective sense of friendliness, openness and enthusiasm among faculty members and students?

3. What is the teachers and students' general perspective of the organizational climate of their school with extended periods?
As well, this chapter will provide an historical perspective of how and why extended periods of time were implemented in high schools across the United States and Canada.

The section on student climate will provide a perspective of whether extended periods of class time and more opportunities for students to become familiar with their teachers affect the instructional climate of the building. The section on teacher climate will provide a perspective of whether extended periods of time for teachers, a reduced class and student load and more opportunities to "personalize" the education of their students, affect the professional climate of the building. Related research to instructional and professional climate will be reviewed in this chapter and also in Chapter V.

**Historical Review of Block Scheduling**

The search for the ideal secondary school schedule can be traced as far back as the 1890's when the factory-like arrangement of time, rooms, teachers, students and curriculum was a model for reformers and visionaries at the time. During the 1960's when advancements in technology and computers flooded the educational arena, schools were encouraged and, in many cases, compelled to re-examine their
philosophies concerning time-on-task and the nature of learning. In 1976, a Massachusetts study by the Educational Development Center, Inc., analyzed 29 schools and their schedules for what was then labeled "intensive scheduling," a restructuring effort modeled after earlier versions of extended period scheduling used in the 1960's (Traverso, 1991).

In 1989, Dr. Joseph Carroll introduced in Massachusetts' Masconomet High School his "Copernican Plan" (180-minute blocks of time) for scheduling. This plan was developed from his work as Superintendent of Schools in the District of Columbia, and truly began in summer school 20 years before in the Los Alamos Public Schools when Carroll noticed that students were learning more effectively in longer blocks of time (Carroll, 1989).

Gordon Cawelti (1994), the Executive Director of the Alliance for Curriculum Reform for the Educational Research Service, an organization that serves as a research arm for 7 national education groups, conducted national study on high school restructuring. The study was based on a survey of 3,380 high school principals, and it was believed to be the most comprehensive survey in decades that examined the progress of reforms in public and private high schools.
According to the survey, hundreds of schools are using cooperative-learning techniques, incorporating new national standards for teaching mathematics, and giving more decision-making authority to teachers and parents. But those efforts are spotty, and few schools are attempting systemic reform by taking on several of the changes at once. He lists the following criticisms of American high schools: (a) low student achievement on benchmark tests and general knowledge of core curricula, (b) failure to develop critical thinking and problem solving skills, (c) fragmented curriculum that does not teach or develop workplace-readiness skills, (d) impersonality of large high schools with no opportunities for students to develop relations with staff or students, (e) lack of transitional learning experiences from the high school setting to the workplace, (f) failure to actively engage students in the learning process, thereby, producing passive learners, (g) failure to provide a challenging curriculum for a culturally diverse student population.

The report contends that a focus on systemic reform is essential if high schools are to become more significant institutions in the lives of students. Cawelti (1994) also suggests that in order to cure these major failures in the high schools, a nationwide "restructuring" effort is needed.
Many schools across the country have found that block scheduling is a key component of this restructuring process. Block scheduling is not a new idea, but the literature suggests that it is an idea whose time has come. During the late eighties and into the nineties, the nation has been focused more than ever before on restructuring schools. Concerned about low student performance, about teaching the skills that enable students to think critically, and about fostering authentic and purposeful learning, educators have continued to search for ways to promote more meaningful learning experiences so that students are ready and have the skills for the twenty-first century workforce (Sizer, 1984).

One of the many innovations within the trend of restructuring schools is the idea of providing sufficient blocks of time for students to learn. The belief of some educators is that this type of flexible scheduling creates a more accommodating environment for the learner. Sufficient time for teaching, away from the factory like 45-minute model, immerses the student in a comprehensive, holistic and focused period of time during which learning becomes relevant (Schrenko, 1994). These focused periods are an alternative to what Goodlad (1984) calls "subject matter slices." Block scheduling, according to Beane (1990) thus becomes the "everyday schedule formed around the activity, problems or
projects that young people are involved with" (p.94). Consequently, overall school climate, instructional and professional, has been seen to improve.

In 1995, in the district under study, a model for implementing a 4x4 block schedule was presented to a district steering committee composed of administrators, staff, students, parents and community members by Dr. Joseph Carroll, a leader in educational reform who focuses specifically on the merits of extended periods of learning for high school students.

One of the reasons a restructuring effort was implemented in the high schools in the district under study was because the state standardized test scores were unacceptable and far below minimum levels of proficiency. Table 2 compares the district's 1995 Fall HSPT 11 aggregate scores (traditional 7 period day schedule) to the 1996 Fall HSPT 11 (first semester implementation of the 4x4 block).
TABLE 2

Aggregate Percent of Grade 11 students passing the 1995-96

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>Reading 95-96</th>
<th>Reading 96-97</th>
<th>Diff.</th>
<th>Mathematics 95-96</th>
<th>Mathematics 96-97</th>
<th>Diff.</th>
<th>Writing 95-96</th>
<th>Writing 96-97</th>
<th>Diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.S. #1</td>
<td>71.7</td>
<td>71.2</td>
<td>-.5</td>
<td>83.0</td>
<td>85.3</td>
<td>+2.3</td>
<td>84.9</td>
<td>82.4</td>
<td>-2.5</td>
</tr>
<tr>
<td>H.S. #2</td>
<td>62.8</td>
<td>60.5</td>
<td>-2.3</td>
<td>70.3</td>
<td>67.1</td>
<td>-3.2</td>
<td>77.6</td>
<td>67.8</td>
<td>-9.8</td>
</tr>
<tr>
<td>H.S. #3</td>
<td>63.4</td>
<td>60.0</td>
<td>-3.4</td>
<td>61.6</td>
<td>65.8</td>
<td>+4.2</td>
<td>75.0</td>
<td>76.1</td>
<td>+1.1</td>
</tr>
<tr>
<td>H.S. #4</td>
<td>50.8</td>
<td>47.8</td>
<td>-3</td>
<td>43.7</td>
<td>53.8</td>
<td>+10.1</td>
<td>63.4</td>
<td>61.9</td>
<td>-1.5</td>
</tr>
<tr>
<td>DISTRICT</td>
<td>61.93</td>
<td>59.63</td>
<td>-2.3</td>
<td>64.4</td>
<td>68.0</td>
<td>+3.6</td>
<td>74.98</td>
<td>71.8</td>
<td>-3.18</td>
</tr>
</tbody>
</table>

Note. Table 2 shows HSPT scores before implementation of block scheduling and after 1st semester of block scheduling. Scores went down slightly in Reading and Writing but showed a gain of 3.6% in Mathematics from the 1995 administration of the HSPT 11 to the 1996 administration.

Baseline data presenting the results of Carroll's work in the district under study and an analysis of all the data are presented in Chapter 4 of this paper.

**Instructional Climate**

In Orange County, Florida, a survey of teachers and students in two Orlando high schools using block scheduling disclosed that school climate and staff and student morale were improved because of the restructured blocks of time.
Students in an 80-minute block were provided with enough time to approach subject matter in depth, resulting in more than one activity, such as, group work, Socratic discussions, and labs with manipulatives, being planned. Overall, students had more of an opportunity to become part of the learning experience (Buckman, King & Ryan, 1995). In a similar study on block scheduling conducted by the Oregon School Study Council in July of 1996, students answered that they like school better than they did in a traditional 8 period day. One of the most important related advantages, students stated, was the improved teacher - student relationships in the extended blocks of time. Students said that this time promoted a more relaxed student atmosphere (Irmsher, 1996).

Joseph Carroll's Copernican Plan (1994) is a type of block scheduling that advocates 120 minute class periods that include interdisciplinary approaches to the subject matter. A full year's course (180 days) is completed in six weeks through macro scheduling. Dr. Carroll emphasizes that this extended time on task is not an end but a means to an end which allows schools to dramatically alter the relationship between students and teachers by allowing more time for them to interact during a school day (Traverso, 1991). Block scheduling was implemented in Colorado Springs, Colorado, in 1990 before extensive research had been conducted on an
intensive mode, 4x4 model. 5 years after the implementation of block scheduling, Roger Shoenstein (1995) reports that these 90 minute blocks have enhanced student success in classes, have improved student attendance and have helped to reduce the failure rate in the state's districts that use some type of creative scheduling. When teachers have the time to plan and execute a lesson through its ideal stages: introducing the material, coaching students to apply and synthesize their knowledge and understanding, and reinforcing the work, it is more likely that the subject matter will be retained. In addition, it has been suggested that those students who remember 85% of what they learned 4 months after a course retain 80% after 11 months (Carroll, 1994).

Block scheduling can also prove advantageous for at-risk mobile students who often need an opportunity to start over quite often within their high school careers. In a paper presented at the Annual Meeting of the Association of Teacher Educators, Munroe (1989) reported that in an alternative school within a school block program in Minnesota, students enrolled in more courses than they did the year before in a traditional schedule furthermore, their attendance rate improved and the dropout rate was reduced. More important, students felt that extended periods helped them to
concentrate more and retain more of their work. Improvement in these areas reduced stress for students.

Fort Lauderdale High School in Florida adopted a 4x4 block in September of 1995. After a year, both teachers and students found they prefer the 90-minute time blocks. For students it meant a lessened class load of 4 subjects instead of 8. Under this program, students took two "light" homework and two "heavy" homework subjects a semester. An Advanced Placement student in English and history, for example, could have a music course and a physical education course to complete his/her requirements. A vocational student could be enrolled in algebra and biology and take Junior ROTC in the afternoon. Even though a student could literally go one year between the end of one math course and the beginning of another, research argues that the quality and the flexibility of the courses make up for the time between classes (Cushman, 1995).

Many variations on this theme are possible. Advanced Placement courses can be scheduled for an entire year for double credits and more weight. At Wasson High School in Colorado Springs, Colorado, A. P. classes are scheduled for three 9 week terms, the last 3 terms of the year. During the first term in the fall, students can choose from the many 45-day electives offered in all disciplines. With the added
A.P. time, Wasson students are scoring higher on the A.P. exam. In 4 years, their A.P. scores have risen almost 11% (Shoenstein, 1995).

The University of Kentucky conducted a survey in 1995 following three semesters of block scheduling in a high school in Frederick, Maryland. A majority of the students (69%) stated that they preferred the block to the 7 period day and most (66%) said they understood their lessons better in the block. Students felt that their teachers planned more collaborative activities and there was more "hands-on" instruction in class. Within these groups students felt they were part of a team working toward a single goal. They had more opportunities to participate in the learning experience. Lessons became more student centered instead of teacher lectured (Sadowski, 1996).

Canady and Rettig (1995) state:

You can't expect all kids to reach the same point at the same time. But if you build extended learning time into your schedule, someone can finish Algebra 1 in the first semester long block; some can go over for one or two quarters; and some can even take two years of algebra in one year (p. 156).
Canady and Rettig (1995) also feel that "scheduling is a valuable but untapped resource for school improvement" (p.4). They believe that although extended blocks of time do not add minutes to the school day, these periods can "vastly improve the quality of time children spend at school" (p.5). In fact, in their work across the country on block scheduling they have found that, along with other elements of restructuring, creative and innovative scheduling can result in a more effective use of time, space and resources and improve the instructional climate of a building.

Even though students and teachers change courses in mid year, what students learn during that 120, 90, 80-minute block can improve students' retention of subject matter. A study by Seifert and Beck (1984) has shown that with the traditional 8 period day with 40-50 minute classes, instructional activities can average only 20-25 minutes. Taking attendance, checking homework, and simply getting a class quiet can take up to 10 minutes of a class period.

In the study of the 4 period schedule for the Anoka-Hennepin school district conducted by the Center for Applied Research and Educational Improvement at the University of Minnesota, in the two high schools with block scheduling, students identified themselves as receiving mostly A's or mostly A's and B's. Students in the two high schools with
the 7 period schedules did not receive as many as their counterparts. As part of the report’s interview data, teachers in a 4 block day (two high schools) also consistently state that students are doing much better and are getting higher grades than they did in a 7 block day (two high schools) (Maruyama, Freeman, Hole, Fredrickson, and Springis-Doss, R., 1995).

### TABLE 3

**Student Self-Reported Grades in CAREI Student Survey**

<table>
<thead>
<tr>
<th>GRADES</th>
<th>4 Block Day</th>
<th></th>
<th>7 Period Day</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>School A</td>
<td>School B</td>
<td>School A</td>
<td>School B</td>
</tr>
<tr>
<td>Mostly A’s</td>
<td>25%</td>
<td>23%</td>
<td>15%</td>
<td>11%</td>
</tr>
<tr>
<td>A’s and B’s</td>
<td>39%</td>
<td>36%</td>
<td>32%</td>
<td>30%</td>
</tr>
<tr>
<td>B’s and C’s</td>
<td>28%</td>
<td>29%</td>
<td>35%</td>
<td>40%</td>
</tr>
<tr>
<td>C’s and D’s</td>
<td>7%</td>
<td>10%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>D’s and F’s</td>
<td>1%</td>
<td>2%</td>
<td>3%</td>
<td>4%</td>
</tr>
</tbody>
</table>

**Note.** Table 3 shows the results of the Anoka-Hennepin student survey when they were asked the question: “What grades do you usually get?” (Numbers are the percent of those who responded in each category) (Maruyama, J., et. al., 1995).

In a “Report Concerning the Impact of Copernican Scheduling” (1997) a comparison of mastery of course content
in a public school system in New Jersey, students' 1996-97
grades on 4x4 block scheduling were compared to the students'
1995-96 grades on a traditional 7 period day. There were
several assumptions upon which the estimates were based:

1. Higher grades represent a higher level of mastery. The
   percentages used (95% for A's, etc.) are commonly used
to define these grades and represent a valid standard.

2. A successful completion of a larger number of credits of
   study represents a greater mastery of course material by
   a student (Carroll, J., and Whitla, D., 1997).

