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EVALUATING THE IMPACT OF BLOCK SCHEDULING

By
John Joseph Hourani

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree
of
The Graduate School
at
Rowan University
May 1999

Approved by _____
Professor

Date Approved May 1999

Abstract

John Joseph Hourani

Evaluating the Impact of Block Scheduling
1999

Dr. Ronald L. Capasso
School Administration

The purpose of this study was to evaluate and describe the effectiveness of a 4x4 semester block schedule with respect to academic achievement, discipline, attendance and the school climate of Penns Grove High School. A longitudinal trend study design was utilized to compare statistics from the school's first two years under the block schedule to the school's final two years of the traditional schedule. Such statistics include the frequency of students obtaining A's, F's, and honor roll status, as well as monthly attendance rates, and discipline referral counts. Additionally, a modified action research design is used to examine the new schedule's effects on the school climate.

This study found the block schedule to have no effect on the number of students receiving A's, honor roll lists, or attendance rates. However, the number of students receiving F's and discipline referral counts revealed noteworthy reductions which positively correlate to the implementation of the block schedule. Additionally, morale, motivation, and teaching styles were found to improve due to the implementation of the block schedule.

Mini-Abstract

John Joseph Hourani

Evaluating the Impact of Block Scheduling
1999

Dr. Ronald L. Capasso
School Administration

The purpose of this study was to discern the effectiveness of a 4x4 block schedule with respect to academic achievement, discipline, attendance, and the school climate of Penns Grove High School. Findings include improvement in failure rates, discipline problems, and school climate which positively correlate to the block schedule's implementation.

Acknowledgments

I am sincerely grateful to all those who contributed to this project. Generally, I would like to acknowledge the students, staff, and administration of Penns Grove High School for allowing me the opportunity to grow as an administrator in their school. I am also indebted to my field mentors, Jean Spinelli, Andres Cardona, and Paul Rufino who granted me their valuable expertise throughout the internship in which this document was created. Additionally, I would like to thank my university mentor, Dr. Ronald L. Capasso, for serving as a positive role model and valuable source of knowledge. Finally, I would like to express my infinite gratitude to Wendy, my loving wife, for providing me with the time to work on this endeavor as she nurtured our infant “Jake” and our toddler “Jessie”.

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Chapter 1

Introduction

Focus of the Study

This study focuses on Penns Grove High School's change to block scheduling. Penns Grove High School changed from a traditional seven period schedule to a 4x4 semester block schedule in September of 1997. The literature reviewed (see Chapter 2) suggests that there are many positive outcomes associated with block schedules. Whether or not these outcomes were experienced by Penns Grove High School is discerned and manifested in this document.

Purpose of the Study

Prior to this study, little had been done at Penns Grove High School in the way of a formative or summative evaluation of the new schedule's success. This study's purpose was to evaluate and describe the effectiveness of block scheduling on student's academic achievement, discipline, attendance and attitude, using a longitudinal trend study design. The results presented in Chapter 4 and the conclusions drawn in Chapter 5 should prove essential in validating or refuting any premature, informal conclusions concerning the success of Penns Grove High School's block schedule. Using this information, Penns Grove High School's administration can better reflect and improve upon future scheduling procedures. In addition, this study has served the purpose of providing the intern with valuable experience in summative and formative evaluation procedures.

Definitions

"Traditional school schedules" are those that offer students seven or more classes per day. These classes meet everyday for 35 to 60 minutes a session. Students in these

schedules usually remain in the same major courses throughout the entire school year.

“Block, Copernican, or intensive” schedules are school schedules where students stay in the same class for 70 or more minutes at a time. Consequently, students are scheduled for five or fewer classes each day.

“4x4 semester block schedules” offer students four classes per day. Because students are only scheduled for four classes, the duration of each daily class period may be extended to twice that of most traditional periods. It is called a semester block schedule because students complete these four courses in half of the school year — a semester. During the second half of the school year, students begin four new classes which are completed by the end of the school year.

Limitations of the Study

This study will be confined to all high school students in the Penns Grove-Carneys Point School district during the current year (1998-99) and previous four years. These students range from grades nine through twelve. This evaluation of block scheduling will not use standardized test scores as an indicator of student success. Although such test scores may be good indicators of student performance in the future, at this point they would reveal the product of students who underwent two years of traditional scheduling and one year of block scheduling.

This study concentrates on indicators that can be isolated to time frames when block scheduling was implemented. Such indicators include student attendance, honor roll, failures, grades, and discipline referrals. Additionally, students, teachers, and administrators who have experienced both types of schedules are surveyed and interviewed to discern how the schedule has effected the school climate. There has been no effort to generalize the results to other schools or school districts. Therefore, the results of this study should only be used to interpret and understand the 4x4 block schedule's affect on Penns Grove High School.

Setting of the Study

The Penns Grove-Carneys Point Regional School District, located in Salem County, is comprised of the communities of Penns Grove and Carneys Point. They encompass an area of 19 square miles situated in the northwestern part of Salem County near the juncture of US Route 130, Interstate 295, the New Jersey Turnpike, and the Delaware Memorial Bridge.

The borough of Penns Grove is primarily residential and occupies approximately one square mile of land. Housing is comprised mostly of single family dwellings, and three apartment complexes (Penns Grove Gardens, Penn Village, and Silver Run) that are considered to be low-income housing projects.

The township of Carneys Point, approximately 18 square miles, includes both residential and farming areas. Single family dwellings as well as three apartment complexes (River's Bend, Sandy Ridge, and Twin Bridges) comprise the housing.

Politically, the communities of Penns Grove and Carneys Point maintain separate municipal governments. Even though they function as separate municipalities, Penns Grove and Carneys Point share one post office, use the same zip code, have one public library, and are part of a consolidated school district.

The borough of Penns Grove is governed by six councilmen, who are elected for three-year terms, and a mayor, who is elected for a four-year term. The township of Carneys Point is governed by five committeemen, who are elected for three-year terms. The mayor is selected from among the committee's five members and serves for a one-year period.

In the past, much of the area of Carneys Point was predominantly a rural region. As a result, much of Salem County's early settlers depended upon farming to meet most of their families' needs. Presently only a small number of resident farmers depend upon the resources of the land's richness.

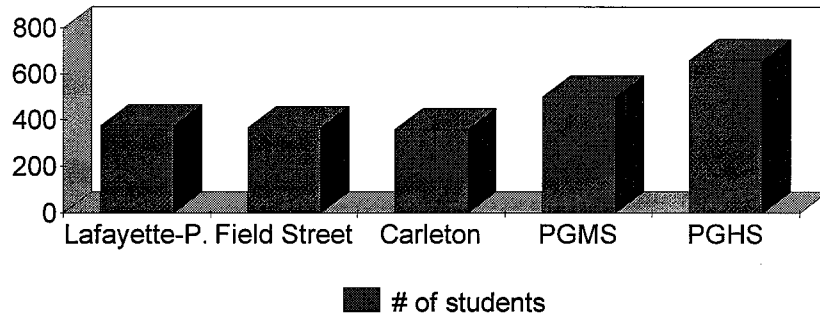
The industries of E. I. Dupont, Linde Industrial Gasses, Frangible Disks, Budd Chemical, Delkote Industries, Guyon Piping, and Blue Diamond Meat Company now employ many of the twin communities' residents. However, over the past decade and a half, economic growth and job opportunities have declined in both communities. Consequently, the Penns Grove-Carneys Point Regional School District has a low socioeconomic standing and is classified as a B district factor group. District factor groups range from A to J where A is the lowest.

The Penns Grove-Carneys Point board of education consists of nine elected board members. Five of these board members are from Carneys Point and four members are from Penns Grove. Each member is elected for a three-year term.

The Penns Grove-Carneys Point Regional School District's central administrative office, located on 113 West Harmony Street in Penns Grove, houses five administrators who are responsible for carrying out board policies and overseeing the services and operations of the entire school district. The administrative positions referred to above are the superintendent, assistant superintendent, board secretary/ director of finance, supervisor of federal programs, and supervisor of special services and related programs.

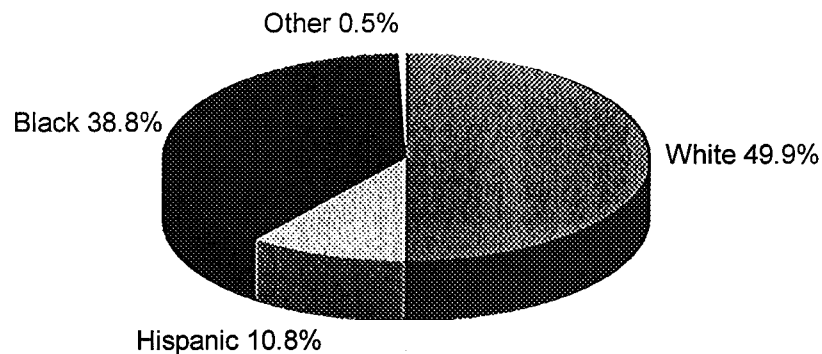
The Penns Grove-Carneys Point Regional School District consists of five schools. The Paul W. Carlton Elementary School (grades 3-4) and the Penns Grove Middle School are located in Penns Grove. The elementary schools of Lafayette-Pershing (grades K-1), and Field Street (grades 2-3) are located in Carneys Point, as is the Penns Grove High School. Currently the district provides education for a total student population of 2,263. Of this number, 1,102 are educated in the three elementary schools, 502 in the Middle School (grades 6-8) and 660 in the High School (grades 9-12). This information is illustrated in Chart 1.

