AN EXAMINATION OF BLOCK SCHEDULING: TEACHER PERCEPTIONS
AND RELATIONSHIP TO STUDENT ACHIEVEMENT

by

WILL TODD, JR

A DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Education in the
Area of Instructional Leadership
in the Graduate School of
The University of Alabama

TUSCALOOSA, ALABAMA

2007
INFORMATION TO USERS

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleed-through, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.
Submitted by Will Todd, Jr. in partial fulfillment of the requirements for the degree of Doctor of Education specializing in Instructional Leadership.

Accepted on behalf of the Faculty of the Graduate School by the dissertation committee.

David Dagley, Ph.D., J.D.

John Petrovic, Ph.D.

Jamie Satcher, Ph.D.

Rose Mary Newton, Ed.D.
Cochairperson

Jane Newman, Ed.D.
Cochairperson

Stephen Tomlinson, Ph.D.
Department Head

Date

David A. Francko, Ph.D.
Dean of the Graduate School

Date
ACKNOWLEDGMENTS

This dissertation is dedicated to my mother, Mrs. Earlean Todd-Hayward, and my late father, Mr. Will Todd, II, who have given me the strength and encouragement to follow my dreams throughout life. They, along with my godmother, Mrs. Mattie Richards-Herd, and my counselor, Mr. Willie Pritchett, have instilled in me a sense of purpose toward family and community responsibility to succeed to my highest potential.

Special thanks to the late Dr. Harold Bishop, my initial chairperson, who instilled a sense of encouragement and a legacy of learning. Likewise, special thanks to Dr. Nirmala Erevelles, who took the torch to further guide me through this process until a family emergency prevented her guidance. Then, I would like to extend a special thanks to Dr. Rose Newton and Dr. Jane Newman for their continued support and guidance as they agreed to continue the legacy of excellence by serving as chairs of my committee, especially Dr. Newton, who has always provided professional and expert knowledge toward completing this project. Thanks to other committee members: Dr. David Dagley, Dr. John Petrovic, and Dr. Jamie Satcher, for their guidance and support. In particular, my deepest gratitude is extended to Dr. Satcher, my data expert, for his great analytical skills, support, and assistance with complex data analysis, and Dr. Jacquelyn George, my proofreader, for her great communication skills and thoroughness with this process.
ABSTRACT

Block scheduling is a common reform initiative implemented in secondary schools. One argument for adopting this initiative is that longer blocks of instructional time are likely to increase student achievement and, ultimately, graduation rates. The first purpose of the study was to examine the perceptions of selected Atlanta public middle and high school teachers' perceptions regarding block scheduling. The second purpose was to examine whether achievement data for selected Atlanta public middle and high schools differed when comparing those schools during the time frame that block scheduling was in place and after block scheduling was discontinued.

The study was conducted in a large, urban school district located in a Southeastern state. The study participants were employed in secondary schools that were presently using or had previously used block schedules. Perceptions of teachers were obtained through data collection from a 24-item survey and two focus group discussions. Archival data regarding student achievement were obtained from the Atlanta Public Schools district and state of Georgia's report cards. There were two major findings. Results of the focus group discussions indicated that middle and high school teachers favored the block schedule over the traditional schedule. Nevertheless, only middle school achievement improved significantly under a traditional schedule. In the future, researchers would do well to conduct additional research on the impact of various approaches to scheduling, examine the impact of block schedules on specific subgroups of students, and conduct similar research in other settings.
# TABLE OF CONTENTS

**ABSTRACT**.........................................................................................................................iv

**CHAPTER I INTRODUCTION TO THE PROBLEM**..............................................................1

Introduction......................................................................................................................... 1
Statement of the Problem...................................................................................................... 2
Purpose of the Study............................................................................................................... 3
Research Questions............................................................................................................... 4
  Qualitative Research Questions....................................................................................... 4
  Quantitative Research Questions..................................................................................... 4
Hypotheses............................................................................................................................ 4
Setting.................................................................................................................................. 5
Operational Definitions of Terms........................................................................................ 9
Limitations............................................................................................................................ 10
Assumptions........................................................................................................................ 10
Significance of the Study....................................................................................................... 11
Research Design.................................................................................................................. 11
Organization of the Study..................................................................................................... 12