TABLE 4

Student grades from the district's 4 comprehensive high
schools comparing 1995-96 traditional schedule to 1996-97
block schedule

<table>
<thead>
<tr>
<th>Grades</th>
<th>Traditional 95-96</th>
<th>Traditional 96-97</th>
<th>Block 4x4</th>
<th>Diff. in %</th>
<th>% Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>13.2%</td>
<td>18.9%</td>
<td>43.2%</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>26.3%</td>
<td>28.3%</td>
<td>7.8</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>29.9%</td>
<td>27.3%</td>
<td>-8.9</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>9.9%</td>
<td>9.0%</td>
<td>-9.9</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>20.6%</td>
<td>16.5%</td>
<td>-20.0</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

Note. Table 4 shows the comparison of grades in the city's 4
comprehensive high schools from the 1995-96 and 1996-97
school years, the differential in percent between the two
years, and the mastery of the subject estimated in percent (Whitla, D. & Carroll, J., 1997)

In a 1994 Copernican Plan study of high schools in Massachusetts, Joseph Carroll reported a significant improvement of student behavior and a reduction in the dropout rate in all 7 schools using the extended periods. Carroll also suggested that these results might be attributed to the fact that the teachers and the students are spending more time together, and therefore, improving their relations by personalizing students' education.

The Center for Applied Research and Educational Improvement (CAREI) conducted a survey of block scheduling in the Anoka-Hennepin school district in Minnesota. Two high schools scheduled a 4 period block and two high schools had a 7 period day. The results of a survey of student attitudes in the 4 period block found that student attitudes were more positive, students viewed school more favorably, and students' grades were higher (Maruyama, et. al., 1995).

Shortt and Thayer (1995) that at Atlee High School in Hanover County, Virginia, the dropout rate was 0% during the school years 1992-1994. They attribute this dramatic statistic to the implementation that year of the alternate A/B block (4 classes one day and 4 different classes on alternate days). This innovative use of time allowed
teachers and administrators to identify "at risk" students and provide flexible scheduling relevant to the individual needs of the students.

Theodore Sizer (1992) warns that the success of extended blocks of time depends more on why this type of restructuring is being used, rather than how the day is scheduled. If changes are not implemented in the classroom, student learning will not improve, no matter how long the period is.

A high school's organization and use of time can greatly affect teaching and learning. Many schools using extended periods are doing so in an attempt to personalize learning and improve the instructional climate for students.

Professional Climate

Many benefits of extended classroom time have also been observed for teaching staff members, especially the opportunities that arise for better student-teacher relationships. In 4x4 schools, teachers report that they have become more attached to their students, and therefore, more responsive to them. In the traditional 8 period day, teachers could meet anywhere from 150-180 students a day, every day, all year long. The needs of individual students are more difficult to identify. In the 4x4 block, teachers
are responsible for 75-100 students (and sometimes fewer) if the scheduling is done correctly. Classes become more student-centered rather than subject-centered (Canady & Rettig, 1995).

In a 4x4 block schedule, with only three teaching periods, teacher load is reduced. During the 4x4 block, usable teaching time can actually be increased, although each semester course carries the same number of Carnegie minutes. Because classes meet every day, there is less time needed for daily review and more time for instruction. Teachers are also able to plan extended lessons that allow for more continuity and student centered activities. There are fewer tests, quizzes and homework assignments to mark because there are fewer students to teach per semester. There are also fewer report cards, fewer attendance sheets, and fewer record keeping activities. And, as teacher load is lessened, teacher stress is lessened, and more individualized attention to students becomes possible (Carroll, 1994). When students receive more positive attention, they become more enthusiastic about learning. The schedule begins to address students’ individualized needs, and within the extended block, teachers have more opportunities to be creative in their lessons.
Higher levels of teacher job satisfaction are seen when teachers are able to implement a variety of teaching strategies. Interdisciplinary team-taught classes, facilitated by a block scheduling model, for example, can stress connections between subjects. When students begin to see these connections, subject matter begins to make more sense. Subsequently, students become more involved in the learning process (Traverso, 1991).

In Broward County, Florida, 10 high schools adopted the 4x4 block. After one year of implementation, many teachers were ready to trade in their desks for tables. In addition, over 75% of the teachers volunteered to attend professional development seminars over the summer to learn innovative teaching strategies for the longer block (Cushman, 1995). Robert Canady (1996) in an Internet article, "Why Block Scheduling," suggests that if teachers have the time to learn and practice new strategies, long blocks have the potential to be fertile ground for teachers. The National Education Commission on Time and Learning (1994) states that school districts that are interested in implementing longer blocks of time also provide common planning time for thematic and interdisciplinary planning between and across grades. This type of teacher interaction and collaboration can promote creativity and innovation in planning lessons and units.
Schools in California have experimented with various types of block scheduling. Staunton and Adams (1997) write that the teachers responding to 50 questions on the efficacy of block scheduling found that as they work the block scheduling model, they develop stronger and more positive feelings about a number of variables, including how they vary their instruction and methodology.

In a Minnesota CAREI report of the 4 block schedule (Maruyama, et. al., 1995), teachers find the paper work much easier to handle. In addition, there are fewer students, fewer classes, and fewer preparations. In a 4x4 block, teachers can provide feedback more quickly and respond in a more effective manner to the needs of the students. The interview data from this survey are very specific about the difference in instruction in a 4 block verse 7 period day. Almost all teachers were observed in two of their classes during one day of observation in the surveyed schools. The data show less use of lecture and more use of grouping in the 4 block high schools. In addition, the engagement levels of students are consistently higher in 4 block high schools. Conversely, 7 period teachers felt constraints in pacing and instruction with difficulty in continuing activities over a period of two to three days (Maruyama, et.al., 1995).
Despite apparent benefits of block scheduling for students and teachers, several areas of concern remain. District and state policies may also be affected by block scheduling. Athletic eligibility with numbers of classes passed or failed or state mandated minutes of instruction time may also need to be addressed (Shoenstein, 1995). Incoming transfer students whose schools were not on the block schedule can present a problem for the school's organizational structure. Administrators, however, can anticipate these difficulties by making sure there are enough 45-day electives from which the students can choose. Staff can also provide tutoring before and after school and at lunch so students can meet the demands of instructional pacing. The National Honor Society Chapter, Peer Leadership and the Key Club, among others, can also assist with tutoring and help (Shortt & Thayer, 1995). Transfers in and out can be difficult, but with two semesters, transfer students who come in during the fall can get a fresh start in the spring (Maruyama, 1995). In addition, when students come in during the semester, many schools allow them to simply audit the class, or they can take an elective if one is available. In a 4x4 block, more options are made available for instruction of students because of the 45-day electives and the 90-day semesters.
When planning to implement block scheduling in a given school, all the above factors must be considered. Shortt & Thayer (1995) have found that:

Time interacts with other features of the school's infrastructure: climate, empowerment, government, staff development, and technology. This infrastructure supports the work of the school to improve learning, provide appropriate curriculum, and use the best practices for teaching (p. 61).

Increasing the flexibility of a secondary school schedule is clearly an idea whose time has come, but the staff must be the impetus for the change. Irmscher (1996) believes that modification in classroom time affects teachers' lives more than any restructuring efforts. Teachers are the ones who have to adjust their methods to address the extended periods. Professional development must be extensive and ongoing. If teachers learn to use creative strategies in their lesson plans, if class time becomes student centered rather than teacher centered, if instruction during the block becomes more individualized, then these longer blocks of time can promote a healthier and less stressful learning environment for teachers and students.
Summary of Literature Review

The research indicates that most high schools that implement some type of block scheduling will experience positive change. Schools that take a year to research the change and then a year of planning and training will find some success the first year of implementation. In addition, it is also important to note that if intensive blocks of time are implemented in the high schools, the new schedules should be given two years of implementation, change and adjustment before full comparison studies are conducted. The research also indicates that within two years after implementation of block scheduling instructional climate, as defined by this researcher, is affected, including: (a) The number of discipline referrals to the office is reduced significantly, (b) the number of students on the a and b honor roll increases; however, in the 4x4 block, there also may be an increase in the number of students making F’s, (c) student attendance will likely improve, (d) some students often labeled "at-risk" will more likely stay in school; this is especially true in the 4x4 schedule, (e) students are likely to complete more courses in the 4x4 block, (f) students in longer block-scheduled classes had a higher engagement rate than did students in a traditional 7 period day, (g)
Graduation rates are more likely to increase with the 4x4 block.

Some negative aspects of the extended period affect the amount of work students miss when they are absent and, unless special plans are in operation, students experience difficulty in recovering from these absences. There are, however, some indications when students realize when they are absent for one class, it really indicates absence in two classes, the more motivated students will have fewer absences.

In conclusion, in most block scheduling studies reviewed by this researcher, students have an overwhelmingly positive attitude toward their new schedules and would prefer not to return to the traditional 7 period day.

The research also indicates that within two years after implementation of block scheduling professional climate, as defined by this researcher, is affected, including: (a) School environment becomes less stressful for both teachers and students; although, initially, there is greater stress for teachers until they learn how to plan and to teach in a larger block of time, (b) students become less passive in their learning, (c) lateness to class is reduced, (d) teachers probably will cover less material; however, the material that they do teach is taught better and taught in
greater depth, (e) teachers lecture less and gradually engage students in more active learning structures.

In spite of some challenges that block scheduling presents to teachers the majority of them report that, after experiencing it for two or more years they are in favor of it and would not want to return to a traditional 7 period day.
CHAPTER III

Methodology

This chapter will discuss the methodology used to conduct the study. Included will be the research design, the identification of the population, the description of the instruments used to collect the data, the procedures used in the data collection, and an explanation of the data analyses and research questions.

Research Design

This study used descriptive statistics (frequency distributions) and two-way analysis of variance (ANOVA) to present and analyze the expressed perceptions of teachers and students regarding school climate as influenced by block scheduling in their respective high schools. Two survey instruments were used to collect the data on school climate. One instrument was used for students and a separate instrument was used for teachers.

Population

The population in this study will be the 4 comprehensive
high schools located in a large, low socio-economic, urban area in New Jersey. This district consists of 30 elementary schools and 5 high schools. The fifth high school not included in this study is a district-wide magnet school for academically gifted students, serving a relatively small but select student population.

Since 1994, enrollment has increased in all district schools (elementary and secondary) by over 4,000 students. This number represents one of the highest percentages of growth in the state of New Jersey.

TABLE 5

High school enrollment, ethnic breakdown, number of students eligible for free lunch in school district under study

<table>
<thead>
<tr>
<th>SCOLLS</th>
<th>ENROLLMENT</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>O</th>
<th># of students</th>
<th>Percent eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>2558</td>
<td>440</td>
<td>324</td>
<td>1220</td>
<td>574</td>
<td>1348</td>
<td>52.6%</td>
</tr>
<tr>
<td>#2</td>
<td>1570</td>
<td>499</td>
<td>47</td>
<td>885</td>
<td>139</td>
<td>884</td>
<td>56.3%</td>
</tr>
<tr>
<td>#3</td>
<td>1326</td>
<td>1027</td>
<td>11</td>
<td>226</td>
<td>62</td>
<td>670</td>
<td>50.5%</td>
</tr>
<tr>
<td>#4</td>
<td>1097</td>
<td>942</td>
<td>10</td>
<td>111</td>
<td>34</td>
<td>510</td>
<td>46.5%</td>
</tr>
</tbody>
</table>

Note. Table 5 shows the number of students in each high school included in this study, the ethnic breakdown of students from each school, and the number of students
eligible for free lunches. Students are eligible for free lunch if their families earn below $10,000 a year.

For a student to fulfill the state's requirements for high school graduation, each must pass the state-mandated High School Proficiency Test that is administered in the junior year. The test is given twice a year, once in October and once in April. It is composed of three parts, Reading, Mathematics and Writing.

TABLE 6

Number of first time test takers and percent of students passing each section: 1997 HSPT October Administration

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>1st TIME TEST TAKERS</th>
<th>READING</th>
<th>MATHEMATICS</th>
<th>WRITING</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>313</td>
<td>61.7</td>
<td>68.6</td>
<td>68.7</td>
</tr>
<tr>
<td>#2</td>
<td>254</td>
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</table>

Note. Table 6 indicates the number of first time test takers who took the test and the percent who passed each section of the test during the Fall 1997 school year test administration in each high school.

All high schools involved in this study have populations primarily serving the geographic areas in which they are
located. All of the high schools have completed two full years of implementation of block scheduling.

One hundred and sixty staff surveys were distributed in the 4 high schools in the study. Eighty-one surveys were completed and returned. A random sample of 50 teachers was selected for analysis. Four hundred and eighty student surveys were distributed in the 4 high schools in the study. Three hundred and sixty were completed and returned. A random sample of 80 students was selected for analysis. This is in keeping with the population/sample size generally acceptable for a study of this size.

DATA COLLECTION INSTRUMENTS

The instruments used to collect data for this research were obtained from the University of Minnesota, Center for Applied Research and Educational Improvement (CAREI). CAREI is a collaborative effort between the University of Minnesota College of Education and the Minnesota school districts. CAREI fosters and promotes long term links between the faculty of the University and the Minnesota public schools to nurture collaborative research that develops and applies theory, while addressing important issues confronting schools. CAREI also provides ways for these schools to draw
upon relevant research conducted in various educational areas.

During the 1994–95 school year, CAREI conducted an evaluation of the Anoka-Hennepin, Minnesota, school district’s 4 high schools. Two were on a 7 period day, and two were on a 4 period day. As a part of that evaluation, two instruments were developed, one for teachers and one for students, to determine the relationship between block scheduling and school climate as opposed to that of a traditional day (Maruyama, et.al, 1995).

These instruments are appropriate for this study because they were designed to measure the instructional (student) and professional (teacher) climate of two Minnesota high schools that maintained a traditional 7 period day and two Minnesota high schools that implemented a 4x4 block schedule. Since this study will measure instructional and professional climate in 4 high schools that have changed from a traditional 7 period day to implementation of a 4x4 block schedule, it is appropriate that these CAREI surveys be used to measure the instructional and professional climate in this study.
Student Instrument.