Chart 1 - Student Population by School



The students of the Penns Grove-Carneys Point Regional School District represent primarily three ethnic backgrounds. Rounding to the nearest tenth, 49.9% are white, 38.8% are African American, 10.8% are Hispanic and less than one percent represent other backgrounds. This data is represented in Chart 2.

Chart 2 - District Ethnic Backgrounds

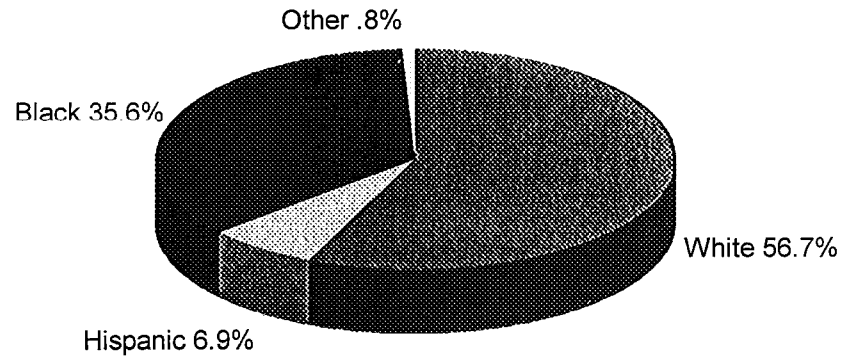


The High School, located at 334 Harding Highway in Carneys Point, is the primary setting of this study. The high school is administered by a building principal, and two assistant principals. Together these administrators supervise a staff of 64 teachers 1 school nurse, 8 aides, 5 secretaries, 7 custodians, and 15 cafeteria workers. In comparison to the other staffs within the district, this staff is the largest.

Students in the high school are 56.7% white, 35.6% African American, 6.8% Hispanic and .8% are from other backgrounds. This information is illustrated in Chart 3.

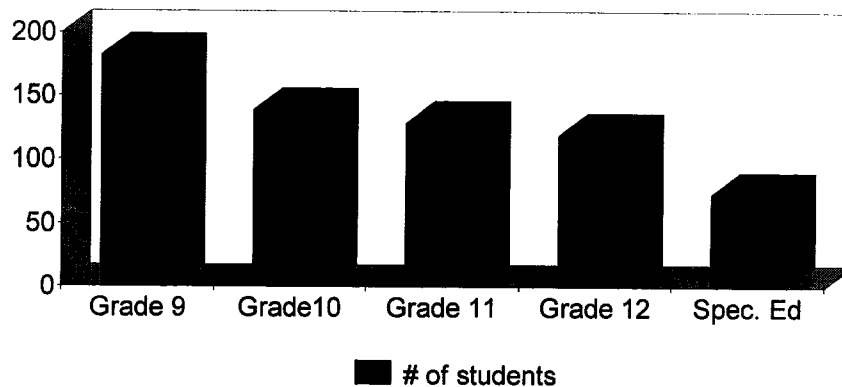
The discrepancy between the district and high school's ethnic backgrounds may be due to the fact that the high school is a receiving school for Oldmans Township which is predominantly white.

Chart 3 - H.S. Ethnic Backgrounds



As for the size of the high school's student population, it is a group one school. This scale ranges from one to four where one has the least and four has the greatest population. The relationship between the number of students in each grade level at the high school has an inverse relationship to the grade level itself. Of the high school's 660 students, 28.3% are in grade nine, 21.6% are in grade ten, 20% are in grade eleven, and 18.6% are in grade twelve. The remaining percentage of students in the high school, 11.4%, are located in the special education program and move through the high school per their IEP. This information is illustrated in Chart 4.

Chart 4 - H.S. Population Breakdown



The High School's statistics as reported on the 1996-97 New Jersey School Report Card are aligned with state averages in the areas of student attendance, average class size, student/faculty ratios and faculty and student attendance rates. However, two areas are not in sync with state averages — the student-mobility rate and the student-to-administrator ratio.

The student-mobility rate refers to the percent of students who entered or left the school during the school year. This figure is at 18.0% while the state's average is 13.9%.

The student-to-administrator ratio refers to the number of students per administrator at the school. Penns Grove High School's ratio is 215 to 1 while the state average is 176 to 1. This discrepancy may exist as a result of the district's 1993 decision to terminate all department chair positions at Penns Grove High School. Now, the three high school administrators each chair three to four departments in addition to their other responsibilities.

Significance of the Study

During the 1990's there has been an increasing number of high schools employing a variety of block scheduling plans, providing teachers and students with longer "blocks" of instructional time and fewer daily classes. The intent has been to permit teachers and students the time to become immersed in subject matter. How did block scheduling

affect the academic progress of Penns Grove High School students? How did block scheduling affect nonacademic indicators of student performance? The answers to such questions are significant for Penns Grove High School administrators and Penns Grove Carneys Point school board members who will be determining the fate of Penns Grove High School's future.

There are many theories of organizational change. Most of them include an evaluation and a rebalancing component. This report provides PGHS with results and conclusions which can be used to evaluate and rebalance its change to block scheduling.

Organization of the Study

Chapter 2 of this study investigates the existing body of research and theory pertaining to block schedules. It contains small and large scale studies of both schools who have internally evaluated their own initiatives and those consisting of external evaluations of multiple districts. Addressed in this literature are issues of discipline, attendance, student achievement, dropout rates, retention, school climate and course content in the context of block scheduling.

Chapter 3 addresses the research design of this study. It includes a description of: the development and design of the research instruments used in this study, the data collection approach, and the data analysis plan. Here, the type of evidence that will reveal the block schedule's impact on Penns Grove High School is illustrated.

Chapter 4 addresses the data gathered through following the design described in chapter three. Here, the data is presented and described.

Chapter 5 manifests the study's major conclusions and what they imply. Furthermore, it explains how these conclusions should impact Penns Grove High School. It also describes how this study has affected the intern's leadership development. Finally this chapter will address the need for further study in scheduling matters at Penns Grove High School.

Chapter 2

Review of Literature

Although block scheduling has been in use for many years, it has recently surfaced as the latest trend to restructure and improve secondary education. Block schedules, often referred to as Copernican schedules and intensive schedules, offer students a reduced number of daily courses in extended doses. Because the total class time may be shortened and passing time is reduced, students may be able to enroll in more courses annually, despite a smaller daily schedule.

The purpose of this study is to evaluate and describe the effectiveness of block scheduling on student achievement, discipline, attendance and attitude, using a longitudinal trend study design. This study also serves the purpose of providing the intern with valuable experience in summative and formative evaluation procedures. This project provides the Penns Grove High School administration with an assessment of student performance during the first year and a half of block scheduling so they can reflect and improve upon scheduling procedures in the future.

The literature reviewed indicates that block schedules have positive effects on student performance in the categories of student discipline, attitude, and grades. However, reports addressing student performance on standardized tests contradict each other. Also included in the reviewed literature are reports attributing improved attendance, lower dropout rates, changes in teaching styles and content coverage to block schedules.

Traditionally, school schedules have been based on Carnegie Units. The Carnegie Unit for schools equates class seat-time to completion or mastery of a subject. Its roots are in the industrial standardization reforms of the early twentieth century, which were led

by people such as Frederick Winslow Taylor. As a result, a factory-like system of education was constructed. Students travel to seven or eight classes per day for 180 days. This system has remained in place for most of the twentieth century (Marshak, 1997).

Joseph M. Carroll named his block scheduling initiative the Copernican Plan, in reference to the sixteenth century scholar, Nicolaus Copernicus. Copernicus challenged tradition and claimed the sun was the center of the universe. Block style schedules challenge traditional schedules and come in multiple forms.

Types of Block Schedules

Carroll's schedule may be referred to as a trimester form of block scheduling. Trimester formats split the school year into three parts and allow students to take two to three major courses per trimester each of which meets for approximately two hours daily. Additional supplemental classes, electives, and seminars can be offered in the remaining portion of the day.

Another popular form of block scheduling is the alternating block schedule. This format of block scheduling typically has students attend four classes a day for 80 to 100 minutes each and four different classes the next day.

The type of block schedule Penns Grove High School implemented is the 4 x 4 semester plan. Here, students take four 90 minute classes daily for the first semester and a different four classes the second semester.

Also discussed in the literature reviewed, are quarter block schedules where students take two courses daily and complete them in one quarter of the school year which allows a total of eight courses. The ways block schedules can be formatted are only limited to a school district's creativity and needs. For an extensive treatise on multiple formats of block schedules the reader is referred to Canady and Rettig's (1995) book, Block Scheduling: A Catalyst for Change in High Schools.

Student Discipline

Block schedules are said to have many effects on schools. One of those effects comes in the form of student discipline. Canady and Rettig (1995) believe that block schedules alleviate many of the conditions in traditional schedules that increase disruptive behavior. First, they claim that a large percentage of negative behavior occurs during class changes when students and teachers are in transition. Block schedules limit such transitions.

Next, they state that teachers in traditional schedules interact with 100 to 180 students daily which makes developing close relationships with students difficult. This impacts the teacher's ability to mitigate potentially explosive situations. Block schedules decrease the number of students a teacher has and increases the likelihood of improved student-teacher relations.