**CHAPTER II REVIEW OF RELATED LITERATURE**..........................................................13

Introduction.......................................................................................................................... 13
Historical Antecedents of the Structure of Schooling......................................................... 14
  Carnegie Standards.......................................................................................................... 15
  A Nation at Risk............................................................................................................... 16
Characteristics of Urban Schools........................................................................................ 18
  Rural Communities to Urban Schools............................................................................ 18
  Urban Schools and Economics......................................................................................... 19
  The Plight of Urban Schools and Teachers.................................................................... 20
  Urban School Reforms..................................................................................................... 21
Approaches to Scheduling.................................................................................................... 23
  Traditional Scheduling.................................................................................................... 23
  Block Schedules.............................................................................................................. 24
  Block Schedules and Student Achievement................................................................... 27
  Block Scheduling Effects on Instructional Time............................................................. 36
The Classroom Environment............................................................................................... 36
Instructional Strategies........................................................................................................ 38
Instructional Planning......................................................................................................... 41
Implications for School Discipline..................................................................................... 43
Teacher-Student Interaction............................................................................................... 48
Attendance........................................................................................................................... 52
Educational Policymakers.................................................................................................... 53
Educators and Change......................................................................................................... 54
APPENDIX E  MIDDLE SCHOOL FOCUS GROUP .........................................................119
APPENDIX F  HIGH SCHOOL FOCUS GROUP ..........................................................129
LIST OF TABLES

1 Atlanta Public Schools Scheduling Model Timelines ........................................... 3

2 Themes from Middle School Teachers .................................................................... 81

3 Themes from High School Teachers ....................................................................... 82

4 Middle School English/Language Arts GCRCT Mean Test Scores for School Years 1999-2000 to 2005-2006 ........................................................................ 84

5 Middle School Mathematics GCRCT Mean Test Scores for School Years 1999-2000 to 2005-2006 ........................................................................ 85

6 High School English/Language Arts GHSGT Mean Test Scores for School Years 1999-2000 to 2005-2006 ........................................................................ 86

7 High School Mathematics GHSGT Mean Test Scores for School Years 1999-2000 to 2005-2006 ........................................................................ 87

8 Means and Standard Deviation of Components by Teaching Levels ...................... 88

9 Univariate F Tests Across Component Areas ......................................................... 89

10 Analysis of Variance of Achievement in Middle School English/Language Arts .......... 90

11 Analysis of Variance of Achievement in Middle School Mathematics .................... 91

12 Sample Sizes, Means, and Standard Deviation of Middle School English/Language Arts Scores ................................................................. 91

13 Sample Sizes, Means, and Standard Deviations of Middle School Mathematics Scores ........................................................................................................... 92

14 Analysis of Variance of Achievement in High School English/Language Arts ............ 93
15 Analysis of Variance of Achievement in High School Mathematics ............... 94

16 Sample Size, Means, and Standard Deviations of High School English/ Language Arts Scores................................................................. 95

17 Sample Size, Means, and Standard Deviations of High School Mathematics Scores................................................................. 96
CHAPTER I
INTRODUCTION TO THE PROBLEM

Introduction

Believing that secondary schools would benefit from a restructuring of time, many school districts across the nation, including Atlanta public schools, have begun experimenting with some form of block scheduling. Proponents of the block schedule claim that there are many benefits of having longer time blocks for teaching and learning (Canady & Rettig, 1995a; Robbins, Gregory, & Herndon, 2000).

The purposes of this study are to examine opinions of selected Atlanta public middle and high school teachers’ perceptions regarding block scheduling and determine whether there is a difference between the achievement levels in selected Atlanta public middle and high schools that operated on a traditional schedule and those that operated on a block scheduling method during the school year 1999-2000 through school year 2005-2006. School leaders will be able to evaluate and analyze student achievement in schools based on varying scheduling patterns.

Educators believe that block scheduling can create more time for instruction by reducing the number of classes required and the amount of time spent transitioning from classes. According to Queen and Gaskey (1997), student achievement and school climate improve when block scheduling is used because fewer incidents of disruption occur, and
more time is utilized on quality instruction. Teachers can implement a variety of instructional strategies, an intensified curriculum, and more individualized instruction. Students also view fewer courses and longer class periods as opportunities to develop more personal interactions and better relationships with peers and teachers, as strategies to reduce stress levels, and as opportunities for teachers to become more sensitive to their needs. Learning is enhanced in a classroom where there is greater personalization and when students feel emotionally safe to express themselves.

Block scheduling offers a restructuring of the school day into classes much longer than the traditional 50-minute period. In one common form, students have four longer class periods per day instead of six or seven (Queen & Gaskey, 1997). A course that normally covers the entire school year can be compressed into an intense half-year course. Fewer, longer classes allow new styles of teaching where education becomes less stressful, more relaxed, and more enjoyable.