The demographic information for the student survey included students' overall opinion of the school, whether the students had a job and for how many hours they worked, whether students were involved in any extra-curricular activities and how many hours, ethnicity, academic record, gender, grade, and the amount of time spent on homework each day. If any significant relationship exists in the demographic study that relates to gender and grade level as they pertain to the two research questions on the student survey, it will be discussed and reported in Chapter V. Data were also obtained on the survey on the students' perceptions of the effect of block scheduling on their learning and the way teachers teach which this paper has defined as "instructional climate" (Appendix A).

Frequency of responses to clusters of questions that relate to variables describing instructional climate, as defined by this researcher, will be converted to a percentage of the total sample to determine if the overall response to that question or cluster of questions indicate a positive or negative attitude toward the 4x4 block schedule. If the survey answers produce a 50% or better favorable response - (D) or (E) -Agree/Strongly Agree or (D) or (E) - All the
Time/Almost all the Time on the Likert scale used on the student survey, the researcher can draw the conclusion that a strong relationship exists between the elements being researched and positive instructional climate.

Clusters and their respective questions being addressed on the student instrument that define this researcher’s definition of instructional climate and relate to the research question, “Are there instructional benefits for high school students who have been scheduled for extended periods of class time” are (Answers range from [A] Strongly Disagree to [E] Strongly Agree),

**Student Engagement/Classtime**

9. I learn a lot in this school.

10. Most of my classes are interesting and enjoyable.

15. I see myself as a successful student.

17. I can take a day off from school and not miss much work.

41. My school provides me with good academic opportunities.

42. The courses I am taking fit my need for my future.

44. What I learn in one class relates to what I learn in other classes.

**Student Attitudes Toward Schoolwork**

11. Often I don’t understand my homework.

12. I have too much homework.

28. Often I have trouble understanding what is being taught
in my class.

33. When I miss class, it’s hard to catch up.

39. During class, I often feel lost.

43. It’s easy to organize my work and keep up with what is expected of me.

4 Period Day

47. I feel the 4x4 block schedule has helped me get better grades.

48. I feel the 4x4 block helps me to get a better understanding of the subject.

49. I would rather have 7 45 minute classes every day instead of the 4x4 block.

Students were asked how often they do these things in class, answers ranged from (1) never or seldom to (5) almost all the time.

50. Think hard about ideas.

51. Have in-depth discussions.

52. Do a variety of activities in most class periods.

53. Work in small groups.

54. Fill out worksheets.

55. Listen to the teacher lecture.

56. Do activities (such as labs or projects) to apply what I learn.

57. Do research or problem solving activities.
58. Write a research paper, story or other multi page report.

59. Take tests that require me to write paragraphs (essays) to explain what I know.

60. Use technology during class.

Clusters and their respective questions being addressed on the student instrument that define this researcher’s definition of instructional climate and relate to the research question, “Does block scheduling effect the instructional climate of a high school” are (Answers range from [A] Strongly Disagree to [E] Strongly Agree),

**School Climate**

24. There is real school spirit.

25. Students in this school get along well together.

26. Students of different races get along well together.

40. I am proud to tell others that I go to this school.

**Having Time To Do Things**

30. Students have time during the school day to talk with their friends.

32. It seems like I am always rushing to get places.

38. Many students come late to class.

**Knowing Other Students**

27. School is a pretty lonely place.

29. I have time to get to know other students in my class.

37. In this school I don’t feel “put down” by other students.
Respect For Learning

14. Many students don’t care about learning.

18. Students in this school show respect for others who work hard and do well.

Student Behavior

34. I feel safe at this school.

35. Students in this school behave well in class.

36. Students in this school behave well in the hallways.

Boredom

13. Often I feel bored in this class.

16. Some of my classes are just too long.

19. Class time seems to go by quickly.

Teacher Quality

20. Most teachers seem to enjoy teaching.

21. Most teachers make good use of the class time.

22. Most teachers are willing to give extra help when I don’t understand something.

23. Students get along well with teachers.

31. My teachers care about how much I am learning.

Personal Care for Students

45. There is at least one adult in this school I can talk to who knows me.

46. I am able to get in-school help for personal problems.

Based on the review of the literature in Chapter 2, when
a strong student instructional climate is evident, increased student learning and effective teaching are evident.

The CAREI students' block scheduling survey instrument measures students' perceptions of block scheduling using a Likert scale model with 5 response items. Questions 9-49 asked students for their perceptions of their school and their teachers with response options ranging from (A) - (E) (strongly disagree to strongly agree). Questions 0-60 relate directly to the students' perceptions of the 4x4 block with response options ranging from (A) - (E) (never/seldom-almost all the time). The student instrument is self-administered and includes 8 statements of demographic information.

Responses to survey questions will be reported on a SCANTRON grid sheet (Appendix B). Data will be reported in Chapter 4 using a two-way analysis of variance (ANOVA) for demographic questions of gender and grade level, in addition to frequency distributions for clusters of questions that relate to each of the two survey questions. If any significant relationship exists in the demographic study that related to gender and grade level, it will be reported and discussed in Chapter V.
Teacher Instrument.

The demographic information for the teacher survey included years of experience as a teacher in that particular high school, years of experience as a teacher, primary subject area taught, primary grade level taught, and gender. Data were also obtained on perceptions of the effect of block scheduling on professional climate and the way teachers teach during its use. If any significant relationship exists in the demographic study that relates to gender and years of experience as a teacher, it will be discussed and reported in Chapter V.

Data were also obtained on the teachers' perceptions of the effect of block scheduling on their teaching and the way students learn which this paper has defined as "professional climate" (Appendix C).

Frequency of responses to all clusters of questions that relate to variables describing professional climate as defined by this researcher will be converted to a percentage of the total sample to determine if the overall response to that question or cluster of questions indicate a positive or negative attitude toward the 4x4 block schedule.

If the survey answers produce a 50% or better favorable response- (D) or (E)-Agree/Strongly Agree or (D) or (E)-
Enhances, the researcher can draw the conclusion that a strong relationship exists between the elements being researched and positive professional climate.

Clusters of questions being addressed on the teacher instrument that define professional climate are teachers' perceptions of sense of community, shared norms and values, student learning, teacher collaboration (reflective dialog, deprivatization, interdependent roles), influence/empowerment, respect and support, opportunity (including access to expertise) and openness to improvement, and personal stress. In addition, clusters of questions on the instrument also address whether teachers feel that the 4x4 block facilitates student achievement, maintains order/improves student behavior, fosters quality education, and improves teacher work-life.

Clusters and their respective questions being addressed on the teacher instrument that define this researcher's definition of professional climate and relate to the research question, "Are there professional benefits for high school teachers using a schedule of extended periods of class time" are (Answers range from [A] Restricts to [C] Neither to [E] Enhances),

**Facilitating Student Achievement**

45. Providing the education you want for your students.
46. Having homework you assign completed and turned in.

47. Assisting students who have been absent or are behind.

49. Helping lower-achieving students to experience success.

52. Helping students have positive feelings about their school experience.

56. Knowing individual students' strengths and weaknesses.

57. Individualizing instruction.

61. Having students who are focused and ready to learn.

**Maintaining Order/Improving Student Behavior**

48. Keeping passing times calm.

50. Reducing the number of students tardy to class (excluding the first hour).

66. Keeping class disruptions to a minimum.

67. Improving my morale.

69. Limiting disciplinary referrals.

71. Reducing absences.

**Fostering Quality Education**

59. Being able to teach the content required by the district curriculum.

60. Using more alternative assessment approaches.

62. Using classroom activities which require higher level thinking.

63. Providing students opportunity for enrichment and advanced study.
64. Getting high quality work from students.

64. Teaching students how to directly apply the concepts and processes to real-world work or daily life.

68. Using a diversity of instructional delivery methods or styles.

69. Using teaching strategies that involve students in active hands-on learning.

**Teacher Collaboration: (reflective dialog, deprivatization, etc.)

17. Teachers have time to meet and talk about teaching and learning.

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

21. I coordinate the content of my courses with other teachers in my department.

22. I coordinate the content of my courses with other teachers in other departments.

29. At department meetings, we talk about student performance data and how to raise student achievement.

30. I visit other teachers’ classrooms to observe their teaching.

31. I receive meaningful feedback on my performance from my peers.
Improving Teacher Work Life

51. Having adequate time to prepare for teaching.

53. Having formal meeting time to spend on curriculum, pedagogy and assessment issues with other teachers.

54. Keeping the workload manageable.

55. Making the day less tiring and more sane.

58. Having sufficient and useful in-service to improve my teaching.

72. Reducing record keeping.

Teachers were asked how frequently they do each of the following, answers ranging to (A) never to (E) often.

73. Accommodating the needs of special education students.

74. Conduct labs, hands-on activities or other student participation activities.

75. Schedule field trips or community experiences.

76. Use methods designed to appeal to a variety of learning experiences.

77. Have students relate classroom content to their own experiences.

78. Have students use classroom content for purpose other than remembering it.

79. Use exhibitions, demonstrations or other non-traditional evaluation methods.

80. Use cooperative groups or other small group activities.
81. Use tests that require students to write essays.

82. Have students fill out worksheets or study guides.

83. Use the library or computers.

84. Bring in guest speakers.

85. Use lecture (including teacher directed discussion) more than half the class period.

86. Team-teach.

87. Have in depth discussions where students do most of the talking.

4 Period Day

88. Which answer best defines your feelings about block scheduling?

(A) Strongly Non-supportive (B) Non-Supportive (C) Neutral

(D) Supportive (E) Strongly Supportive.

For the following questions, use scale (A) Strongly Disagree to (E) Strongly Agree

89. I feel our current schedule has helped students get better grades.

90. My students have a deeper understanding of the subject matter with our current schedule.

91. Sufficient, useful staff development has been made available to assist my transition to the block schedule.

92. A greater number of my low-achieving and special education students are experiencing greater success under the block
93. The current schedule is better for our high-achieving students.

Clusters and their respective questions being addressed on the teacher instrument that define this researcher’s definition of professional climate and relate to the research question, “Does block scheduling effect the professional climate of a high school” are (Answers range from [A] Strongly Disagree to [E] Strongly Agree),

**Sense of Community**

10. This school makes an effort to reach out to the community.
11. Most staff members help out anywhere, anytime—even though it may not be part of their official assignment.
14. I am proud to tell others I work for this district.
28. I have a chance to get to know other teachers in this school.
39. I wouldn’t want to work in any other school.
43. Parents are partners with the school in enhancing their child’s learning.

**Shared Norms and Values**

12. Teachers in this building share a sense of common purpose.
16. Teachers help maintain discipline in the entire school, not just their classrooms.
18. In this school, teachers and administration are in close
agreement on school discipline policy.

40. In this school, teachers and administrators agree about school policies.

**Focus on Student Learning**

27. Most staff seem to really care about the students.

41. Staff regularly talk about ways to increase student performance.

42. Most staff here strive to increase student learning.

**Teacher Influence/Empowerment**

7. Staff has opportunities to be involved in making building decisions.

13. I have some influence in determining the content of staff development programs.

19. It is a waste of time to give my opinions about decisions in school.

33. I feel I am kept informed about what is going on in this school.

35. Our school has the appropriate authority to make its own decisions.

**Respect and Support**

6. I am personally recognized for a job well done.

8. I feel respected as a colleague by most staff members.

9. Administrators work hard to provide adequate resources for teachers.
15. The building administrators' behavior toward the staff is supportive and encouraging.

38. Teachers new to this school are given a great deal of assistance and support.

**Opportunity (including access to expertise) and Openness To Improvement**

23. I am encouraged to experiment with instructional methods in this school.

24. Staff development permits me to acquire important new knowledge and skills.

26. I feel I have opportunities to achieve what is meaningful to me in this school.

34. I feel I have opportunities to use my full abilities to achieve my professional goals.

36. I have access to expertise in my subject area from within the district.

37. I have access to expertise in my subject area from outside the district.

44. Most teachers are interested in new ideas.

**Overworked**

25. My job interferes with my life outside of school.

32. My job frequently requires more work than I think should be expected of me.

Based on the literature studies in Chapter 2, it appears
that when a strong professional climate is evident, increased student learning and effective teaching are evident.

The CAREI teachers' block scheduling survey instrument measures teachers' perceptions of block scheduling with statements that relate to teacher work-life issues using a Likert scale model. Questions 1-39 asked teachers for their perceptions of teacher work-life issues with response options ranging from (A)-(B)-(strongly disagree to strongly agree). Questions 40-68 asked teachers for their perceptions of the degree to which the current block schedule restricts or enhances various aspects of classroom instruction and student achievement with response options ranging from (A)-(B) (restricts to enhances). Questions 69-82 asked teachers how frequently they were able to do various activities within the 4x4 block schedule with response items (A)-(B) (never to often). Questions 83-88 asked teachers their perceptions of the 4x4 block with response options (A)-(E) (strongly disagree to strongly agree). The teacher instrument is self-administered and includes 5 statements of demographic information.

Responses to survey questions will be reported on a SCANTRON grid sheet (Appendix A). Data will be reported in Chapter 4 using a two-way analysis of variance for demographic questions of gender and years of experience, in
addition to frequency distributions for all clusters of questions that address each of the two survey questions. If any significant relationship exists in the demographic study that relates to gender and years of experience as a teacher, it will be discussed and reported in Chapter V.

**Procedures**

In May of 1998, a letter was written to Ms. Carol Freeman, Project Director, Center for Applied Research and Educational Improvement, University of Minnesota, to obtain permission to use the CAREI block scheduling instrument (Appendix D). Permission was granted (Appendix E). The instruments are not copyrighted, and there was no charge for their use.

A large, urban school district in the state of New Jersey was selected for this study. At the time of this study, the district had been under "state takeover" for 9 years. Initial contact was made with the State Superintendent of Schools. A letter of explanation of the study and its intent was made along with a request for permission to collect data in the high schools in the district as the source of data collection (Appendix F). It was stated in the letter that the researcher would remain
anonymous to all participants in the survey. A return form was enclosed for the Superintendent’s use in granting permission to contact principals in the selected schools (Appendix G).