Canady and Rettig also believe block schedules reduce the teacher's willingness to dismiss a student from class. Because traditional periods are only 40 to 60 minutes, teachers feel a greater urgency to eliminate disorderly students in order to complete the lesson within the limited time frame. Since block schedules expand the time frames for lessons, teachers report a greater willingness to spend more time to discuss the issue with the student in question (Canady & Rettig, 1995).

The reviewed literature supports Canady and Rettig's (1995) assertions about student discipline problems. Eineder and Bishop (1997) studied Philo High School's 4x4 block schedule in Southeastern Ohio. Among other positive outcomes, they claim a 40% decrease in fights, a reduction in disciplinary referrals, and improved student-teacher relationships.

Khazzaka (1997) studied six block scheduled high schools located in the same region of the United States. He reports, "The block schedule reduces traffic in school buildings by 40% , resulting in fewer disciplinary infractions" (p.89). He found the

average number of violent infractions in the block scheduled schools decreased by 45.5%. Furthermore, the annual average number of office referrals for class disruption and insubordination dropped by 57%. "One large school in the study reported the virtual disappearance of violent behavior: from two to three fights a week to two fights during the entire semester" (p. 92).

Carroll (1994) studied high schools using block schedules in the United States and Canada. He reported reduced suspension rates in four of five schools. He attributed the improved student behavior under block schedules to improved student/teacher relationships. He goes on to state that the improved relationships are the result of the longer class periods and decreased stress on students dealing with fewer classes per day.

Buckman, King, and Ryan (1995) examined two Orlando, Florida, high schools utilizing block schedules. They reported dramatic improvements in both suspensions and disciplinary infractions.

The American School Board Journal's straw poll reiterated, once again, that with students changing classes less often and having more time to get settled and focus in class, discipline problems are down. This publication also quotes a Pennsylvania superintendent in his third year of block scheduling claiming that discipline referrals have decreased each year since they moved to the new schedule ("You say", 1998).

Fitzpatrick and Mowers (1997) wrote about Beloit Memorial High School's move to block scheduling in Wisconsin. They claim assistant-principal referrals were reduced 23%. "Serious violations of the disciplinary code were drastically reduced [and] fighting and class rejections were cut in half" (p.56).

Reid (1995) interviewed principals at five schools in British Columbia utilizing block scheduling and found that all five reported improved student behavior. Summerfeld (1996) explains that Evergreen High School in Vancouver, Washington reported decreases in discipline problems under the block schedule. Day, Ivanov, & Binkley

(1996) quote administrators from Maplewood High School in Tennessee saying, "Discipline problems have diminished as a result of fewer class changes per school day" (p. 27). The literature reviewed was unanimous on the positive effects block schedules have on student discipline.

School Climate

The many reports of improved student discipline can be easily interpreted as beneficial to disruptive students. But how do block schedules affect students who were not disruptive to begin with? Does changing from a traditional schedule to a block schedule affect the general school climate? If teacher and student willingness to stick with block scheduling is an indicator, block scheduling has had a positive effect on the climate of many schools.

Cooper's (1996) study of Morgantown High School, West Virginia indicates overwhelmingly positive support for its block scheduling initiative. An external study showed 92% of the students agreed that having ninety-minute class periods had a positive impact on their learning. Faculty interviews also showed a high level of acceptance. Both "teachers and students agree that returning to the traditional 50-minute schedule is unthinkable" (p.31).

Day et al. (1996) found that the faculty preferred the block schedule to the traditional one. "The vast majority of faculty at Maplewood report that they would not go back to the traditional schedule" (p.27). The students agree. In a survey conducted in the 1995-1996 school year, three-quarters of the students reported liking the block schedule better than the traditional schedule and favored continuing the program.

Queen, Algozzine, and Eaddy (1997) studied three North Carolina schools in Lincoln County. Overall, teachers strongly supported the concept of continuing with the block scheduling model. In fact, 70% to 80% of teachers, students, and parents believed the program was successful and had a strong desire for block scheduling to continue.

Buckman et al. (1995) reported that teachers liked having more time to give students individual assistance. Other aspects of the block schedule they liked included more opportunities to get to know the students personally, time for more creative and meaningful student work and the ability to structure a full lesson — to introduce a topic or concept, discuss it, and bring it to closure.

George, Buis, Robinette, and Chai (1995) investigated two school systems in East Tennessee one of which used block scheduling. This study indicated that teachers definitely preferred the four-period block model. In fact, 86.7% of the teachers in the school using the block schedule considered it to be the most effective teaching schedule while only 26.3% of the traditionally scheduled teachers thought they were using the most effective schedule.

Taylor (1996) writes about High Technology High School's block schedule in Monmouth County, New Jersey. He describes the block concept as being very effective in improving the quality of learning and creating a more positive classroom environment. He says, "Based on a poll, 87% of the students feel that longer periods allow for a better classroom atmosphere" (p.22).

Kramer (1997) states that both parents and students have been overwhelmingly positive about block scheduling at schools. He illustrates the results of Steven's (1976) survey conducted on students who transferred from traditionally scheduled schools into block scheduling schools and students who transferred out of block schools to traditionally scheduled schools. Referring to these results he says, "both the degree of satisfaction shown by the semestered students, and the fact that even the students in the non-semestered program preferred the semestered program are striking" (Kramer, 1997, p.22).

Fitzpatrick and Mowers (1997) report of reduced stress for students and teachers and a more personalized school environment. They said, "The pace and activity within

the school seemed much calmer and controlled [and] the morale of staff members, students and parents skyrocketed” (p.51).

Eineder and Bishop’s (1997) study of Philo High School revealed more than 80% of students and 95% of teachers stated they knew each other better under the block schedule. Survey questions about scheduling preference found that 97% of their teachers and 77% of their students preferred block scheduling. Student reasons for this included better teacher relationships and more teacher help.

Student Achievement

At the root of many school initiatives is the intent to affect student learning. Block scheduling initiatives are no different. Both Carroll (1995) and Canady and Rettig (1995) assert that teachers cannot deal meaningfully with every student every day under traditional schedules. Similarly, students may have difficulty dealing meaningfully with seven to eight classes a day. Including homeroom and lunch, a traditionally scheduled student may be in nine locations pursuing nine different activities in a six and a half hour day which may also include changing clothes twice and showering once at gym. Block scheduling advocates believe this creates a hectic, impersonal, and inefficient instructional environment. “The Carnegie-based schedule prevents teachers from teaching well and students from learning well” (Carroll, 1995,p.27). Ryan (1995) from La Salle University in Philadelphia, Pennsylvania agrees with Carroll writing, “Fewer and longer classes accommodate preferred learning styles and enhance academic performance” (p.62).

A general consensus among block scheduling supporters is that by giving students fewer classes to prepare for, they will be able to concentrate more thoroughly on those that they have. In Wilson’s (1995) study of Hope High School in Arkansas, students reported less stress because they were preparing for fewer classes.

Block scheduling advocates also put stake in the idea that longer blocks of time give students and teachers a better chance to explore material in more depth without losing the continuity from day to day. Taylor (1996) claims that teachers are in more control with block schedules because they can teach without worrying about the bell ringing which, in turn, provides a more focused atmosphere for students as they follow the instructor's plans without interruption.

Indicators for the academic success of block schedules come in two forms—student grades and standardized evaluation. When student grades have been used as indicators the results have been excessively positive. Many reports have been published attributing decreasing failure rates, increasing grade-point averages, increases in honor rolls, and increases in the numbers of students receiving A's to block scheduling.

Khazzaka (1997) states "Students earned higher grades under the block schedule than they did under the traditional schedule" (p.91). His study revealed the percentage of students who earned a 3.5 GPA or higher increased from 7% to 16% and the number of honor roll students went up by a similar percentage. Additionally, the average GPA rose from 1.91 to 2.46.

Eineder and Bishop's (1997) research found that under block scheduling students achieved a 24 percent increase in the number of A's and a 15 percent decrease in the number of F's. "Improvement in academic performance was nearly universal" (p. 47). Using statistical measures, they found significant improvement in the cumulative grade point average and frequency of honor roll attainment.

Kramer (1997) writes, "Student grades improve at most block scheduled schools" (p. 26). He found that 11 of 13 block-scheduled schools responding to a survey in Auburn, Alabama, reported improved grades and the other two indicated no change. Additionally, he cites four other studies that support this finding.

Both of the Orlando, Florida, schools in Buckman, King, and Ryan's (1995) study achieved higher grades after implementing block scheduling. They state, "With the extended time blocks, students have time to master the content" (p. 12). Each school ironically reported that 54% of its students raised their GPA's under block scheduling.

Among other academic factors, Carroll (1995) compared final grades from the year before implementation to the year after implementation of the block schedules with curriculum and grading scales remaining the same. The seven schools' increases ranged from 0% to 46% with a median increase of 18%. "Conservatively stated, the odds are thousands to one that students by chance will perform better academically and conduct themselves better under a Copernican structure than they will under a traditional Carnegie structure" (p. 112).

Munroe (1989) conducted a study of block scheduling at Amphitheater High School in Tucson, Arizona. Student achievement was measured by comparing grade point averages and the number of failed classes under the block program with the same figures from those of the previous year in the traditional setting. The block program students had higher grade point averages and failed 75% fewer classes than they had the year before.