Statement of the Problem

During the 2000-2001 school year, based on political influences from the state of Georgia's Department of Education, increased requirements for earning a high school diploma, and school reform initiatives in middle school programs, the Atlanta Public Schools district decided to begin implementing some form of block scheduling in all high schools. Eight of ten high schools used a block schedule containing four 90-minute blocks on alternating days while two schools used four 90-minute blocks, completing a year-long Carnegie unit within one semester. Conversely, all middle schools, which had previously operated using four or five 80- to 90-minute block periods, would now operate
using a traditional schedule containing a 50- to 55-minute period consisting of six or seven periods.

Table 1

*Atlanta Public Schools Scheduling Model Timelines*

<table>
<thead>
<tr>
<th>Type</th>
<th>Prior to school year 2000-2001</th>
<th>After school year 2000-2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional High Schools</td>
<td>Middle Schools</td>
<td></td>
</tr>
<tr>
<td>Block</td>
<td>Middle Schools</td>
<td>High Schools</td>
</tr>
</tbody>
</table>

Currently, no studies have been conducted to provide Atlanta public schools decision makers with information regarding whether block scheduling methods work best in the Atlanta school district. Studies have been conducted in other districts seeking to determine the best instructional models related to increased student achievement, but not locally. There is a need for empirical information to assist policymakers and educational decision makers of the Atlanta Public Schools district with this challenge.

**Purpose of the Study**

The first purpose of the study was to examine the perceptions of selected Atlanta public middle and high school teachers’ perceptions regarding block scheduling. The second purpose of this study was to determine whether there is a difference between the achievement levels in selected Atlanta public middle and high schools that operated on a traditional schedule and those that operated on a block scheduling method during the school year 1999-2000 to school year 2005-2006. The study findings will allow school leaders to evaluate and analyze student achievement based on schools using (either operating on or using but not both) different scheduling models. This vital information
can provide assistance to decision makers in Atlanta schools regarding the most effective use of instructional time.

Research Questions

Qualitative Research Questions

1. What strengths will teachers identify that characterize schools that operate under the block schedule?

2. What weaknesses will teachers identify that characterize schools that operate under the block schedule?

3. What themes will emerge from focus group interviews regarding scheduling models and their impact on achievement and climate?

Quantitative Research Questions

1. Will Atlanta Public Schools middle and high school teachers’ perceptions differ regarding the impact of block scheduling?

2. Were there any differences in the achievement data at the middle and high school levels when Atlanta Public Schools used or did not use block scheduling?

Hypotheses

1. There will be no significant difference in perceptions concerning the impact of block scheduling in selected Atlanta public middle and high schools when comparing middle school teachers and high school teachers.

2. There will be no significant difference in achievement in selected Atlanta public middle schools that operated on a block scheduling model during the 1999-2000 school year versus those Atlanta public middle schools that operated under a traditional scheduling model during school year 2000-2001 to school year 2005-2006.
3. There will be no significant difference in achievement in selected Atlanta public high schools that operated on a traditional scheduling model during the 1999-2000 school year versus those Atlanta public high schools that operated under a block scheduling model during school year 2000-2001 to school year 2005-2006.

Setting

The Atlanta Public Schools (APS) district, an inner city, urban district located in Atlanta, Georgia, is one of the largest school districts in the state. The Atlanta City Council began the process that led to the establishment of the Atlanta Public Schools in 1869. Three years later, the first APS School—Ivy Street—opened its doors to provide the city’s youth with the educational tools needed to meet the challenges of society.

The APS policy-making body is the nine-member Atlanta Board of Education, composed of six district representatives and three at-large representatives, all of whom are elected. The day-to-day administration of the school district is the responsibility of the 15th superintendent, Dr. Beverly L. Hall, who was appointed by the board in 1999.

The Atlanta Public Schools district has an active enrollment of approximately 50,000 students, attending 85 schools: 59 elementary schools (K-5), three of which operate on a year-round calendar; 16 middle schools (6-8); and 10 high schools (9-12). The student population has been declining, due mainly to the revitalization of inner-city federal public housing developments, which are allowing only a fractional portion of the original residents to return into mixed-income housing communities.

Based on the 2005-2006 school data’s state report card, the Atlanta Public Schools district employed over 3,600 teachers, kindergarten through 12th grade, consisting of 23% male and 77% female, operating under a 190-day contractual school
year. Approximately 76% of the teachers were African American, 21% were White, and the remaining 3% were a combination of Hispanic, Asian, and Multiracial. The average teaching experience in the district was 10 years, with 441 (12%) having less than 1 year of experience; 1,812 (50%) having from 1 to 10 years of experience; 752 (20%) having from 10 to 20 years of experience; and 649 (18%) having over 20 years of experience. Approximately 47%, or 1,719 teachers, possessed only a bachelor’s degree; 41% had at least a master’s degree; and 11% held advanced degrees (specialist and/or doctoral). The pupil-teacher ratio for the school year 2005-2006 was 14 to 1 (Georgia DOE Report Card, 2005-2006).