A letter was sent to each high school principal explaining the purpose of the study and the procedures for collecting data (Appendix H). It was stated in the letter that the researcher would remain anonymous to all participants. A district employee was asked to serve as liaison between the researcher and the schools. This liaison coordinated the distribution and collection of the surveys within each high school. A meeting was held with the liaison, and the procedures for administration of the instruments to the teachers and the students were explained. It was emphatically stated to the liaison that the researcher was to remain anonymous to all participants in the study. Only the Superintendent, the liaison and the principals knew who was conducting the surveys.

Between January 4, 1999, and January 11, 1999, 4 school packets were delivered by the liaison to each high school. Surveys, grid sheets and pencils were included in the packet. The liaison was instructed to distribute the staff surveys to 30-40 teachers in each of the 4 high schools, the number depending on the total staff population in each respective
school. Staff participants were selected on a volunteer basis by the liaison. The liaison instructed each participant to answer the survey anonymously. The instrument was given to the teachers in each high school at the beginning of the school day. The teachers had a period of three days to complete the survey and return it anonymously (in unmarked envelopes) to the liaison when they were finished. A postage paid envelope was given to the liaison for return of completed staff surveys.

The liaison distributed the student instrument packet to 5 teachers in each high school whose classes were chosen to voluntarily participate in this research. One teacher administered the survey to one ninth grade class; one teacher administered the survey to one tenth grade class, one teacher administered the survey to one eleventh grade class, and one teacher administered the survey to one twelfth grade classes. A packet was also administered to a class in each high school that had an enrollment of students with various class levels. All teachers who were selected by the liaison to administer the surveys volunteered to participate with their classes. No tracked classes (Advanced Placement, Honors, Special Education, etc.) were used so that there was no possibility that the survey could be skewed.

The teachers distributed the survey to the students in
their classes during their respective class periods. The teachers had a period of three days to distribute the surveys to the students. Students were instructed not to put their names on the surveys or the survey answer sheets. Students were told if they did not wish to complete the survey, they could return the incomplete form to the teacher. When the student surveys were completed, they were collected by the teachers and returned to the liaison. Anonymity was guaranteed. Approximately 120 students were surveyed in each school. The completion and return of all survey packets was accomplished by January 15, 1999. A postage paid envelope was given to the liaison for return of completed student surveys.

**Data Analysis**

The purpose of this section is to present a narrative description of the methods that were used to analyze the data collected in this study. The data analysis plan began with the methods used to present basic descriptive information on the survey questions presented on the student and teacher instruments developed by the University of Minnesota, Center for Applied Research and Educational Improvement (CAREI).

On the student instrument, there were 8 categorical
demographic variables of overall opinion of the school, after school job status and hours worked, extra-curricular activities and hours involved, grades, gender, grade status, and average amount of time spent on homework every day. A two-way analysis of variance was used to examine if there was any effect on gender and grade level as they pertain to instructional benefits and instructional climate for a high school student in extended periods. For questions 9-60 in the CAREI student questionnaire clusters of questions include school climate, time to do things, knowing other students, student engagement/class time, respect for learning, student behavior, boredom, attitude toward school work, teacher quality, personalization of school day, and the 4x4 block. Frequency distributions were presented to show the results of the students' opinions as they pertain to learning in extended periods of class time.

On the teacher instrument, the 5 categorical demographic variables included years of experience as a teacher in this school, years of overall experience as a teacher, primary subject area, grade level taught, and gender. A two-way analysis of variance was used to examine if there was any effect on gender and years of experience as each demographic variable pertains to professional benefits and professional climate for high school teachers in extended periods of class
time. For questions 6-93 in the CAREI teacher questionnaire, clusters of questions address and define professional climate. These clusters include teachers' perceptions of community, shared norms and values, focus on student learning, teacher collaboration (reflective dialog, deprivatization and interdependent roles), influence/empowerment, respect and support, opportunity (including access to expertise) and openness to improvement, and personal stress. In addition, clusters of questions also address teachers' perceptions of the 4x4 block, including whether it facilitates student achievement, maintains order/improves student behavior, fosters quality education, and improves teacher work life. Frequency distributions were presented to show the results of the teachers' opinions as they pertain to teaching in extended periods of class time.

The survey instrument was duplicated for teachers and for students and survey grid sheets were developed for responses to all items on the surveys. Classroom packets with a sufficient number of surveys and grid sheets were assembled for each school. The directions on the survey instructed the students and teacher participants to circle all the demographic items that apply. Pencils were supplied in each packet for those participants who do not have one to use for the grid sheet. All teacher and student
participation was voluntary.

In December 1995, Copernican Associates was contracted to assist in the planning and evaluation of the scheduling change (from traditional 7 period to the 4x4 block) in the district under study. A progress report was presented in the spring of 1998 that reflected the impact on the 4 high schools included in this report after the first year of implementation of block scheduling. Baseline data from this report concerning student performance in the 1995-96 school year (traditional schedule) with equivalent data from the 1996-97 (first semester of implementation of a 4x4 block schedule) will also be presented in Chapter V in the analysis of the effect of block scheduling on the instructional and professional climate of a high school.
CHAPTER IV

The Research Findings

The purpose of this research is to determine whether extended periods of class time affects student and teacher perceptions of the instructional and professional climate of a secondary school.

There were two research questions answered in this study using the CAREI student instrument:

1. Are there instructional benefits for high school students who have been scheduled for extended periods of time?
2. Does block scheduling affect the instructional climate of a high school?

The researcher in this study investigated whether a restructuring of time to provide extended periods of learning had a significant effect on the instructional climate of a high school. Two variables on the student survey, gender and grade level, were considered in the analysis that might have an effect on student perceptions of block scheduling. These variables were matched to the 53 question student survey.

There were two other research questions answered in this study using the CAREI teacher instrument:

3. Are there professional benefits for high school teachers using a schedule of extended periods of time?
4. Does block scheduling affect the professional climate of a high school?

The researcher in this study investigated whether a restructuring of time to provide extended periods of teaching had a significant effect on the professional climate of a high school.

Two variables on the teacher survey, gender and years of experience, were considered in the analysis that might have an effect on teacher perceptions of block scheduling. These variables were matched to the 88 question teacher survey.

This chapter is divided into two sections. The first section presents frequency distributions of the survey questions. Clusters of questions driven by the 4 research questions, specifically focus on gender and grade level (student survey) and gender and years of experience (teacher survey). The second section presents statistical data and results of the ANOVA in relation to each research question. All statistical calculations of the ANOVA were performed at the .05 level of significance.

Student participants were asked to complete a 60 question survey. They were asked to read each question and answer according to a Likert scale answer key. The student survey was divided into two sections, demographics and survey questions focusing on instructional benefits and
instructional climate as each relates to block scheduling.

**RESEARCH QUESTION #1**

Are there instructional benefits for high school students who have been scheduled for extended periods of time?

Frequency distributions were developed to present the findings. A score of 140 equaled the total number of points that could be received answering survey question 1. A score of 70 or more indicates a positive response to the question, "Are there instructional benefits for high school students who have been scheduled for extended periods of time?" (See figures 1-4).

Tables 7 and 8 present statistical data and results of the ANOVA developed in relation the research question, "Are there instructional benefits for high school students who have been scheduled for extended periods of time?" Gender, grade level and the interaction between both variables were analyzed to see if there was any effect on the instructional benefits of block scheduling as perceived by high school students as measured by the CAREI student survey. A random sample of 80 students was selected for the analysis. (See tables 9-10).
Figure 1

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Figure 2

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Note. Instructional Benefits - A score of 140 equaled the total number of points that could be received answering survey question #1. A score of 70 or more indicates a positive response to the question, "Are there instructional benefits for high school students who have been scheduled for extended periods of time?"
Figure 3

Male | Female
--- | ---
Benefits | Benefits |
86 | 104
98 | 66
93 | 89
47 | 64
93 | 98
85 | 97
65 | 95
69 | 57
53 | 57
65 | 96

11th graders

Score

# of respondents


Figure 4

Male | Female
--- | ---
Benefits | Benefits |
88 | 74
72 | 68
94 | 92
86 | 105
73 | 93
72 | 81
71 | 104
56 | 77
84 | 87
82 | 82

12th Graders

Score

# of respondents


Note. Instructional Benefits - A score of 140 equaled the total number of points that could be received answering survey question #1. A score of 70 or more indicates a positive response to the question, "Are there instructional benefits for high school students schedules for extended periods of class time?"

From the data displayed on Graphs #1 - #4 one can state:
85% of the 9th graders responded positively;
100% of the 10th graders responded positively;
55% of the 11th graders responded positively;
90% of the 12th graders responded positively.
Table 7

Student survey scores for research question 1

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<th>GRADE 9 SCORES</th>
<th>GRADE 10 SCORES</th>
<th>GRADE 11 SCORES</th>
<th>GRADE 12 SCORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>112 89</td>
<td>90 75</td>
<td>86 85</td>
<td>88 72</td>
</tr>
<tr>
<td></td>
<td>62 79</td>
<td>94 98</td>
<td>98 65</td>
<td>98 71</td>
</tr>
<tr>
<td></td>
<td>69 92</td>
<td>111 94</td>
<td>93 69</td>
<td>84 56</td>
</tr>
<tr>
<td></td>
<td>82 87</td>
<td>94 90</td>
<td>47 53</td>
<td>86 84</td>
</tr>
<tr>
<td></td>
<td>96 84</td>
<td>119 98</td>
<td>93 65</td>
<td>73 82</td>
</tr>
<tr>
<td>FEMALE</td>
<td>133 99</td>
<td>96 79</td>
<td>104 66</td>
<td>74 68</td>
</tr>
<tr>
<td></td>
<td>84 73</td>
<td>96 94</td>
<td>89 64</td>
<td>92 105</td>
</tr>
<tr>
<td></td>
<td>102 94</td>
<td>86 100</td>
<td>99 97</td>
<td>93 81</td>
</tr>
<tr>
<td></td>
<td>68 88</td>
<td>90 74</td>
<td>95 57</td>
<td>104 77</td>
</tr>
<tr>
<td></td>
<td>107 91</td>
<td>72 94</td>
<td>57 96</td>
<td>87 82</td>
</tr>
</tbody>
</table>

Note. Individual scores of high school students were selected on a random basis for analysis. Scores are distributed by gender and grade level.

Table 8

Table of means for research question #1

<table>
<thead>
<tr>
<th></th>
<th>GRADE 9</th>
<th>GRADE 10</th>
<th>GRADE 11</th>
<th>GRADE 12</th>
<th>ROW MEANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>85.2</td>
<td>96.3</td>
<td>75.4</td>
<td>79.4</td>
<td>84.1</td>
</tr>
<tr>
<td>FEMALE</td>
<td>93.9</td>
<td>88.1</td>
<td>82.3</td>
<td>86.3</td>
<td>87.7</td>
</tr>
<tr>
<td>COLUMN MEANS</td>
<td>89.55</td>
<td>92.2</td>
<td>78.85</td>
<td>82.85</td>
<td>X=85.9</td>
</tr>
</tbody>
</table>

Note. All statistical calculations of the ANOVA were performed at the .05 level of significance.
**Hypothesis #1:**

$H_{01}: \mu_9 = \mu_{10} = \mu_{11} = \mu_{12}$ Grade level has no effect on the instructional benefits of block scheduling as perceived by high school students and measured by the CAREI student survey. Reject.

**Hypothesis #2:**

$H_{02}: \mu_{\text{male}} = \mu_{\text{female}}$ Gender has no effect on the instructional benefits of block scheduling as perceived by high school students and measured by the CAREI student survey. Fail to reject.

**Hypothesis #3:**

$H_{03}: \mu_9 \text{ male} - \mu_9 \text{ female} = \mu_{10} \text{ male} - \mu_{10} \text{ female} = \mu_{11} \text{ male} - \mu_{11} \text{ female} = \mu_{12} \text{ male} - \mu_{12} \text{ female}$. There is no interaction between grade level and gender on the instructional benefits of block scheduling as perceived by high school students and measured by the CAREI student survey. Fail to reject.

The examiner fails to reject $H_{02}$ and $H_{03}$ and rejects $H_{01}$. Gender has no effect on the instructional benefits of block scheduling as perceived by the high school students and measured by the CAREI student survey. Also, there is no interaction between grade level and gender on the instructional benefits of block scheduling as perceived by the high school students and measured by the same instrument.
However, grade level has an effect on the instructional benefits of block scheduling as perceived by the high school students and measured by the CAREI student survey.

Because the examiner rejected the null, the Scheffe technique was applied to the first hypothesis. Only one simple was significant. High school students in grade 10 scored significantly higher than students in grade 11 with respect to the effect of the instructional benefits of block scheduling as measured by the CAREI student survey. In other words, the researcher is 95% confident the true difference between these two groups falls between 0 and 26.8 points with the best estimate of 13.4 points higher for grade 10 over grade 11.

**RESEARCH QUESTION #2**

Does block scheduling affect the instructional climate of a high school?

Frequency distributions were developed to present the findings. A score of 120 equaled the total number of points that could be received answering survey question 2. A score of 60 or more indicates a positive response to the question, "Does block scheduling affect the instructional climate of a high school?" (See figures 5-8).