Hottenstein (1997) conducted a six year study of Hatboro Horsham High School in Horsham, Pennsylvania, using the first two years of the study (pre-block scheduling) as base line data. The increase in students achieving A's as final grades in the block scheduling years range from 2.5% to 7.5% with the median increase of 3.5%. The same study showed the number of students earning F's as final grades remaining virtually the same. "Grades are up [and] more students are on the honor roll" (Strock & Hottenstein, 1994, p.31).

Schoenstein (1995) reports of an extensive evaluation of Wasson High School's move to block scheduling in Colorado Springs, Colorado. The report compared data from one year before block scheduling to the four years since its implementation. Among

other statistics the report shows a 6.7% increase in students on the honor roll and a 9.2% decrease in the failure rate.

Ryan (1996) quotes the principal at Cardinal Dougherty High School in Philadelphia, Pennsylvania saying, "Academic failures have decreased and more students are achieving honors" (p.62). This principal attributes this success to the additional time in each class which permits teachers to address various learning styles and to personalize material for each learner.

Spencer (1994) reports on Benjamin Russell High School's assessment of block scheduling in Alexander City, Alabama. Four classes of ninth graders were chosen for the semester blocked treatments. Analysis of covariance was used to compensate for any initial inequalities between the groups. This study found that three of the four classes had no difference in performance when controlled for pre-existing differences. The remaining class achieved greater academic success under the block schedule. Final grades were used as the measurement tool in this study.

After two years of block scheduling, the principal of Beloit Memorial High School in Wisconsin reports of improved academic performance. "Our percentage of A's increased, while our percentage of F's decreased. Consequently, our honor roll numbers and our overall class grade point averages increased" (Fittspatrick & Mowers, 1997, p.55).

The superintendent and principal of Williams High School in Williams, Arizona, claim block scheduling significantly reduced the school's failure rates from 29% to 9% ("Block Scheduling", 1996). Summerfield (1996) realized improved grade point averages and Day et al. (1996) reduced failure rates since moving to their block schedules.

Other studies have examined student achievement using standardized tests such as end of course exams, state proficiency tests, Advance Placement tests, and college entrance exams as indicators. The results of such reports do not agree with each other.

Some results were interpreted as positive, some reported block scheduling had no affect, and others claimed it caused a decrease in standardized test scores.

Schoenstein (1995) claims an 11% increase in students scoring “four”s and “five”s on Advanced Placement examinations for Roy J. Wasson High School. The same school has suffered a 30 point decrease in Verbal and an 11 point decrease in Math SAT scores. ACT scores have remained virtually unchanged.

In Averett’s (1994) study, 27 different schools in North Carolina switched to semester block scheduling. Standardized end-of-course tests were given in five subject areas. The average change in final test scores was small. In sum, the data indicated that switching to a semester block schedule had either no effect or a slightly positive effect. Because students in the traditional schedule received from 15 to 30 hours more instruction per course, Averett’s results reflect favorably on block scheduling. Meadows (1995) conducted a similar study of four schools in Frederick County, Maryland, and had the same results.

Scroth (1995) used the Texas Assessment of Academic Skills (TAAS) to compare two Texas middle schools. The experimental school used an alternating block schedule. TAAS scores from 1994 and 1995 showed no significant differences between the schools. The TAAS practice test was used for a pretest and posttest. Here, the traditionally scheduled schools gained eight more points on the posttest than did the experimental group.

Guskey (1995) studied Governor Thomas Johnson High School in Frederick, Maryland, and reported that student performance remained virtually unchanged on the county summary tests. Because students increased their course load, the results of the county summary tests may support block scheduling. The distribution of grades at this school also remained much the same.

Cooper's (1966) report included a five year summary of standardized test results. Here, the three years of data immediately preceding the change to block scheduling were compared to the first two years of block scheduling. ACT results, which were already at or above state and national averages, remained steady. The Comprehensive Test of Basic Skills (CTBS) results showed no change for the first year after the block but showed "a significant upswing" during the second year (p.31). The AP Chemistry scores have also held steady. She concludes her report saying, "clearly block scheduling has not had any negative effects on our students' ability to do well on outside evaluation instruments" (p31).

Bateson (1990) studied science achievement in British Columbia's schools and reported negative results. Bateson used the results of a test administered in 1986 to over 30,000 tenth graders in British Colombian schools. Traditionally scheduled students scored significantly better than block scheduled schools in 6 of 6 areas tested and in all 120 test questions.

Marshall, Taylor, Bateson, and Brigden (1995) replicated these results using British Columbia's Mathematics and Science Assessment of 1995. Of the 24,500 students, the all-year students outperformed block students on 74 of 80 items. It should be noted that of the students tested in both of the studies above, approximately 66% were in traditional schedules, 27% in semester blocks, and 7% were in quarter blocks.

Gore (1996) used the 1995 Provincial Exam results to study the British Colombian schools. Traditionally scheduled students once again scored better than block scheduled students. A significant difference in this study and Bateson's is that the majority of the over 18,000 students tested were enrolled in semester block schedules. This study went on to compare students' school grades with their provincial exam results. In all cases, the school grades were higher than the test grades. However, the block scheduled students had a larger differential than the traditionally scheduled students.

Raphael, Wahlstrom, and McLean (1986) compared the performance of block scheduled students with traditionally scheduled students in grade 12 and 13 in the Second International Mathematics Study in Ontario. Achievement data were collected from a probability sample of 250 classes of which 94 were semester block scheduled and the remainder traditionally scheduled. Traditionally scheduled students significantly outperformed block scheduled students.

Attendance

Block scheduled schools also report increases in attendance rates. Students appear to realize that missing one block scheduled day of classes is the equivalent to missing two days of traditionally scheduled classes. In Reid, Hierck and Verigin's (1994) study, students consistently stated they had trouble recovering from absences in block scheduled schools.

Reports that addressed the effects of block scheduling on student attendance follow. Day et al. (1996) explain that daily attendance increased because students realized the importance of frequent attendance in semester-long courses. Khazzaka (1997) claims that the daily attendance figure rose from 75% to 88.5% under the block schedule. Buckman et. al. (1995) discovered that both the schools in their study reported a 2% increase in daily attendance. Carroll (1995) reported that block scheduling had a positive impact on attendance, with four schools showing improved attendance, two showing declines and one showing no change. Improved attendance was reported in Munroe's (1989) study. Schoenstein (1995) reports a 4.4% increase in the attendance rate and Hottenstein (1997) found little to no increase in attendance rates.

Dropout Rates

In addition to the positive affects block schedules may have on student attendance, some schools claim their new schedule improved their dropout rates. Block schedules may offer students who fail a class the opportunity to retake it the next semester and catch

up to their classmates. The opportunity to retake failed classes was one reason students gave for preferring block scheduled classes to traditional ones in Stevens (1976) study. This may be an important factor in reducing dropout rates.

Carroll (1994) states “the most significant improvement occurred in the area of dropout rates” (p.110). Six of seven schools in his study reported reductions in dropout rates, ranging from 17% to 63%. Three of these six high schools previously had serious retention problems, losing from 27% to more than 50% of their students before graduation. The dropout rates for these schools were reduced by 63%, 58% and 36% after moving to block schedules. Carroll attributes the reductions in dropout rates to improved relationships between teachers and students and more manageable workloads for both.

Hottenstein (1998) also reports of reduction in dropout statistics. Each of the four block scheduled years in his report was lower than the three years of baseline data collected before block scheduling. Reductions in dropouts ranged from 18% to 50% with the median reduction at 25%.

Eineder and Bishop’s (1997) study reports a 13% decrease in dropout rates after changing to block scheduling. Additionally, Munroe’s (1989) and Summerfeld’s (1996) studies both speak of reduced dropout rates resulting from implementing block scheduling.

Course Content

Some evidence seems to indicate that under block schedules, teachers cover less material but in more depth. Coupled with reports of teachers in block schedules changing to more participatory teaching processes, some may conclude that such processes lend themselves to greater depth and less breadth. Also affecting breadth of study, may be decreases in total class time. Many schools offered students seven courses annually prior to block scheduling and now offer them eight courses under block scheduling.

Cooper (1996) reports of a 12.5% loss in instructional time. The 12.5 percent shortfall has had an impact on classroom content. "It is not possible to cover all the material taught under our previous schedule. But what we teach is taught better [and] retained better" (p.30).

Eineder and Bishop's (1997) survey revealed more frequent participation in activities and projects. The most popular teacher reason for preferring block scheduling included more variety in activities and more in-depth coverage of subjects, and better retention of material/grades.

Day et al. (1996) claim they cannot cover as much material in the block schedule due to the loss of actual clock hours. They do not show concern over this fact because they believe the quality of instruction is better than was possible with the traditional schedule. "The quality and continuity of instruction have improved through the longer period. Teachers are using more group learning, student presentation and hands on learning techniques" (p. 27).

Queen et al. (1997) report teachers at the three schools rated the overall effectiveness of the block design highly. However, the effectiveness of block scheduling with respect to the teacher's ability to complete a course was different in all three schools. Only one school showed a high degree of confidence in their ability to complete their courses. This may have been the result of teachers spending 70% of their instructional time engaging students interactively.

Wilson (1995) writes about Hope High School's move to block scheduling in southwest Arkansas. She explains that students learn more in a personalized classroom environment because teachers know their strengths and needs better. "Teachers are better able to offer more in-depth coverage of subject matters" (p. 64).

Retention of Knowledge

Some critics of block schedules believe students will not retain information needed in sequential classes. This fear comes from the possibility of a student in a 4x4 semester block schedule finishing a course in the fall of one semester and not taking the sequel course until the spring of the next school year. One study was found addressing this topic.