Tables 9 and 10 present statistical data and results of
the ANOVA developed in relation the research question, "Does block scheduling affect the instructional climate of a high school?" Gender, grade level and the interaction between both variables were analyzed to see if there was any effect on the instructional benefits of block scheduling as perceived by high school students as measured by the CAREI student survey. A random sample of 80 students was selected for the analysis. (See tables 9-10).
Figure 5

<table>
<thead>
<tr>
<th>Male Climate</th>
<th>Female Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td>93</td>
</tr>
<tr>
<td>64</td>
<td>70</td>
</tr>
<tr>
<td>88</td>
<td>73</td>
</tr>
<tr>
<td>70</td>
<td>64</td>
</tr>
<tr>
<td>71</td>
<td>76</td>
</tr>
<tr>
<td>83</td>
<td>73</td>
</tr>
<tr>
<td>82</td>
<td>67</td>
</tr>
<tr>
<td>79</td>
<td>74</td>
</tr>
<tr>
<td>77</td>
<td>76</td>
</tr>
<tr>
<td>78</td>
<td>68</td>
</tr>
</tbody>
</table>

9th Graders

Figure 6

<table>
<thead>
<tr>
<th>Male Climate</th>
<th>Female Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>68</td>
<td>83</td>
</tr>
<tr>
<td>71</td>
<td>67</td>
</tr>
<tr>
<td>74</td>
<td>91</td>
</tr>
<tr>
<td>90</td>
<td>81</td>
</tr>
<tr>
<td>78</td>
<td>66</td>
</tr>
<tr>
<td>63</td>
<td>45</td>
</tr>
<tr>
<td>65</td>
<td>73</td>
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<tr>
<td>75</td>
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<tr>
<td>72</td>
<td>77</td>
</tr>
<tr>
<td>81</td>
<td>82</td>
</tr>
</tbody>
</table>

10th Graders

Note. Instructional Climate—A score of 120 equaled the total number of points that could be received answering survey question #1. A score of 60 or more indicates a positive response to the question, "Does block scheduling affect the instructional climate of a high school?"
Figure 7

<table>
<thead>
<tr>
<th>Male Climate</th>
<th>Female Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>77</td>
<td>104</td>
</tr>
<tr>
<td>79</td>
<td>66</td>
</tr>
<tr>
<td>84</td>
<td>89</td>
</tr>
<tr>
<td>59</td>
<td>64</td>
</tr>
<tr>
<td>78</td>
<td>98</td>
</tr>
<tr>
<td>66</td>
<td>97</td>
</tr>
<tr>
<td>73</td>
<td>95</td>
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<tr>
<td>59</td>
<td>57</td>
</tr>
<tr>
<td>64</td>
<td>57</td>
</tr>
<tr>
<td>60</td>
<td>96</td>
</tr>
</tbody>
</table>

11th graders

# of respondents

Figure 8

<table>
<thead>
<tr>
<th>Male Climate</th>
<th>Female Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>58</td>
</tr>
<tr>
<td>100</td>
<td>84</td>
</tr>
<tr>
<td>67</td>
<td>75</td>
</tr>
<tr>
<td>92</td>
<td>72</td>
</tr>
<tr>
<td>66</td>
<td>76</td>
</tr>
<tr>
<td>61</td>
<td>45</td>
</tr>
<tr>
<td>69</td>
<td>74</td>
</tr>
<tr>
<td>55</td>
<td>67</td>
</tr>
<tr>
<td>90</td>
<td>77</td>
</tr>
<tr>
<td>64</td>
<td>70</td>
</tr>
</tbody>
</table>

12th Graders

# of respondents

Note. Instructional Climate - A score of 120 equaled the total number of points that could be received answering survey question #2. A score of 60 or more indicates a positive response to the question, "Does block scheduling affect the instructional climate of a high school?" From the data displayed on graphs #5-#8 one can state that: 100% of the 9th graders responded positively; 95% of the 10th graders responded positively; 75% of the 11th graders responded positively; 85% of the 12th graders responded positively.
Table 9

Student survey scores for research question #2

<table>
<thead>
<tr>
<th>GRADE</th>
<th>GRADE 9 SCORES</th>
<th>GRADE 10 SCORES</th>
<th>GRADE 11 SCORES</th>
<th>GRADE 12 SCORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>84 64</td>
<td>68 71</td>
<td>77 66</td>
<td>64 61</td>
</tr>
<tr>
<td></td>
<td>88 70</td>
<td>74 90</td>
<td>79 73</td>
<td>100 69</td>
</tr>
<tr>
<td></td>
<td>71 83</td>
<td>78 63</td>
<td>84 59</td>
<td>67 55</td>
</tr>
<tr>
<td></td>
<td>82 79</td>
<td>65 75</td>
<td>59 64</td>
<td>92 90</td>
</tr>
<tr>
<td></td>
<td>77 78</td>
<td>72 81</td>
<td>78 60</td>
<td>66 64</td>
</tr>
<tr>
<td>FEMALE</td>
<td>93 70</td>
<td>83 67</td>
<td>76 84</td>
<td>58 45</td>
</tr>
<tr>
<td></td>
<td>73 64</td>
<td>91 81</td>
<td>64 54</td>
<td>84 74</td>
</tr>
<tr>
<td></td>
<td>76 73</td>
<td>66 45</td>
<td>66 77</td>
<td>75 67</td>
</tr>
<tr>
<td></td>
<td>67 74</td>
<td>73 60</td>
<td>68 55</td>
<td>72 77</td>
</tr>
<tr>
<td></td>
<td>76 68</td>
<td>77 82</td>
<td>57 77</td>
<td>76 70</td>
</tr>
</tbody>
</table>

Note. Individual scores of high school students were selected on a random basis for analysis. Scores are distributed by gender and grade level.

Table 10

Table of means for research question #2

<table>
<thead>
<tr>
<th></th>
<th>GRADE 9</th>
<th>GRADE 10</th>
<th>GRADE 11</th>
<th>GRADE 12</th>
<th>ROW MEANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>77.6</td>
<td>73.7</td>
<td>69.9</td>
<td>72.8</td>
<td>73.5</td>
</tr>
<tr>
<td>FEMALE</td>
<td>73.4</td>
<td>72.5</td>
<td>67.8</td>
<td>69.8</td>
<td>69.8</td>
</tr>
<tr>
<td>COLUMN MEANS</td>
<td>75.5</td>
<td>73.1</td>
<td>68.9</td>
<td>71.3</td>
<td>$\bar{x}=72.2$</td>
</tr>
</tbody>
</table>

Note. All statistical calculations of the ANOVA were performed at the .05 level of significance.

Hypothesis #4:

$H_0$: $\mu_9=\mu_{10}=\mu_{11}=\mu_{12}$ Grade level has no effect on the
instructional climate of a high school as perceived by high school students and measured by the CAREI student survey.

Fail to reject

**Hypothesis #5:**

$H_0: \mu_{\text{male}} = \mu_{\text{female}}$ Gender has no effect on the instructional climate of a high school as perceived by high school students and measured by the CAREI student survey.

Fail to reject

**Hypothesis #6:**

$H_0: \mu_{9 \text{ male}} - \mu_{9 \text{ female}} = \mu_{10 \text{ male}} - \mu_{10 \text{ female}} = \mu_{11 \text{ male}} - \mu_{11 \text{ female}} = \mu_{12 \text{ male}} - \mu_{12 \text{ female}}$. There is no interaction between grade level and gender on the instructional benefits of block scheduling as perceived by high school students and measured by the CAREI student survey. Fail to reject

The examiner fails to reject $H_0$ and accepts that grade level and gender have no effect on the instructional climate of a high school as perceived by high school students and measured by the CAREI student survey. Also, there is no interaction between grade level and gender on the instructional climate of block scheduling as perceived by the high school students and measured by the same instrument.
RESEARCH QUESTION #3

Are there professional benefits for high school teachers using a schedule of extended periods of class time?

Frequency distributions were developed to present the findings. A score of 280 equaled the total number of points that could be received answering survey question 3. A score of 140 or more indicates a positive response to the question, "Are there professional benefits for high school teachers using a schedule of extended periods of class time?" (See figures 9-13).

Tables 11 and 12 present statistical data and results of the ANOVA developed in relation the research question, "Are there professional benefits for high school teachers using a schedule of extended periods of class time?" Gender, years of experience and the interaction between both variables were analyzed to see if there was any effect on the professional benefits of block scheduling as perceived by high school teachers as measured by the CARET teacher survey. A random sample of 50 teachers was selected for the analysis. (See tables 11-12).
Figure 9

<table>
<thead>
<tr>
<th>Male Benefits</th>
<th>Female Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>157</td>
<td>152</td>
</tr>
<tr>
<td>120</td>
<td>152</td>
</tr>
<tr>
<td>152</td>
<td>189</td>
</tr>
<tr>
<td>129</td>
<td>184</td>
</tr>
<tr>
<td>147</td>
<td>156</td>
</tr>
</tbody>
</table>

Teachers with 1-5 years of Experience

<table>
<thead>
<tr>
<th># of respondents</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>200</td>
</tr>
<tr>
<td>2</td>
<td>150</td>
</tr>
<tr>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

- Male Benefits
- Female Benefits

Figure 10

<table>
<thead>
<tr>
<th>Male Benefits</th>
<th>Female Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>138</td>
<td>133</td>
</tr>
<tr>
<td>114</td>
<td>176</td>
</tr>
<tr>
<td>152</td>
<td>263</td>
</tr>
<tr>
<td>186</td>
<td>147</td>
</tr>
<tr>
<td>97</td>
<td>151</td>
</tr>
</tbody>
</table>

Teachers With 6-10 Years of Experience

<table>
<thead>
<tr>
<th># of respondents</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>300</td>
</tr>
<tr>
<td>2</td>
<td>200</td>
</tr>
<tr>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

- Male Benefits
- Female Benefits

Note. Professional Benefits - A score of 280 equaled the total number of points that could be received answering survey question #3. A score of 140 or more indicates a positive response to the question, "Are there professional benefits for high school teachers using a schedule of extended periods of time?"
Figure 11

<table>
<thead>
<tr>
<th>Male Benefits</th>
<th>Female Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>174</td>
</tr>
<tr>
<td>148</td>
<td>148</td>
</tr>
<tr>
<td>168</td>
<td>188</td>
</tr>
<tr>
<td>140</td>
<td>174</td>
</tr>
<tr>
<td>147</td>
<td>139</td>
</tr>
</tbody>
</table>

Teachers with 11-15 Years of Experience

Figure 12

<table>
<thead>
<tr>
<th>Male Benefits</th>
<th>Female Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>123</td>
<td>168</td>
</tr>
<tr>
<td>129</td>
<td>154</td>
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<tr>
<td>145</td>
<td>151</td>
</tr>
<tr>
<td>132</td>
<td>121</td>
</tr>
<tr>
<td>97</td>
<td>157</td>
</tr>
</tbody>
</table>

Teachers with 16-20 Years of Experience

Note. Professional Benefits - A score of 280 equaled the total number of points that could be received answering survey question #3. A score of 140 or more indicates a positive response to the question, "Are there professional benefits for high school teachers who have been scheduled for extended periods of time?"
Figure 13

<table>
<thead>
<tr>
<th>Male Benefits</th>
<th>Female Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>234</td>
<td>95</td>
</tr>
<tr>
<td>180</td>
<td>110</td>
</tr>
<tr>
<td>177</td>
<td>111</td>
</tr>
<tr>
<td>167</td>
<td>108</td>
</tr>
<tr>
<td>147</td>
<td>249</td>
</tr>
</tbody>
</table>

Teachers with 20+ Years of Experience

**Note.** Professional Benefits - A score of 280 equaled the total number of points that could be received answering survey question #3. A score of 140 or more indicates a positive response to the question, "Are there professional benefits for high school teachers who have been scheduled for extended periods of time?"

From the data displayed in graphs #9-#13 one can state:
80% of the teachers with 1-5 years of experience responded positively;
60% of the teachers with 6-10 years of experience responded positively;
70% of the teachers with 11-15 years of experience responded positively;
60% of the teachers with 16-20 years of experience responded positively;
60% of the teachers with 20+ years of experience responded positively.
Table 11

Teacher survey scores for research question 3

<table>
<thead>
<tr>
<th>YEARS OF EXPERIENCE</th>
<th>1-5</th>
<th>6-10</th>
<th>11-15</th>
<th>16-20</th>
<th>20+</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MALE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>157</td>
<td>138</td>
<td>130</td>
<td>123</td>
<td>234</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>114</td>
<td>148</td>
<td>129</td>
<td>180</td>
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</tr>
<tr>
<td>152</td>
<td>152</td>
<td>113</td>
<td>145</td>
<td>177</td>
<td></td>
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<tr>
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<td>143</td>
<td>167</td>
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<td>97</td>
<td>140</td>
<td>132</td>
<td>147</td>
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</tr>
<tr>
<td><strong>FEMALE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>152</td>
<td>133</td>
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<tr>
<td>189</td>
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<td>184</td>
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</tr>
<tr>
<td>156</td>
<td>151</td>
<td>139</td>
<td>157</td>
<td>249</td>
<td></td>
</tr>
</tbody>
</table>

Note. Individual scores of high school teachers were selected on a random basis for analysis. Scores are distributed by gender and years of experience.

Table 12

Table of means for research question #3

<table>
<thead>
<tr>
<th>YEARS OF EXPERIENCE</th>
<th>1-5</th>
<th>6-10</th>
<th>11-15</th>
<th>16-20</th>
<th>20+</th>
<th>ROW MEANS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MALE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>141</td>
<td>137.4</td>
<td>139.8</td>
<td>134.4</td>
<td>181</td>
<td></td>
<td>146.7</td>
</tr>
<tr>
<td><strong>FEMALE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>166.6</td>
<td>174</td>
<td>163.4</td>
<td>150.2</td>
<td>134.6</td>
<td></td>
<td>157.8</td>
</tr>
<tr>
<td><strong>COLUMN MEANS</strong></td>
<td>153.8</td>
<td>155.7</td>
<td>151.6</td>
<td>142.3</td>
<td>157.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X=152.2</td>
</tr>
</tbody>
</table>

Note. All statistical calculations of the ANOVA were performed at the .05 level of significance.
Hypothesis #7:

H01: \( \mu_{1-5} = \mu_{6-10} = \mu_{11-15} = \mu_{16-20} = \mu_{20+} \) Years of experience have no effect on the professional benefits for high school teachers using extended periods of time as perceived by high school teachers and measured by the CAREI teacher survey. Fail to reject.

Hypothesis #8:

H02: \( \mu_{\text{male}} = \mu_{\text{female}} \) Gender has no effect on professional benefits for high school teachers using extended periods of time as perceived by high school teachers and measured by the CAREI teacher survey. Fail to reject.