Smythe, Stennett and Rachar (1974) conducted a three-year mathematical study which began in 1992 by testing 214, ninth grade Ontario students at the end of their freshmen year. Students in first semester classes, second semester classes and ten-month classes scored relatively the same. Each group was given the same test at the beginning of their next math class. Here, the students who didn't begin their next class until the spring semester performed lower than the other groups. When tested at the end of their tenth grade year all performed near equally again. Therefore, when given a semester and a summer off, more retention is lost than just a semester or just a summer, but this information was quickly recovered during the subsequent class.

Summary

There appears to be many positive outcomes associated with block schedules. This study discerns if the outcomes reported in the literature reviewed were experienced at Penns Grove High School (PGHS). Did PGHS's discipline, school climate, student grades, and attendance rates improve? Did block scheduling affect how and how much teachers taught? The next chapter of this study will present a design directed at answering these questions.

Because PGHS is in its second year of block scheduling, data on HSPT, SAT, and AP exams will reflect the achievement of students who have experienced a combination of block and traditional scheduling. Because these results can not be isolated to either

type of schedule and ninth and tenth grade tests will not be administered until the conclusion of this study, standardized test scores are not part of this study's focus.

Chapter 3

Design of the Study

General Description of the Research Design

To discern the affects of the recently implemented 4 x 4 semester block schedule on Penns Grove High School, an action research design was utilized. Although a substantial amount of the data is quantifiable, this study remains descriptive and qualitative in nature. A longitudinal trend study design facilitated the interpretation of quantifiable data.

This study set out to answer the following research questions:

1. How did the implementation of block scheduling affect the academic progress of Penns Grove High School students?
 - a. How did the block schedule affect the number of students receiving one or more failing grades?
 - b. How did the block schedule affect the number of students receiving one or more As?
 - c. How did the block schedule affect the Penns Grove High School honor roll?
2. How did the implementation of block scheduling affect non academic indicators of student performance?
 - a. How did the block schedule affect student discipline?
 - b. How did the block schedule affect student absences?

3. How did the implementation of the block schedule affect the school climate?
 - a. What do students perceive the affects of block scheduling are on their motivation to learn, ability to succeed, and classroom instruction?
 - b. What do teachers perceive the affects of block scheduling are on student and teacher moral, classroom instruction, and student responsiveness?
 - c. What do administrators perceive the affects of block scheduling are on student and teacher moral, classroom instruction, and student responsiveness?

Development and Design of Research Instruments

Interviews and surveys provided for the qualitative data used in this study. Each level of the high school's hierarchy was addressed. Students and teachers were surveyed and the administration was interviewed. Student surveys (see appendix A) were field tested in a high school Algebra II class taught by the intern. Teacher surveys (see appendix B) were field tested by 5 teachers, one from each major department of the high school. In addition to these field tests, the survey questions, as well as the guiding questions used in the administrative interviews (see appendix C), were reviewed and approved by the intern's field and university mentors.

The guidance department provided information on student grades as well as honor roll lists. The administrative data base provided current statistics on school attendance and discipline while administrative files provided information on past records.

Sample and Sampling Technique

A purposeful sample was used to select which students to survey. Because the current twelfth grade students have experienced two years of traditional scheduling and

are experiencing their second year of block scheduling, they were selected as the group with the most to offer this study. A comprehensive sample was used for the teacher survey and administrative interviews. That is, all teachers in Penns Grove High School were afforded the opportunity to complete the survey and interviews were completed for each of the school's administrators – two vice principals and the principal.

Data Collection Approach

To study the effects of block scheduling on student's academic success, honor roll lists were secured from the school's guidance department for the past four years. In addition to honor roll lists, the High School's technology specialist provided lists indicating the number of students with one or more Fs as well as the number of students with one or more As from September 1995 to January 1999.

Administrative discipline files provided research data on non-academic indicators of student behavior such as attendance and discipline referrals. Discipline and attendance summaries from September 1995 to January 1999 supplied monthly totals for each year.

Surveys and interviews were the primary source for obtaining information on the school's climate under block scheduling. All twelfth grade students were surveyed in their English class. This location was chosen because English is a mandatory subject for twelfth graders which assured that all twelfth grade students would be accounted for. For follow-up purposes, English teachers were asked to give make-up surveys to those students not present on the day the survey was administered.

Teacher surveys were distributed to all Penns Grove High School teachers via their school mailbox. Each teacher's survey was coded with a number at the bottom right corner of the survey which could be used to identify the teacher completing the survey. This allowed the intern to follow up on non respondents until a 70% return rate was achieved. Teachers were informed that they would receive the results of this survey.

Administrative interviews completed the triangulation of opinions on the school's climate under block scheduling. Each interview was tape-recorded. Interviews ranged from thirty minutes to an hour.

Data Analysis

Quantifiable data such as the number of student absences were compared to those numbers from years past. To compare these measures, totals from each month starting with September and ending with January were compared to their corresponding months from the past four years. That is, the number of student absences for the month of September of 1998 are compared to the total student absences of the Septembers of 1997, 1996, and 1995. This process was repeated for October, November, December and January for absences as well as discipline referrals, honor rolls and students receiving As and Fs.

The surveys and interviews provided descriptive data addressing the student's, faculty's, and administration's beliefs on why block scheduling has or has not been effective. Close ended questions facilitated the compilation of the survey results. Clusters of questions were averaged per topic. These averages indicate positive and negative opinions in the categories of staff and student moral, school climate, curriculum delivery, classroom discipline, and general work loads. Open ended survey questions provided teachers and students the opportunity to elaborate on their responses. These answers provided the intern with valuable insight and clarity on key issues.

Tapes from the interviews were transcribed into notes. Responses and discussions were utilized in a holistic manner to determine the administration's temperature on block scheduling. General as well as specific topics were discussed per interview.

Chapter 4

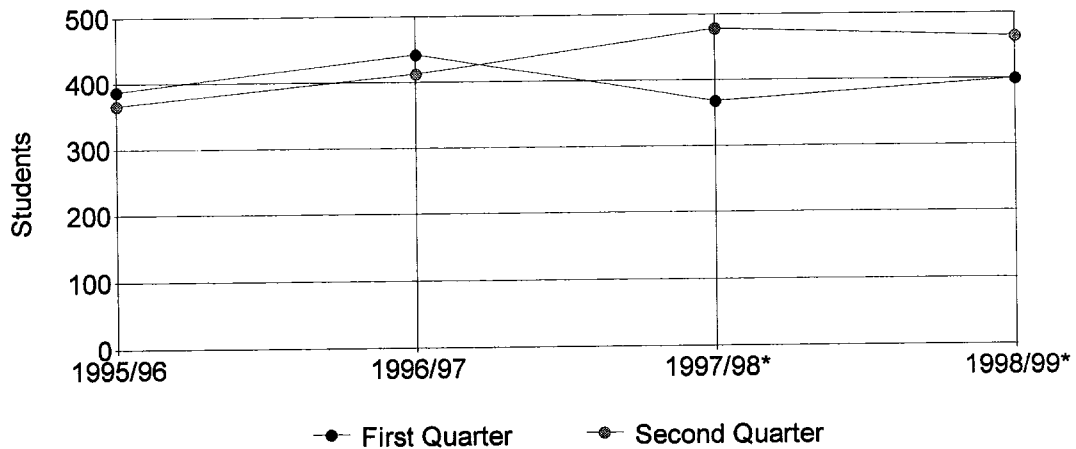
Presentation of the Research Findings

This chapter addresses the data gathered from office records, student surveys, staff surveys, and administrator interviews. This data yields facts on the number of students who have received A's and F's as well as honor roll, attendance, and student discipline statistics for each of the past four years. Additionally, student, staff, and administrative perceptions are manifested.

Academic Indicators of Student Performance

School records provided the data used to compare academic indicators from the first two years of the block schedule with the final two years of the high school's traditional schedule. Chart 5 indicates the number of individual students with one or more A's. During an interview, the Principal attributed the 16.2% increase in student success from the first to the second quarter of the 1997/98 school year to in-service faculty meetings addressing block schedule teaching strategies. Other than the previously mentioned, the intern has found no other noteworthy attributes of this data. Table 1 in Appendix D contains the data used to create Chart 5.

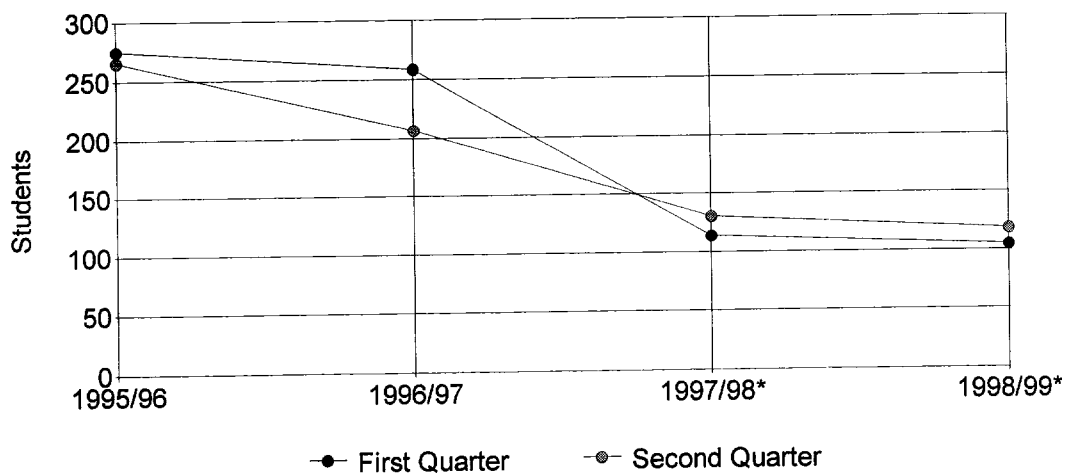
Chart 5 - Students With One or More A's



* Block Scheduling Years

Chart 6 addresses the total number of students receiving F's over the past four years. Although this data shows a trend of decreasing failures over all four years, it is clear that the year Penns Grove High School switched to the block schedule produced the greatest decrease in students failing. The first two quarters after the block schedule was implemented (1997/98) reveals a 47.4% decrease in the number of students failing courses. Table 2 in Appendix D contains the statistics used to create Chart 6.