Hypothesis #10:

H03: \( \mu_{m,1-5} - \mu_{f,1-5} = \mu_{m,6-10} - \mu_{f,6-10} = \mu_{m,11-15} - \mu_{f,11-15} = \mu_{m,16-20} - \mu_{f,16-20} = \mu_{m,20+} - \mu_{f,20+} \). There is no interaction between years of experience and gender on the professional benefits of block scheduling as perceived by high school teachers and measured by the CAREI teacher survey. Fail to reject.

The examiner fails to reject H01, H02 and H03 and accepts that years of experience and gender have no effect on the professional benefits extended periods of learning as perceived by high school teachers and measured by the CAREI teacher survey. Also, there is no interaction between years
of experience and gender of the instructional benefits of block scheduling as perceived by the high school teachers and measured by the same instrument.

**RESEARCH QUESTION #4**

Does block scheduling affect the professional climate of a high school?

Frequency distributions were developed to present the findings. A score of 160 equaled the total number of points that could be received answering survey question 4. A score of 80 or more indicates a positive response to the question, "Does block scheduling affect the professional climate of a high school?" (See figures 14-18).

Tables 13 and 14 present statistical data and results of the ANOVA developed in relation the research question, "Does block scheduling affect the professional climate of a high school?" Gender, years of experience and the interaction between both variables were analyzed to see if there was any effect on the professional benefits of block scheduling as perceived by high school teachers as measured by the CAREI teacher survey. A random sample of 50 teachers was selected for the analysis. (See tables 13-14).
Figure 14

<table>
<thead>
<tr>
<th>Male Climate</th>
<th>Female Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>97</td>
<td>150</td>
</tr>
<tr>
<td>64</td>
<td>132</td>
</tr>
<tr>
<td>83</td>
<td>109</td>
</tr>
<tr>
<td>134</td>
<td>109</td>
</tr>
<tr>
<td>76</td>
<td>88</td>
</tr>
</tbody>
</table>

Teachers with 1-5 years of Experience

Figure 15

<table>
<thead>
<tr>
<th>Male Climate</th>
<th>Female Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
<td>84</td>
</tr>
<tr>
<td>86</td>
<td>141</td>
</tr>
<tr>
<td>89</td>
<td>101</td>
</tr>
<tr>
<td>102</td>
<td>79</td>
</tr>
<tr>
<td>66</td>
<td>82</td>
</tr>
</tbody>
</table>

Teachers With 6-10 Years of Experience

Note. Professional Climate - A score of 160 equaled the total number of points that could be received answering survey question #4. A score of 80 or more indicates a positive response to the question, "Does block scheduling affect the professional climate of a high school?"
Figure 16

<table>
<thead>
<tr>
<th>Male Climate</th>
<th>Female Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>69</td>
<td>88</td>
</tr>
<tr>
<td>68</td>
<td>100</td>
</tr>
<tr>
<td>107</td>
<td>106</td>
</tr>
<tr>
<td>85</td>
<td>97</td>
</tr>
<tr>
<td>82</td>
<td>90</td>
</tr>
</tbody>
</table>

Teachers with 11-15 Years of Experience

Figure 17

<table>
<thead>
<tr>
<th>Male Climate</th>
<th>Female Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>89</td>
<td>129</td>
</tr>
<tr>
<td>82</td>
<td>127</td>
</tr>
<tr>
<td>75</td>
<td>101</td>
</tr>
<tr>
<td>96</td>
<td>93</td>
</tr>
<tr>
<td>63</td>
<td>104</td>
</tr>
</tbody>
</table>

Teachers with 16-20 Years of Experience

Note. Professional Climate - A score of 160 equaled the total number of points that could be received answering survey question #4. A score of 80 or more indicates a positive response to the question, "Does block scheduling affect the professional climate of a high school?"
Figure #18

<table>
<thead>
<tr>
<th>Male Climate</th>
<th>Female Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>73</td>
</tr>
<tr>
<td>101</td>
<td>96</td>
</tr>
<tr>
<td>110</td>
<td>96</td>
</tr>
<tr>
<td>119</td>
<td>115</td>
</tr>
<tr>
<td>102</td>
<td>128</td>
</tr>
</tbody>
</table>

Teachers with 20+ Years of Experience

Note. Professional Climate - A score of 160 equaled the total number of points that could be received answering survey question #4. A score of 80 or more indicates a positive response to the question, "Does block scheduling affect the professional climate of a high school?"

From the data displayed in graphs #14-#18 one can state:
80% of the teachers with 1-5 years of experience responded positively;
90% of the teachers with 6-10 years of experience responded positively;
80% of the teachers with 11-15 years of experience responded positively;
80% of the teachers with 16-20 years of experience responded positively;
80% of the teachers with 20+ years of experience responded positively.
Table 13

Teacher survey scores for research question #4

<table>
<thead>
<tr>
<th>YEARS OF EXPERIENCE</th>
<th>1-5</th>
<th>6-10</th>
<th>11-15</th>
<th>16-20</th>
<th>20+</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>97</td>
<td>95</td>
<td>69</td>
<td>89</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>64</td>
<td>86</td>
<td>68</td>
<td>82</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>83</td>
<td>89</td>
<td>107</td>
<td>75</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>134</td>
<td>102</td>
<td>85</td>
<td>96</td>
<td>119</td>
</tr>
<tr>
<td></td>
<td>76</td>
<td>66</td>
<td>82</td>
<td>63</td>
<td>102</td>
</tr>
<tr>
<td>FEMALE</td>
<td>150</td>
<td>84</td>
<td>88</td>
<td>129</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>132</td>
<td>141</td>
<td>100</td>
<td>127</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>109</td>
<td>101</td>
<td>106</td>
<td>101</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>88</td>
<td>79</td>
<td>97</td>
<td>93</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>109</td>
<td>82</td>
<td>90</td>
<td>104</td>
<td>128</td>
</tr>
</tbody>
</table>

Note. Individual scores of high school teachers were selected on a random basis for analysis. Scores are distributed by gender and years of experience.

Table 14

Table of means for research question #4

<table>
<thead>
<tr>
<th>YEARS OF EXPERIENCE</th>
<th>1-5</th>
<th>6-10</th>
<th>11-15</th>
<th>16-20</th>
<th>20+</th>
<th>ROW MEANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>90.8</td>
<td>87.6</td>
<td>82.2</td>
<td>81</td>
<td>111.4</td>
<td>90.6</td>
</tr>
<tr>
<td>FEMALE</td>
<td>117.6</td>
<td>97.4</td>
<td>96.2</td>
<td>110.8</td>
<td>101.6</td>
<td>104.7</td>
</tr>
<tr>
<td>COLUMN MEANS</td>
<td>104.2</td>
<td>92.5</td>
<td>89.2</td>
<td>95.9</td>
<td>106.5</td>
<td>97.7</td>
</tr>
</tbody>
</table>

Note. All statistical calculations of the ANOVA were performed at the .05 level of significance.

Hypothesis #10:

H01: μ1-5 = μ6-10 = μ11-15 = μ16-20 = μ20+ Years of experience have no
effect on the professional climate of a high school that uses extended periods of time as perceived by high school teachers and measured by the CAREI teacher survey. Fail to reject.

**Hypothesis #11:**

**Ho2:** μ male = μ female. Gender has an effect on the professional climate of a high school that uses extended periods of time as perceived by high school teachers and measured by the CAREI teacher survey. Reject.

**Hypothesis #12:**

**H03:** μm, 1-5-μf, 1-5 = μm, 6-10-μf, 6-10 = μm, 11-15-μf, 11-15 = μm, 16-20-μf, 16-20 = μm, 20+-μf, 20+. There is no interaction between years of experience and gender on the professional climate of a high school that uses extended periods of time as perceived by high school teachers and measured by the CAREI teacher survey. Fail to reject.

The examiner fails to reject H01 and H03 and rejects H02. Years of experience have no effect on the professional climate of a high school as perceived by the high school teachers and measured by the CAREI teacher survey. Also, there is no interaction between grade level and gender on the instructional benefits of block scheduling as perceived by the high school students and measured by the same instrument. However, gender does have an effect on the professional
climate of a high school as perceived by the high school teachers and measured by the CAREI teacher survey.

Because the examiner rejected the null, the Scheffe technique was applied to hypothesis #11. The researcher is 95% confident the true difference between male and female high school teachers as it pertains to professional climate falls between 3.5 and 24.7 points with the best estimate being 14.1 points. In other words, this researcher is 95% confident that female high school teachers score 3.5 to 24.7 points higher than male high school teachers, as measured by the CAREI teacher instrument, on the average of 14.1 points. Female high school teachers see a more positive effect on the professional climate of a high school with block scheduling than their male counterparts. The analysis presented in Chapter IV will be summarized and analyzed in Chapter V.
CHAPTER V

Summary

This section includes 4 major areas: (a) Summary of the Study, (b) Summary of the Findings, (c) Conclusions/ Discussions and (d) Recommendations. The quantitative results of Chapter IV will be used to supply information for each area.

Summary of the Study

This study was conducted to identify students' and teachers' perceptions of block scheduling as they affected the instructional and professional climate of a high school. It is the belief of this researcher that if students and teachers could spend longer amounts of time together during the school day: (a) Students' academic performance will improve; (b) students will develop more positive relationships with their teachers and other students; and therefore feel better about themselves and their schools, (c) teachers will have more time to address students' individual needs and have more time to be creative in their lessons, and (d) teachers will develop a higher level of job satisfaction when they are able to implement a variety of teaching
strategies.

This researcher also believes, based on the data presented by Carroll and Whitla (1998) in their final report to the district under study, that a restructuring of time will improve student learning by providing more time on task, and it will encourage teachers to readjust their strategies so classes can become more student focused and responsive to identified student needs. The instructional and professional climate of a school are important parts of a total learning and teaching experience. Both can contribute to or detract from learning and teaching. This is especially true in a high school where students from families of low socio-economic backgrounds have a significantly difficult time adjusting to a regular classroom setting.

This study has focused on students in the 4 comprehensive high schools in a New Jersey school district that has been under state control for 9 years. Based on the literature review in Chapter II of Carroll, (1997) Carroll and Whitla (1998), Beane (1990), Buckman, King and Ryan, (1995) and Canady and Rettig (1995) and the research findings in Chapter IV, it is hoped that administrators from the State Department of Education and the district will realize the importance of restructuring high schools using extended periods of class time. The implications of this research
study have to do with how the findings of this study might be used on a practical level within the schools by administrators, staff and students.

This study was conducted during the month of January 1999, with 80 students in the ninth, tenth, eleventh, and twelfth grades from the 4 high schools in the state run district selected by this researcher. The stratified, purposeful, random sample of 80 students was selected from the 381 students who participated in and completed the student survey. An equal number of male and female students, as noted on demographic question 6 on the student survey, and grade levels, as noted in demographic question 7 on the student survey were studied. In addition, a stratified, purposeful, random sample of 50 teachers was selected from the 81 teachers who participated in and completed the teacher survey. An equal number of high school teachers male and female, as noted in demographic question 5 on the teacher survey, from 1 to 20 years of experience, as noted in demographic question 2 on the staff survey were surveyed.

Student participants were asked to complete a survey questionnaire that indicated their perceptions of their schools and their teachers. Teacher participants were asked to complete a survey questionnaire that indicated their perceptions of their schools and their students. Both survey
instruments are from the University of Minnesota, Center for Applied Research and Educational Improvement (CAREI). Both surveys are designed to measure the instructional (student) and professional (teacher) climate of 4 high schools that implemented a 4x4 block schedule. The student instrument consists of two parts—demographic information and survey questions measuring students' perceptions of the effect of block scheduling on their learning and the way teachers teach, which this paper has defined as "instructional climate." The survey questions were analyzed using frequency distributions and an analysis of variance with the variables of grade level and gender. The teacher instrument consists of two parts, demographic information and survey questions, measuring teacher perceptions of the effect of block scheduling on their teaching and the way students learn, which this paper has defined as "professional climate." These parts were analyzed using frequency distributions and an analysis of variance with the demographic variables of gender and years of experience.

Summary of Findings

The findings of the study are summarized in reference to each research question.

1. Are there instructional benefits for high school students
who have been scheduled for extended periods of time?

In relation to the frequency distributions presented for this question, the following percentages represent a positive response to the clusters of questions (Student Engagement, Student Attitudes Towards School, Students’ Perceptions of the 4 Period Day, How Often Certain Student Activities Occur in Class) on the student survey that relate to question 1. (a) 85% of ninth graders responded positively, (b) 100% of the tenth graders responded positively, (c) 55% of the eleventh graders responded positively, (d) 90% of the twelfth graders responded positively.

On all grade levels, male and female, there is a significant pattern of positive responses to the question, “Are there instructional benefits for high school students scheduled for extended periods of time?”

Three hypothesis were tested using an Analysis of Variance in relation to research question 1 as it applied to gender and grade level and the interaction between the two variables. The result was that gender has no effect on how high school students perceive the instructional benefits of block scheduling. Also, there was no significant interaction between the variables as it pertained to the instructional benefits of block scheduling. However, grade level did have
an effect on the instructional benefits of block scheduling. Students in grade 10 scored significantly higher than students in grade 11 when answering the survey questions that related to research Question 1. After performing a Scheffe Test to determine significance, this researcher is 95% confident that the true difference between tenth graders and eleventh graders falls between 0 and 26.8 points with the best estimate of 13.4 points higher for grade 10 over grade 11. Students in grade 10 perceive a more positive effect on the instructional benefits of block scheduling than students in grade 11. In addition, the majority of students answered positively to research question 1.

2. Are there professional benefits for high school teachers using a schedule of extended periods of class time?

In relation to the frequency distributions presented for this question, the following percentages represent a positive response to the clusters of questions (Facilitating Student Achievement, Maintaining Order/Improving Student Achievement, Student Behavior, Fostering Quality Education, Teacher Collaboration, Improving Teacher Work Life, How Frequently Teachers Do Various Tasks and Teachers’ Perceptions of the 4x4 Block) on the teacher survey that relate to question 2: (a) 80% of the teachers with 1-5 years of experience responded positively, (b) 60% of the teachers with 6-10 years
of experience responded positively, (c) 70% of the teachers with 11-15 years of experience responded positively, (d) 60% of the teachers with 16-20 years of experience responded positively, (e) 60% of the teachers with 20+ years of experience responded positively.