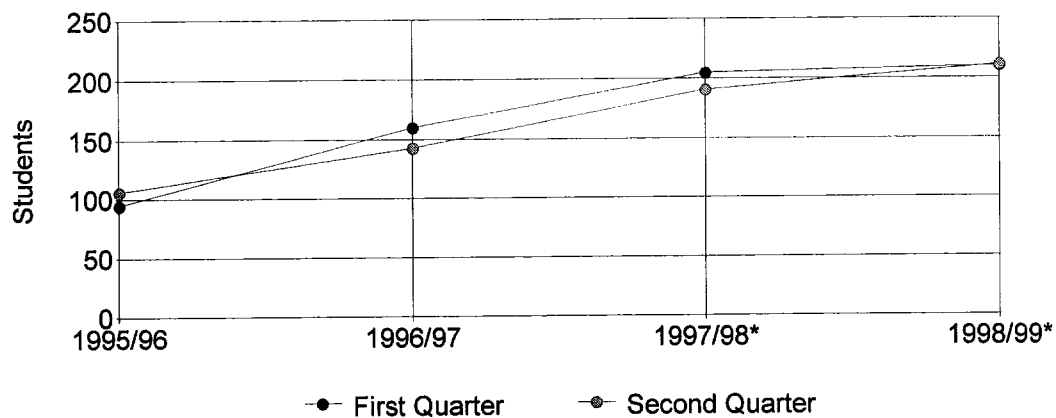
Chart 6 - Students With One or More F's



* Block Scheduling Years

Honor roll lists were the last academic indicator of student achievement this study addressed. The number of students obtaining honor roll status increased in each of the four years of this study. The greatest increase occurred between 1995/96 and 1996/97, years when block scheduling was not in place. Chart 7 shows that the trend which started before block scheduling, continued through its implementation. The statistics used to create chart 7 are located in Appendix D, Table 3.

Chart 7 - Students on Honor Roll

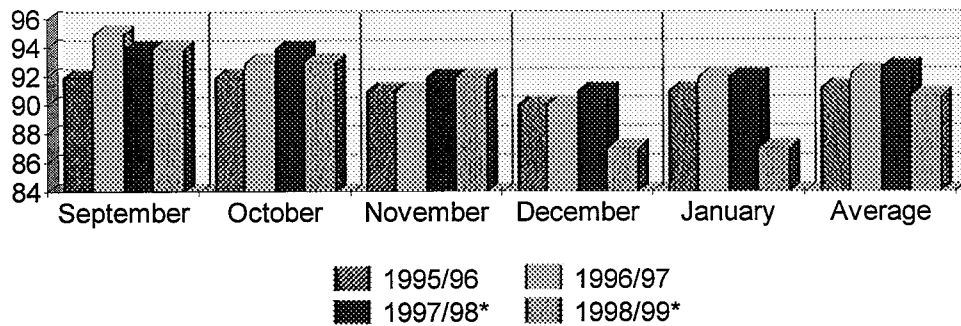


* Block Scheduling Years

Nonacademic Indicators of Student Performance

As Chart 8 illustrates, monthly attendance figures show the general trend of having better rates during September and October than from November to January. Averaging the rates for each month shows a slight increase (four-tenths of a percent) in attendance during the first year of block scheduling and a 2% decrease during the second year of block scheduling. In an effort to explain the notably low rates for December and January of the 1998/99 school year, the attendance officer stated that this year has been a bad flu season. Table 4 in Appendix E contains the statistics used to create Chart 8.

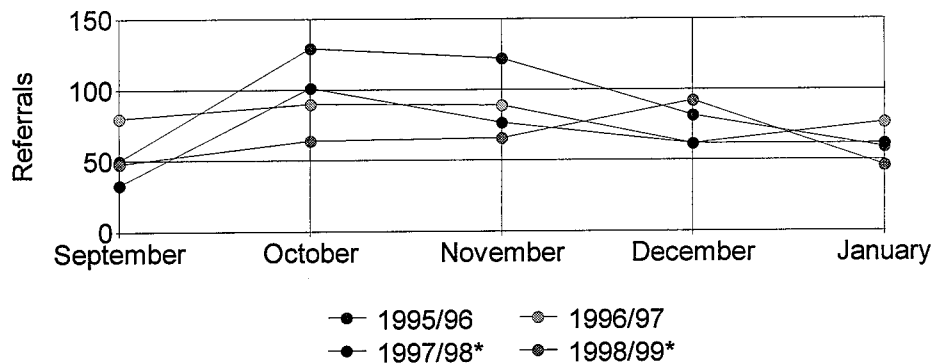
Chart 8 - Monthly Attendance
Percent Present



* Block Scheduling Years

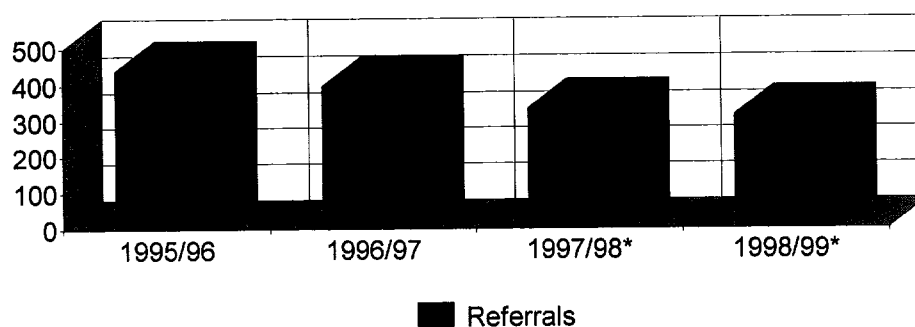
Chart 9 illustrates the monthly trends of discipline referrals from September to January. It should be noted that, with few exceptions, the months that block scheduling were in effect produced lower referral totals. Chart 10 illustrates that total discipline referrals from September to January decreased each year of this study. Of the decreases, the largest noted was 14.1% and occurred during the first year of block scheduling, 1997/98. This was followed by 5.6% decrease during the 1998/99 year. Comparing the last year of traditional scheduled referrals, 1995/96, to the current year's referrals of 1998/99 reveals a 20.6% decrease. The raw data used to create Charts 9 and 10 is contained in Table 5 of Appendix E.

Chart 9 - Discipline Referrals



* Block Scheduling Years

Chart 10 - Total Discipline Referrals
For September to January



* Block Scheduling Years

Faculty, Student, and Administrative Perceptions

The perceptions of student, faculty, and administration on the block schedule's effects on the school climate were overwhelmingly positive. These perceptions were voiced through surveys and interviews. Highlights for each follow.

Faculty Survey Highlights

In respect to curriculum delivery, 83% of the faculty believe their teaching style has improved since block scheduling was implemented and 81% believe the reason their teaching style changed was the block schedule. Ninety-two percent (92%) of the faculty indicated that they incorporate more cooperative learning activities since switching to the block schedule. Additionally, 83% of the staff indicated that having fewer classes has increased their ability to understand and address their students needs.

The above improvements may have been at the expense of some aspects of the curriculum, as 53% of the staff indicated the quantity of curriculum covered has not increased. This was the only attribute of the block schedule that received a negative close-ended response total. The intern believes this is indicative of a general decrease in the quantity of curriculum being delivered in most courses.

The faculty appears to like block scheduling better than the traditional schedule with 83% indicating they would not choose to return to their old schedule. Similarly, 67% indicate the block schedule has positively impacted teacher morale.

Although it is clear that the teachers have a positive perception of the block schedule, they did have some suggestions for improvement. The most popular of these was to reduce class sizes. Forty-five percent (45%) of the faculty indicated this desire on the open-ended portion of their survey.

The second most popular suggestion may be a derivative of and would definitely impact the former suggestion. This suggestion was to create more elective courses. Twenty-eight percent (28%) of the staff voiced this concern. The last noteworthy suggestion for improvement, implementing a daily activity period, received a 17% response. For comprehensive results of the faculty survey, see Appendix F.

Student Survey Highlights

A large majority of senior students (76%) believe they learn more in each subject due to block scheduling. The reason for this may stem from the fact that 81% of the seniors indicated that block scheduling has provided them with more opportunities to ask questions about concepts they do not understand. Seventy-three percent (73%) of the students confirmed what the faculty surveys indicated — the block schedule has triggered a change in their teacher's instructional styles.