In all years of teacher experience, male and female, there is a significant pattern of positive responses to the question, "Are there professional benefits for high school teachers using a schedule of extended periods of class time?"

Three hypothesis were tested using an Analysis of Variance in relation to research question 2 as it applied to gender and years of experience and the interaction between the two variables. It was proven that gender and years of experience have no effect on how high school teachers perceive the professional benefits of block scheduling. Also, there was no significant interaction between the variables as it pertained to the professional benefits of block scheduling. In addition, the majority of teachers answered positively to research question 2.

3. Does block scheduling affect the instructional climate of a high school?

In relation to the frequency distributions presented for this question, the following percentages represent a positive response to the clusters of questions (School Climate, Having
Time To Do Things, Knowing Other Students, Respect For Learning, Student Behavior, Boredom, Teacher Quality and Personal Care For Students) on the student survey that relate to question 3: (a) 100% of ninth graders responded positively, (b) 95% of the tenth graders responded positively, (c) 75% of the eleventh graders responded positively, (d) 85% of the twelfth graders responded positively.

On all grade levels there is a significant pattern of positive responses to the question, “Does block scheduling affect the instructional climate of a high school?”

Three hypothesis were tested using an Analysis of Variance in relation to research question 3 as it applied to gender and grade level and the interaction between the two variables. It was proven that gender and grade level have no effect on how high school students perceive the instructional climate with block scheduling. Also, there was no significant interaction between the variables as it pertained to the instructional climate of block scheduling. In addition, the majority of students answered positively to research question 3.

4. Does block scheduling affect the professional climate of a high school?

In relation to the frequency distributions presented for
this question, the following percentages represent a positive response to the clusters of questions (Sense of Community, Shared Norms and Values, Focus on Student Learning, Teacher Influence/Empowerment, Respect and Support, Opportunity For Improvement, Whether Teachers Felt Overworked) on the teacher survey that relate to question 4: (a) 80% of the teachers with 1-5 years of experience responded positively, (b) 90% of the teachers with 6-10 years of experience responded positively, (c) 80% of the teachers with 11-15 years of experience responded positively, (d) 80% of the teachers with 16-20 years of experience responded positively, (e) 80% of the teachers with 20+ years of experience responded positively.

In all years of teacher experience, there is a significant pattern of positive responses to the question, "Does block scheduling affect the professional climate of a high school"

Three hypothesis were tested using an Analysis of Variance in relation to research question 4 as it applied to gender and years of experience and the interaction between the two variables. It was proven that years of experience have no effect on how high school teachers perceive the professional climate with block scheduling. Also, there was no significant interaction between the variables as it
pertained to the professional climate of block scheduling. However, gender did have an effect on the professional climate with block scheduling. Female teachers scored significantly higher than male teachers when answering the survey questions that related to research Question 4.

After performing a Scheffe Test to determine significance, this researcher is 95% confident that the true difference between female teachers and male teachers falls between 3.5 and 24.7 points with the best estimate of 14.1 points higher for female teachers over male teachers. Female teachers perceive a more positive effect on the professional climate with block scheduling than male teachers. In addition, the majority of teachers answered positively to research question 2.

Conclusions/Discussions

Based on the findings of the investigation, the following conclusions were formed:

1. High school students in all grade levels, male and female, perceive more positive instructional benefits in a school that has block scheduling. This supports Dr. Joseph Carroll’s Final Copernican Report (1998) in the school district under study. In the report Carroll states the
data indicates the typical student in the 4 high schools studied by this researcher is learning about 24% more of the school's curriculum than he/she did under the traditional 8 period day. A 4 point scale (A=4 points; B=3 points; C=2 points; D=1 point; F receives no points), was used to evaluate academic performance (see Table 4). In addition, High School Proficiency Test scores in Mathematics have risen slightly (see Table 2). Another measure used by Dr. Carroll to prove mastery of academic subjects is based upon the number of courses students complete successfully within a given year.

Dr. Carroll also states in his Final Copernican Report (1998) that under a 4x4 semester block, students can complete more courses within a school year than they could with the traditional schedule. From the school year 1995-96 to 1997-98 (first two years of block scheduling in the district under study), students earned 22.3% more credits and mastered 25.7% more subjects than they did during the traditional 8 period 45 minute class schedule.

The Anoka-Hennepin (Maruyama, et.al., 1995) student survey of the 4 period day conducted by the CAREI also supports the belief that students get better grades in a 4 block day as opposed to a traditional 8 period day (see Table 3).

2. As reported in Chapter IV, the majority of students in all
grade levels, male and female, especially tenth graders see positive advantages with block scheduling as they relate to instructional benefits of a high school.

3. Teachers with all levels of experience, male and female perceive more positive professional benefits in a high school that has block scheduling. This supports the 1994 study conducted in Broward County, Florida (Cushman, 1995) that reported that after only one (1) year of a 4x4 block schedule, most teachers were eager to continue with this type of restructuring, and in fact, volunteered to attend professional development seminars over the summer to learn more innovative teaching strategies.

The Minnesota CAREI report (1995) of the 4x4 block also states that teachers find the paper work easier to handle because they have fewer preparations and fewer students with the extended period day. As reported in Chapter IV, the majority of teachers with all years of experience, male and female, see positive advantages with block scheduling as they relate to professional benefits. It is interesting to note that the greatest number of teachers (80%) with only 1-5 years of experience enjoyed this type of scheduling more than any other group of teachers.

4. Students in all grade levels, male and female, perceive the instructional climate as more positive in a 4x4 block.
This supports the 1994 CAREI study (Maruyama, et al., 1995) that compared two schools with a 4x4 block to two high schools with a traditional eight period day. The results of the survey stated that students' attitudes were more positive in a 4x4 block schedule and also students viewed school more favorably than students in high schools with a traditional schedule. Canady and Rettig (1995) report that this type of restructuring in high schools can be a tremendous source for change as it affects the quality of time students spend in school. In addition, both authors state that extended periods of learning improve the instructional climate of a school.

5. As reported in Chapter IV, the majority of students in all grade levels, male and female, see more benefits with block scheduling as they relate to the instructional climate of a high school.

6. A majority of teachers with all levels of experience, male and female, perceive a more positive professional climate in a high school that has block scheduling. In this study, females perceive a more positive climate than males do. This supports the research of Wilson, Pentacoste and Bailey (1984) that reports that male teachers tend to be more negative than female teachers are. The authors also report that teaching experience did not affect school climate,
which also supports the researcher in this study. In addition, Dr. Carroll in his 1997 Copernican Report to the district under study stated that the majority of teachers responded positively to survey questions on professional climate. Some of these questions included, "I enjoy teaching;" I am able to provide good, quality instruction for my students;" and "I am able to make good use of my time."

Traverso (1991) also reports that job satisfaction levels are much higher when teachers have the time to implement a variety of innovative and creative teaching strategies. This supports this researcher’s findings that extended periods of time for teaching and learning can provide a more positive professional climate for high school teachers. As reported in Chapter IV, the majority of teachers with all levels of experience, male and female, see a more positive professional climate with block scheduling.

The findings in this study are consistent with the literature presented in Chapter II. The 4 research questions that drove this study concerned instructional benefits and instructional climate for students and professional benefits and professional climate for teachers as each pertained to extended periods of learning, specifically the 4x4 block, in a high school. The majority of students and teachers
preferred block scheduling to traditional scheduling. Teachers, male and female, with all years of experience prefer this type of restructuring because with it there is a more positive school climate, with improved teacher/student relationships. The majority of students prefer block scheduling in their high schools because of improved student/teacher relationships, higher grade point averages and an overall more positive school climate.

After two full years of implementation in the district under study, the general perceptions of both respondents, teachers and students, correlate with the Carroll and Whitla (1997, 1998) findings conducted during the first 2 years of the Copernican (4x4) schedule. The information in this report will be presented to the State District Superintendent and each of the 4 high school principals of the schools where the study was conducted for their review.

The purpose of this study is to use the information and data collected to develop on-going plans for continuation of this type of restructuring in the district studied by this researcher. The literature presented in Chapter II and the data collected with the CAREI student and teacher surveys support the research of Carroll and Whitla (1998), Canady and Rettig (1995), and Maruyama and associates (1995).
Restructuring of high schools to include extended periods of learning will improve the over-all climate of the schools and will provide more positive benefits for learning and teaching.

Restructuring high schools with extended periods of time is an idea that has rapidly taken hold in the nation today as a means of creating more quality time during the school day. Time is an element of life most people say they don't have enough of. Those in the filed of education continue to look for more and better ways to use it. Although block scheduling is not a panacea for the problems facing the nation's schools today, through its use, students and teachers will be provided with extended opportunities for enhanced learning and more creative and innovative teaching. Extended periods of learning and teaching can be a catalyst for change in our schools; however, as Dr. Joseph Carroll clearly states, "Block scheduling is not merely a question of time, it is a question of learning." (1994, p.29).

Recommendations

As a direct result of this study, the following recommendations are listed for future reference:

1. The present study should be replicated with a specific
analysis on how extended periods affect the curriculum as it is now written to conform to the New Jersey Core Curriculum Content Standards and Workplace Readiness Skills. This would be an interesting study, especially focusing on how teachers address the issue of "pacing" their lessons to adapt to the new state curriculum.

2. It would be interesting to investigate why females enjoy a more positive "professional climate" with block scheduling than males. Although this variable was noted within the research analysis, it was not studied because it was not driven by one the research questions.

3. The present study should be replicated to investigate why students in the tenth grade enjoy more positive instructional benefits with block scheduling than students in the ninth, eleventh and twelfth grades. Because most of the students in the district under study drop out in the ninth and tenth grades, further research should determine if continued implementation of block scheduling will significantly reduce the dropout rate in these grades.

4. Further study using a different climate instrument should be conducted to verify the validity of the conclusions after another year of block scheduling in the district under study.
References


APPENDIXES
APPENDIX A
STUDENT SURVEY
UNIVERSITY OF MINNESOTA
Dear Student: I am presently a graduate student at Seton Hall University, and one of the projects I have to complete is to find out whether block scheduling in your high school provides a more positive environment in which for you to learn. To do this, I am asking you to complete the survey below. It should take you about 15 minutes. Your responses, along with those of other students in your school and in the district, will be analyzed to help determine if the 4 x 4 block schedule helps you to learn more effectively. Your responses will be kept anonymous. Please do not write your name on the survey sheet or the answer sheet. If you choose not to answer the survey, please return the form to your teacher. Thank you very much for taking the time to help me complete my project.

PLEASE USE A PENCIL AND MARK ALL YOUR ANSWERS ON THE BUBBLE SHEET.

PART 1:

1. What is your overall opinion of this school?
   A. It’s a great school.
   B. It’s a good school.
   C. It’s not a good school.

2. Do you have a job?
   A. Yes
   B. No

3. If you have a job, how many hours a week do you work? (If you don’t have job, leave this question blank).
   A. 0-5 hours
   B. 6-10 hours
   C. 11-15 hours
   D. 16-20 hours
   E. Over 20 hours

4. How many hours a week do you spend in extracurricular activities? (Sports, clubs, etc. If you don’t spend any time in extracurricular activities, leave this question blank).
   A. 0-5 hours
   B. 6-10 hours
   C. 11-15 hours
   D. 16-20 hours
   E. Over 20 hours

5. What grades do you usually receive? (Mark only one bubble).
   A. Mostly A’s
   B. A’s and B’s
   C. B’s and C’s
   D. C’s and D’s
   E. D’s and F’s
6. Gender  
   A. Male  
   B. Female  

8. How much time do you spend on your homework everyday after school?  
   A. 0-30 minutes  
   B. 30 minutes-1 hour  
   C. 1-2 hours  
   D. 2-3 hours  
   E. 3 or more hours  

7. What grade are you in?  
   A. 9th  
   B. 10th  
   C. 11th  
   D. 12th  

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**PART 2: HOW MUCH DO YOU AGREE WITH THE FOLLOWING STATEMENTS ABOUT YOUR SCHOOL AND YOUR TEACHERS?**

<table>
<thead>
<tr>
<th>STRONGLY DISAGREE</th>
<th>STRONGLY AGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
</tbody>
</table>

9. I learn a lot in this school.
10. Most of my classes this year are interesting and enjoyable.
11. Often I don’t understand my homework.
12. I have too much homework.
13. Often I feel bored in class.
14. Many students don’t care about learning.
15. I see myself as a successful student.
16. Some of my classes are just too long.
17. I can take a day off from school and not miss much work.
18. Students in this school show respect for others who work hard and do well.
19. Class time seems to go by quickly.
20. Most teachers seem to enjoy teaching.
21. Most teachers make good use of class time.
22. Most teachers are willing to give extra help when I don’t understand something.
23. Students get along well with teachers.
24. There is a real school spirit.
25. Students in this school get along well with one another.
26. Students of different races get along well in this school.
27. School is a pretty lonely place.
28. Often, I have trouble understanding what is being taught in class.
29. I have time to get to know other students in class.
30. Students have time to talk with their friends during the school day.
31. My teachers care about how much I am learning.
32. It seems like I am always rushing to get to places.
33. When I miss class, it's hard to catch up.
34. I feel safe in this school.
35. Students in this school behave well in class.
36. Students in this school behave well in the hallways.
37. In this school, I don't feel "put down" by other students.
38. Many students come late to class.
39. During class, I often feel lost.
40. I am proud to tell others I go to this school.
41. My school provides me with good academic opportunities.
42. The courses I am taking are preparing me for my future.
43. It's easy to organize my work and keep up with what is expected of me.
44. What I learn in one class relates to what I learn in other classes.
45. There is at least one adult in this school I can talk to who knows me.
46. I am able to get in-school help if I have a personal problem.
47. I feel the 4 x 4 block schedule has helped me to get better grades.
48. I feel the 4 x 4 block schedule helps me to have a better understanding of the subject.
49. I would rather have seven 45-minute classes every day instead of four 80-minute classes.
PART 3: DURING CLASS, HOW OFTEN DO YOU DO THESE THINGS IN CLASS?