Sixty-one percent (61%) of the students indicated they did not have an easy time making up work they missed due to absence. This, as well as the use of technology in the classroom, yielded the only negative close-ended responses of the student survey.

On the open ended portion of the survey, the most common advantage of block scheduling, cited by 42% of the students, was having fewer classes per day. The second most frequently listed advantage, cited by 24% of the students, was having more time per class. Having less homework was also listed as an advantage by 24% of the students.

The most common disadvantage of block scheduling, cited by 32% of the students, was the fact that they get bored in class or that classes are boring. Although having more time in class was listed above as an advantage, the second most frequently listed disadvantage was sitting in class for 90 minutes. Other frequently listed disadvantages were forgetting information learned (14%) and completing make-up work (12%). For complete results of the student survey, see Appendix G.

Administrative Interview Highlights

The Assistant Principals' and Principal's responses to interview questions generally paralleled each other. When addressing student morale, all administrators believed it was affected in a positive manner. This positively correlates with both the student and staff surveys. When asked to explain the reasons for the apparent improved morale, answers included, "They have less classes to worry about" and "By the time they get bored with their classes, the semester is over". The administration generally believes that students were apprehensive at first, but quickly loosened up to enjoy their new schedule.

The administration also believes that teacher moral was positively affected by the block schedule. This positively correlates with teacher surveys. The reasons administrators provided for this include: more preparation time (90 minutes per day, formerly 43 min) and fewer students to interact with per day. Two administrators commented that the faculty appears to be more willing to cooperate with the administration to solve school problems. One administrator cited an increase in the number of faculty members who volunteer for committees. Another, explained that staff are better able to concentrate on instructional and school issues because they spend less time on the daily paperwork that comes with managing and preparing for eight daily classes.

Two of the three administrators believe the majority of staff has made great instructional advances in incorporating cooperative activities and hands on projects. The third believes only a small number of teachers have changed their teaching style and most teachers teach the same way they did with traditional scheduling.

On the topic of the block schedule's impact on administrative routines, two of three administrators indicated an improvement. The two responding positively explained that less congestion in the halls due to fewer daily class changes has resulted in a decrease in problems. Both said that it has provided them with additional time which they utilize to address issues they may not have previously had time to address. Examples of such issues included revising policies on final exams, weighted courses, and dances.

The one administrator who believes block scheduling has created more work explained that now he must do everything twice. Duty schedules, student schedule changes, and balancing cafeteria student rosters are a few of the issues he named.

The assistant principals both indicated that discipline problems have decreased which positively correlates with the data collection. They both claimed fewer students come late to school and fewer students cut class. They believe this is due to the fact that students do not want to miss class because they have difficulty making up the work. Each also cited a decrease in the number of fights and violent infractions in the school.

When asked about future scheduling improvements, all administrators were in agreement with the teacher's surveys. The administration realizes the current schedule needs more electives and class sizes should be reduced. One administrator explained that the schedule specifically needs more quarter courses and that quarter courses need to be scheduled back to back. He believes that, at this point, there are too many students in study halls because they were scheduled for a quarter course for the first half of the semester with no additional quarter course following for the second half.

The Principal expressed his awareness of the lack of technology used in the classroom and his desire to increase the use of technology. This lack of technology use was evident in the student survey as well. The Principal believes that the use of technology in the classroom should increase in the future due to a substantial, recently secured, nationally funded grant.

Chapter 5

Conclusions, Implications and Further Study

This chapter utilizes the data illustrated in chapter 4 to draw conclusions on Penns Grove High School's block scheduling initiative. These conclusions are compared to those presented in chapter 2's literature review. Although some of the indicators displayed little to no progress, others showed increases and decreases that correspond to the implementation of the block schedule. The Penns Grove High School administration remains interested in the results of this study and continues to use all data possible to facilitate the school's progress under the new schedule. This study has also provided the intern with great knowledge of his school district as well as acute summative evaluation skills. It is the intern's hope that as Penns Grove High School continues to improve its block schedule, it will build on such evaluations as this study.

Major Conclusions:

The data collected on indicators of academic achievement show no negative results that can be attributed to the block schedule. Two of the three academic indicators show the block schedule had little to no effect on student achievement with one indicator revealing a considerable improvement.

The number of students receiving A's and the number of students making the honor roll did not show improvement that could be correlated to the implementation of the block schedule. This is in contrast to Hottenstein's (1997) and Schoenstein's (1995) studies. In agreement with both Hottenstein's and Schoenstein's studies was the number of students failing classes at Penns Grove High School. The year block scheduling was implemented, the number of students receiving F's decreased drastically, by 47.4%. This

was followed by an additional decrease of 5.6% during the second year of block scheduling.

The students and faculty have positive perceptions about the block schedule's affects on students learning. Seventy-five percent (75%) of the students believe they are learning more under the block schedule than they were under the traditional schedule. The faculty agreed strikingly with 75% claiming that block scheduling has had a positive impact on student learning.

Penns Grove High School's block schedule has had positive affects on student learning and student grades. Although these affects were not manifested in the number of students making honor roll or receiving A's they are clear when examining the number of students failing courses, students' perceptions of their learning, and teachers' perceptions of student learning.

The intern found no evidence correlating to Khazzka's (1997), Buckman's (1995) or Schoenstein's (1995) reports of improved attendance rates. Although Penns Grove High School's attendance rates soared during its first year of block scheduling, attendance rates were the lowest in the study during the second year of block scheduling. By averaging the attendance rates of the two traditionally scheduled years of this study and doing the same for the block scheduling years of the study, only a 0.1% difference in attendance rates exists. Penns Grove High School sustained no improvement in attendance rates as a result of changing to a block schedule. Hottenstein's (1997) study had similar results.

The block schedule has had a positive affect on student discipline at Penns Grove High School. This conclusion was derived from statistics on the number of discipline referrals processed by the High School's administration, as well as teachers' and administrators' observations.

Student discipline improved during each year of this study. However, the largest improvement occurred the first year of block scheduling with a 14.1% decrease in discipline referrals over the previous year's traditional schedule.

When surveyed, two-thirds of the faculty indicated they have had fewer discipline problems with the block schedule. During administrative interviews, each administrator cited a reduction of discipline problems as a definite result of the block schedule. This study's results do not stray from the plethora of reports addressing the positive affects of block scheduling on student discipline (Canady, 1995; Khazzaka, 1997; Carroll, 1994; Buckman, 1995; Fitzpatrick, 1997; Reid, 1995; Summerfeld, 1996; Binkley, 1996).

Conclusions addressing the affects of Penns Grove High School's block schedule on school climate were drawn from student and faculty surveys as well as administrative interviews. The conclusions that follow positively correlate to the literature addressing block schedules and school climates (Buckman, 1995; Cooper, 1996; Day, 1996; George, 1995; Eineder, 1997; Fitzpatrick, 1997; Kramer, 1997; Queen, 1997; Taylor, 1996).

Student motivation to learn has increased because of the block schedule. The average Penns Grove High School student feels they work harder, are more actively involved in their education, and are better able to succeed in their classes under the block schedule. They also feel their teachers understand them better because of block scheduling. Additionally, students perceive their teachers as using different instruction styles and presenting more detailed explanations due to the block schedule.

Block scheduling has had a positive affect on teacher morale. Over three-fourths of the teachers improved their teaching style due to block scheduling. The block schedule has also helped teachers to get to know their students better which has allowed them to address their needs better. Consequently, student responsiveness and interest in classes has increased.

As in Cooper's (1996) and Day's (1996) studies, the majority of classes in this study decreased the breadth of curriculum covered. Also, a substantial portion of the faculty believe that changing to block scheduling has increased the number of students in class per period. These effects did not discourage the faculty or students as both groups are overwhelmingly in favor of moving forward with the block schedule.

Organizational Implications:

The fact that the number of students receiving A's has not increased since the block schedule was implemented may imply that those students who did well under the traditional schedule continue to do well under the block schedule. Although the block schedule was not the cause of the honor roll numbers improving, improvement in the honor roll was noted in each of the four years of this study. This implies that the block schedule has not hindered Penns Grove High School students from obtaining honor roll status. The number of students receiving F's showed commendable improvement which implies that a block schedule format may have extra benefits for at risk students.

The fact that attendance levels were the highest and the lowest of the last four years during the first and second year of block scheduling, respectively, yields no definite conclusions on the block schedule's affects on student attendance. The blatant reduction in student discipline referrals during the block scheduling years implies, once again, that block scheduling lends itself to at risk students.

Questioning the students, faculty, and administration yielded very positive opinions on how the block schedule has affected the school climate. This may imply that block scheduling reduces the workload for each of these groups. In other words, the students, faculty, and administration may be working more efficiently and concentrating more on the important aspects of their work under the block schedule than they were under the traditional schedule.

Organizational Effects of this Study

This study has provided the faculty and administration with tangible results of how block scheduling has impacted academic and non academic indicators of student performance as well as the school climate. It has served the students by giving them a chance to voice their opinions on how block scheduling has affected their learning. The faculty was also served by giving them a chance to voice their concerns to the administration. This study additionally provided the faculty with important feedback as to confirm their thoughts and inform them where they stand in comparison to the rest of the staff.

The Penns Grove High School administration was very interested in the results of this study. The principal has begun the initial stages of increasing course offerings which should help to reduce class sizes. The open ended portion of the faculty surveys indicated this issue needed to be addressed. The Principal has also indicated that technology use in the classroom will be addressed before the beginning of the next school year. This was a need which appeared on the student survey. The administration was very pleased with other aspects of this study as it affirmed their decision to implement the 4x4 Block Schedule.