NEVER OR Seldom  ---->  ALMOST ALL THE TIME

A ---> B ---> C ---> D ---> E

50. Think hard about ideas.
51. Have in-depth discussions.
52. Do a variety of activities in most class periods.
53. Work in small groups.
54. Fill out worksheets.
55. Listen to teachers lecture.
56. Do activities (projects and special class assignments) to apply what I have learned.
57. Do research or problem solving activities.
58. Write a research paper, story or multi-page report.
59. Take tests that require me to write essays (3-5 paragraphs) to explain what I know.
60. Use computers during class.

THANK YOU FOR TAKING THE TIME TO HELP ME WITH MY RESEARCH!
APPENDIX B

SURVEY GRID SHEETS

FORM 882
APPENDIX C

STAFF SURVEY

UNIVERSITY OF MINNESOTA
Dear Staff Member: I am presently a doctoral student at Seton Hall University. My dissertation topic concerns extended class periods and whether block scheduling provides a more productive and effective school climate as compared to a seven period day. To help me make this determination, I am asking you to complete the survey below. It should take about 15 minutes. Your responses, along with those of other teachers in your school and in the district, will be analyzed to help determine if the 4 x 4 block schedule enables you to teach more effectively. Please do not place your name on the survey sheet or the answer sheet. If you choose not to complete the survey, please return the form to the liaison. I will share the aggregate results with you when the research is completed. Thank you very much for taking the time to help me with my research.

PLEASE USE A PENCIL AND MARK ALL YOUR ANSWERS ON THE BUBBLE SHEET FOR ALL QUESTIONS.

-----------------------------------------------------------------------------------------------------------------------------------

PART 1: (Please bubble in only one answer.)

1. Including this year, how many years of experience have you had as a teacher in this school?
   A. 1 – 5 years
   B. 6 – 10 years
   C. 11 – 15 years
   D. 16 – 20 years
   E. More than 20 years

2. Including this year, how many years of experience have you had as a teacher?
   A. 1 – 5 years
   B. 6 – 10 years
   C. 11 – 15 years
   D. 16 – 20 years
   E. More than 20 years

3. Please mark your primary subject area.
   A. Language Arts/World Languages
   B. Related Arts/Life Skills
   C. Mathematics/Business
   D. Physical Education/Health
   E. Science/Social Studies

4. Please mark the grade level of most of the students you teach in all classes.
   A. 9
   B. 10
   C. 11
   D. 12

5. Gender
   A. Male
   B. Female
PART 2: The following questions relate to teacher work life issues. Using the scale below, please indicate the extent to which you agree or disagree with each statement.

STRONGLY DISAGREE  B  STRONGLY AGREE
A  C  D  E

6. I am personally recognized for a job well done.
7. Staff has opportunities to be involved in making building decisions.
8. I feel respected as a colleague by most staff members.
9. Administrators work hard to provide adequate resources for teachers.
10. This school makes an effort to reach out to the community.
11. Most staff members help out, anywhere, anytime—even though it might not be part of their official assignment.
12. Teachers in this building share a sense of common purpose.
13. I have some influence in determining the content of staff development programs.
14. I am proud to tell others I work for this district.
15. The building administrators’ behavior toward the staff is supportive and encouraging.

16. Teachers help maintain discipline in the entire school, not just their classroom.
17. Teachers have time to talk about teaching and learning.
18. In this school, teachers and administrators are in close agreement on school discipline policy.
19. It is a waste of time to give my opinion about decisions in this school.
20. There is a great deal of cooperative effort among staff members.
21. I coordinate the content of my courses with other teachers in my department.
22. I coordinate the content of my courses with other teachers in other departments.
23. I am encouraged to experiment with instructional methods in this school.
24. Staff development in this school permits me to acquire new knowledge and skills.
25. My job interferes with my life outside of school.

26. I feel I have opportunities to achieve what is meaningful to me in this school.
27. Most staff seem to really care about students.
28. I have a chance to get to know other teachers in this school.
29. At departmental meetings, we talk about student performance data and how to raise student achievement.
30. I visit other teachers' classrooms to observe their teaching.
31. I receive meaningful feedback on my performance from my peers.
32. My job frequently requires more work than I think should be expected of me.
33. I feel I am kept informed about what is going on in this school.
34. I feel I have opportunities to use my full abilities to achieve my professional goals.
35. Our school has appropriate authority to make its own decisions.
36. I have access to expertise in my subject area from within the district.
37. I have access to expertise in my subject area from outside the district.
38. Teachers new to this school are given a great deal of assistance and support.
39. I wouldn’t want to work in any other school.
40. In this school, teachers and administrators agree about school policies.
41. Staff regularly talks about ways to improve student performance.
42. Most staff here strive to increase student learning.
43. Parents are partners with the school in enhancing their child’s learning.
44. Most teachers are interested in new ideas.

**PART 3:** To what degree do you feel that your current schedule restricts or enhances the following for you?

![Restricts to Enhances Scale]

45. Providing the education you want for your students.
46. Having homework you assign completed and turned in.
47. Assisting students who have been absent or are behind.
48. Keeping passing times between classes orderly and calm.
49. Helping lower-achieving students to experience success.
50. Reducing the numbers of students late to class.
51. Having adequate time to prepare for teaching.
52. Helping students have positive feelings about their school experience.
53. Having formal meeting time to spend on curriculum, pedagogy, and assessment issues with other teachers.
54. Keeping the workload manageable.
55. Making the day less tiring and more sane.

56. Knowing individual students’ strengths and weaknesses.
57. Individualizing instruction.
58. Having sufficient and useful staff development to improve my teaching.
59. Being able to teach the content required by the district curriculum.
60. Using more alternative assessment approaches.
61. Having students who are focused and ready to learn.
62. Using classroom activities that require higher level thinking.
63. Providing students opportunities for enrichment and advanced study.
64. Getting high quality work from students.
65. Teaching students how to directly apply the concepts and processes to work/life or daily life.
66. Keeping class disruptions to a minimum.
67. Improving my morale.
68. Using a diversity of instructional delivery methods or styles.
69. Limiting disciplinary referrals.
70. Using teaching strategies that involve students in active and hands-on learning.
71. Reducing absences.
72. Reducing record keeping.
73. Accommodating the needs of special education students.

**PART 4: How frequently do you do each of the following?**

<table>
<thead>
<tr>
<th>NEVER</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
</table>

| 74. Conduct labs, hands-on activities or other student participation activities. |
| 75. Schedule field trips or community experiences. |
| 76. Use methods designed to appeal to a variety of learning experiences. |
| 77. Have students relate classroom content to their own experiences. |
| 78. Have students use classroom content for purposes other than remembering it. |
| 79. Use exhibitions, demonstrations or other non-traditional evaluation methods. |
| 80. Use cooperative groups or other small group activities. |
| 81. Use tests that require students to write essays. |
| 82. Have students fill out worksheets or study guides. |
| 83. Use the library or computers. |
| 84. Bring in guest speakers. |
| 85. Use lecture (including teacher directed discussion) more than half the class period. |
| 86. Team-teach. |
| 87. Have in depth discussions where students do most of the talking. |

88. Which answer best defines your feelings about block scheduling?
   (A) strongly non-support (B) non-supportive (C) neutral (D) support (E) strongly support

| STRONGLY DISAGREE | A | B | C | D | E | STRONGLY AGREE |
|-------------------|---|---|---|---|---|

89. I feel our current schedule has helped students get better grades.
90. My students have a deeper understanding of the subject matter with our current schedule.
91. Sufficient, useful staff development has been made available to assist my transition to the block schedule.
92. A greater number of my low-achieving and special education students are experiencing greater success under the block schedule.
93. The current schedule is better for our high-achieving students.
APPENDIX D

LETTER TO PROJECT DIRECTOR

REQUEST FOR PERMISSION TO USE SURVEYS

UNIVERSITY OF MINNESOTA
May 15, 1998

Ms. Carol Freeman  
Center for Applied Research and Educational Improvement  
University of Minnesota  
265-2 Peik Hall  
159 Pillsbury Drive S.E.  
Minneapolis, MN 55455-0208

Dear Ms. Freeman:

I am presently a graduate student at Seton Hall University completing my doctoral dissertation in Educational Administration. As part of my dissertation, I would like to request your written permission to utilize the test instruments in your study entitled, "Block Scheduling: A Vehicle for School Change." After considerable research on school climate as it effects extended periods of learning in the high schools, I feel your student and teacher instrument would be highly applicable to my study.

My dissertation will focus on block scheduling and specifically the effects of these extended periods of class time on student and teacher perceptions of the instructional and professional climate of a secondary school. I will examine the responses of teachers and students in the four comprehensive high schools in Jersey City, New Jersey.

Presently, I am the Executive Assistant to the State Superintendent of Schools. I was on the steering committee for implementation of block scheduling in our district three years ago. We are entering our third year of the 4 x 4 block. I will be happy to share my findings with you at the completion of my study. Thank you for your time and consideration.

Sincerely,

Joanne P. Kenny
APPENDIX E

LETTER FROM PROJECT DIRECTOR

PERMISSION TO USE SURVEYS
May 28, 1998

Joanne P. Kenny
Jersey City Public Schools
346 Claremont Ave
Jersey City, NJ - 7305

Dear Ms. Kenny:

I found the report on the first year of Copernican scheduling in Jersey City very interesting. I hope you will continue to share information. I will do the same.

I have enclosed some sample reports we have done for schools in our study.

You have my permission, as project director of the OERI study called "Blockscheduling: A Vehicle for School Change," to use all or parts of any of our three surveys (teacher, student, and parent) designed to help evaluate block schedules.

Also, if you need further assistance with the surveys, feel free to contact me.

Sincerely,

Carol Freeman
Project Director
Blockscheduling: A Vehicle for School Change
APPENDIX F

LETTER TO SUPERINTENDENT

REQUEST TO DISTRIBUTE SURVEYS
August 18, 1998

Dr. Richard A. DiPatri, State District Superintendent
Jersey City Public Schools
346 Claremont Ave.
Jersey City, NJ 07305

Dear Dr. DiPatri:

I am writing to request your permission to utilize the teachers and the students of the four comprehensive high schools, Dickinson, Ferris, Lincoln and Snyder, in my doctoral dissertation. My dissertation will focus on block scheduling and, specifically, the effects of these extended periods of class time on student and teacher perceptions of the instructional and professional climate of their respective high schools.

Between October 1 and October 30, 1998, each student and teacher participant will be asked to complete a survey which will take approximately 15 minutes. Approximately 80 teachers (20 in each school) and approximately 600 students (150 in each school) will be asked by a designated liaison to voluntarily complete the survey. The participants will be instructed to answer the survey anonymously. Teachers and students will be told if they do not wish to complete the survey, they can return the incomplete form to the liaison. In addition, no participant will know who is conducting the survey. If you grant your permission for this survey to be distributed, I will write to each high school principal and explain the procedures with a copy of your letter of permission.

The surveys were presented to the legal counsel of the Jersey City Board of Education, and I have enclosed copies for your perusal. They were reviewed by counsel and determined that the surveys were part of a bona fide research project surveying teacher and student interest in extended periods of learning; therefore even though many of the participants are under 18 years of age, no parental permission need be obtained. All aggregate results will be shared with you. Thank you for your time and consideration.

Sincerely,

Joanne P. Kenny
APPENDIX G

LETTER FROM SUPERINTENDENT

PERMISSION TO DISTRIBUTE SURVEYS
August 19, 1998

Joanne P. Kenny
61 Walnut Drive
Spring Lake Heights, New Jersey 07762

Dear Ms. Kenny:

I am approving your request to distribute your surveys on block scheduling to teachers and students at Dickinson, Ferris, Lincoln and Snyder High Schools.

As indicated in your letter of August 18, 1998, the surveys are part of the research for your doctoral dissertation. The surveys ask for voluntary and anonymous responses to questions on the interests of teachers and students regarding block scheduling. Since the surveys seek opinions on a school issue on an anonymous basis, they do not require parental consent for students’ participation.

Approval to distribute these surveys to the four high schools is conditioned on your assuming full responsibility for their distribution and collection. You must also make every reasonable effort to ensure that your surveys do not disrupt orderly operations at the high schools or interfere with the instructional programs.

I am pleased that you have selected a topic for your survey that is of interest to the administration of our high school system. Although this is not a requirement or condition, I hope that you will share the results of your survey with us, so that we might consider them in the implementation of block scheduling at our high schools.

Sincerely,

Richard A. DiPatri
State District Superintendent

RAD/md
APPENDIX H

LETTER

NOTIFICATION TO PRINCIPALS

DISTRIBUTION OF SURVEYS
Joanne Patrice Kenny

September 11, 1998

Mr. David Clauser, Principal, Lincoln High School
Mr. Robert Donato, Principal, Dickinson High School
Mr. Terence Matthews, Principal, Ferris High School
Mrs. Margaret Oliver, Principal, Snyder, High School

Dear Principal:

I am presently a graduate student at Seton Hall University completing my doctoral dissertation in Educational Administration. My dissertation will focus on block scheduling and, specifically, the effects of these extended periods of class time on student and teacher perceptions of the instructional and professional climate of a secondary school. I will examine the responses of teachers and students in the four comprehensive high schools in Jersey City.

Each student and teacher participant will be asked to complete a survey which will take approximately 15 minutes. Approximately 80 teachers (20 in each school) and approximately 600 students (150 in each school) will be asked by a designated liaison to voluntarily complete the survey. The participants will be instructed to answer the survey anonymously. Teachers and students will be told if they do not wish to complete the survey, they can return the incomplete form to the liaison. In addition, no participant will know who is conducting the survey and anonymity will be guaranteed. I have enclosed a letter from Dr. Richard A. DiPatri, Superintendent of Schools, permitting me to conduct the survey between October 1 and October 30, 1998. The liaison will be contacting you shortly with the procedures for distribution of the survey. Thank you for your time and consideration.

Sincerely,

Joanne P. Kenny