The Need for Further Study

This study should be continued to determine the reason for such a drastic improvement in the number of students receiving F's. Opponents of block schedules may claim that teachers have lowered their minimal standards for students. This study did not manifest any information to suggest the later statement to be true.

Future study on student achievement should also address standardized tests. Next year, Penns Grove High School's eleventh graders will be the first class to have three years of block scheduling prior to taking the SATs or the HSPA. This will facilitate the researcher in isolating the block schedule's affects on such tests.

If this past year's decline in attendance rates continues, student attendance will also need to be addressed in a formal evaluation. If it continues to be in a random pattern, like the past four years, the High School may wish to explore incentive programs for students who have excellent attendance records.

The Intern's Leadership Development - Conclusions and Implications

This study has provided the intern with the skills to access various forms of data from within his organization. The process of extracting this information from the various personnel and information systems in the district required the intern to develop his diplomatic and interpersonal skills. The intern interacted with district administrators, school administrators, school and district secretaries, media specialists, faculty, and students to compile the results of this study.

As this study progressed the intern began to feel empowered by the knowledge he acquired about his district, block scheduling, and the effects of block scheduling on his district. The intern was transformed into the resident block scheduling expert. The channels of communication and professional relationships developed through this project have also provided the intern with a network of personnel capable of solving practically any problem in a high school setting.

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Appendix A
Student Survey

BLOCK SCHEDULING SURVEY

Circle your response to each of the following statements.

- 1. Because of block scheduling, I feel I learn more in each subject.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
- 2. Because of block scheduling, I have more opportunities to ask questions about concepts I do not understand?**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
- 3. Because of block scheduling, my teachers present more detailed explanations than that they did before block scheduling.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
- 4. Because of block scheduling, my teachers understand me better.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
- 5. Because of block scheduling, my teachers use different instructional styles such as simulations, student presentations, and other projects to assist in the learning process.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
- 6. Because of Block Scheduling, my teachers use more technology such as video and audio tapes, computer instruction, overhead projectors, etc. than they did before block scheduling.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
- 7. Because of block scheduling, my teachers give me extra help when I need it.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
- 8. Changing to block scheduling has had a positive impact on my motivation to learn?**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

- 9. Because I have four major subjects (instead of eight) each semester, I work harder to master the material.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

- 10. I remember more because I concentrate on four major subjects (instead of eight).**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

- 11. When I have been absent, making up work is easier under the block schedule than it was with the old schedule?**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

- 12. Because of block scheduling, I feel I am more actively involved in my own education.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

- 13. Given the choice, I would chose the block schedule over the old schedule.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

- 14. I am better able to succeed in my classes under block scheduling than I was under the old schedule.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

Please answer the following questions in the spaces provided.

What are the advantages of block scheduling for you?

- 1.
- 2.
- 3.

What are the disadvantages of block scheduling for you?

- 1.
- 2.
- 3.

Thank you for taking the time to complete this survey.

Appendix B
Faculty Survey

BLOCK SCHEDULING FACULTY SURVEY

Department _____

Please circle your response to each of the following statements.

1. **Block scheduling has had a positive impact on teacher morale.**
1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
2. **Block scheduling has helped me to increase the quantity of curriculum covered in my classes.**
1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
3. **Block scheduling has allowed me to increase the quality of my curriculum delivery.**
1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
4. **I have had fewer discipline problems since switching to Block Scheduling.**
1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
5. **Students appear to be more responsive and interested in class under the block schedule.**
1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
6. **Block scheduling triggered a change in my teaching style.**
1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
7. **My teaching style has changed for the better since block scheduling was implemented.**
1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree
8. **Block scheduling has had a positive impact on the way students learn in my classes.**
1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

9. **Having only two or three classes (instead of seven or eight) allows me to get to know my students better and helps me to address their needs.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

10. **Because of block scheduling, I incorporate more cooperative learning activities in my lessons.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

11. **Block scheduling has had a positive impact on student morale.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

12. **Given the choice, I would choose to keep block scheduling over returning to the old schedule.**

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

Please list some of the ways block scheduling has affected you and your classes.

1.

2.

3.

Please list some aspects of our block schedule that could be improved in the future.

1.

2.

3.

Thank you for taking the time to complete this survey.

Appendix C
Guiding Administrative Interview Questions

1. How has block scheduling affected student morale?
Why did the block schedule create these effects?
2. How has block scheduling affected teacher morale?
Why did block scheduling create these effects?
3. How has the block schedule affected student learning?
Why did the block schedule create these effects?
4. What kind of changes have you observed in teacher instruction?
Why did the block schedule create these changes?
5. How has the block schedule affected student discipline?
Why did the block schedule create these effects?
6. How has the block schedule affected you as an administrator?
Why did the block schedule create these effects?
7. What additional changes would improve Penns Grove High School's block schedule?
Why would you make those changes?

Appendix D
Raw Academic Data

Table 1 - STUDENTS WITH ONE OR MORE A's

	First Marking Period	Second Marking Period	Total
1995/96	387	366	753
1996/97	442	412	854
1997/98	368	479	847
1998/99	400	465	865

Table 2 - STUDENTS WITH ONE OR MORE F's

	First Marking Period	Second Marking Period	Total
1995/96	275	266	541
1996/97	259	207	466
1997/98	114	131	245
1998/99	105	119	224

Table 3 - STUDENTS ON HONOR ROLL

	First Quarter	Second Quarter	Total
1995/96	95	106	201
1996/97	160	143	303
1997/98*	205	191	396
1998/99*	210	211	421

Appendix E
Raw Nonacademic Data

Table 4 - MONTHLY ATTENDANCE - PERCENT PRESENT

	September	October	November	December	January	Average
1995/96	92	92	91	90	91	91.2
1996/97	95	93	91	90	92	92.2
1997/98*	94	94	92	91	92	92.6
1998/99*	94	93	92	87	87	90.6

Table 5 - MONTHLY DISCIPLINE REFERRAL COUNTS

	September	October	November	December	January	TOTAL
1995/96	50	129	122	82	59	442
1996/97	80	90	89	62	77	398
1997/98*	33	101	77	62	62	335
1998/99*	48	64	66	92	46	316

Appendix F
Faculty Survey Results

Question	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Block scheduling has had a positive impact on teacher morale.	8%	22%	50%	17%
2. Block Scheduling has helped me to increase the quantity of curriculum covered in my classes.	14%	39%	31%	14%
3. Block scheduling has allowed me to increase the quality of my curriculum delivery.	6%	11%	61%	22%
4. I have had fewer discipline problems since switching to block scheduling.	6%	31%	42%	14%
5. Students appear to be more responsive and interested in class under the block schedule.	6%	28%	58%	3%
6. Block scheduling triggered a change in my teaching style.	3%	14%	56%	25%
7. My teaching style has changed for the better since block scheduling was implemented.	3%	11%	69%	14%
8. Block Scheduling has had a positive impact on the way students learn in my classes.	6%	14%	67%	8%
9. Having fewer classes allows me to get to know my students better and helps me to address their needs.	3%	3%	61%	22%
10. Because of block scheduling, I incorporate more cooperative learning activities.	3%	6%	75%	17%
11. Block scheduling has had a positive impact on student morale.	3%	28%	58%	8%
12. I would chose to keep block scheduling over returning to the old schedule.	8%	8%	44%	39%

Most common open ended suggestions for improvement:

Limit class sizes: 44%

Increase electives / course offerings: 28%

Add a daily activity period: 17%

Hire more teachers: 11%

Improve assembly procedures: 8%

Eliminate study halls: 6%

Limit teacher preps to two per semester: 6%

Appendix G
Student Survey Results

Because of block scheduling:	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I feel I learn more in each subject.	2%	22%	61%	15%
2. I have more opportunities to ask questions about concepts I do not understand.	2%	8%	60%	21%
3. my teachers present more detailed explanations.	6%	25%	50%	19%
4. my teachers understand me better.	2%	39%	49%	8%
5. my teachers use different instructional styles.	8%	18%	57%	16%
6. my teachers use more technology.	14%	39%	27%	16%
7. my teachers give me extra help when I need it.	6%	31%	49%	14%
8. my motivation to learn has increased.	10%	29%	40%	21%
9. I work harder to master four subjects than I would for eight.	2%	31%	48%	19%
10. I remember more because I concentrate on four major subject(instead of eight).	2%	33%	40%	25%
11. it is easier to make up work when I am absent.	23%	38%	21%	17%
12. I feel I am more actively involved in my own education.	4%	29%	52%	15%
13. I would chose block scheduling over the old schedule.	10%	17%	29%	40%
14. I am better able to succeed in my classes than I was under the old schedule.	2%	27%	50%	21%

Most common open ended responses:

<u>Advantages of the block schedule</u>	<u>Disadvantages of the block schedule</u>
1. Fewer daily classes: 42%	1. Class is more boring: 32%
2. Less home work: 24%	2. Sitting in class for 90 minutes: 20%
3. More class time: 24%	3. Making up work due to absence: 12%
4. Day goes by faster: 14%	4. Teachers assign more work: 8%
5. Learn more: 8%	5. Get tired in class faster: 8%
6. More group activities: 8%	6. Teachers talk too much: 6%
7. Easier to get on honor roll: 8%	7. Learn less: 4%

Biographical Data

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