The Georgia Department of Education (DOE) report card for the 2005-2006 academic year also revealed that approximately 86% of the student population was African American, 8% were White, 4% were Hispanic, and the remaining 2% were Asian, Native American Indian/Alaskan, or multiracial. The district was comprised of nearly 70% low-income students from families eligible to receive free or reduced lunch. Over 9% of the student population was enrolled in the program for exceptional children (PEC) or special education. The students who did not speak English as a first language or speakers of other languages (ESOL) comprised 2.6% of the district’s student population, whereas remedial education participation was 29.5% in elementary and 6.9% in high school. Student enrollment in other selected programs included 8.3% in gifted (K-12), 55.2% in vocational labs (9-12); and 1.8% in alternative programs (K-12; Georgia DOE Report Card, 2005-2006).

The state of Georgia has administered annual criterion-referenced tests to middle and high school students to monitor the progress of districts throughout Georgia since
2000. The Georgia Criterion Referenced Test (GCRCT) is given to elementary and middle school students, and the Georgia High School Graduation Test (GHSGT) is given to high school students in the 11th grade as a requirement for graduation. Both assessments measure how well students learn and accomplish knowledge and skills set forth in specific curricula or units of instruction. The passing score (standard) for meeting expectations on the GCRCT is 300 or above. The GHSGT requires a passing score of at least 500.

Before the No Child Left behind Act (NCLB) of 2001, the state of Georgia, along with many other states, gave annual criterion and norm-referenced tests to specific grade levels to monitor the progress of school districts while comparing their students to national norms. Georgia law, as amended by the A+ Education Reform Act of 2000, required that all students in Grades 1 through 8 take annual assessments in the areas of reading, English/language arts, and mathematics. Initially, only Grades 4, 6, and 8 were required to administer end-of-year assessments, but based on the NCLB Act of 2001, all other grades were required to administer assessments to measure the annual yearly progress (AYP) of school districts (Georgia DOE Report Card, 2005-2006).

According to the Georgia DOE report card, during the school year 2005-2006, Atlanta Public Schools’ eighth graders’ average scores were 76% in English/language arts and 60% in mathematics on the GCRCT standardized tests. The state average GCRCT score for reading was 87% and for mathematics was 77%. Eleventh graders in the district scored 93% in English/language arts and 84% in mathematics on the GHSGT, compared to 96% and 92% state averages in English and mathematics, respectively (Georgia DOE Report Card, 2005-2006).
Based partially on lower test scores, increasing graduation requirements, and middle school reform initiatives, beginning in the late 1990s middle schools in the Atlanta school district that operated under block schedules began to evaluate their educational programs and abandon the block concepts for the middle-grade learner. This schedule typically involved four core subjects, such as language arts, mathematics, science, and social studies, and one block of electives or connections courses, mainly keyboarding, physical education, health, art, music, or consumer sciences. Science and social studies, as well as the elective courses, operated on an alternating A/B schedule, with students attending each class every other day. High schools in the district, on the other hand, began experimenting with flexible schedules as a resolution to address students' needs to take more required and elective coursework to meet the growing requirements of college preparatory and vocational diplomas. All high schools elected to operate under a modified or full 4 x 4 block schedule to increase the number of courses per year.

In addition to the restructuring of time, the Atlanta Public School system was also undergoing a 5-year comprehensive school reform program. In reforming the school district, test data were analyzed, then aligned to resources, staff development, and instructional programs to address areas of improvement. All schools also chose a reform initiative, such as “Success for All,” “High Schools that Work,” or “Direct Instruction,” to assist in directing and focusing the overall instructional program.
Operational Definitions of Terms

The following are operational definitions of terms relevant to this study. All definitions are based on verbal communication that will give this study a common language.

*High school.* High school is a school that includes Grades 9 through 12 (Canady & Rettig, 1995a).

*Middle school.* Middle school is a school that includes Grades 6 through 8 (Canady & Rettig, 1995a).

*Block schedule.* Block schedules are schedules in which at least part of the daily schedule is organized into larger blocks of time of more than 60 minutes to allow flexibility for varied instructional activity. Modified block schedule may include four 90-minute classes with completion in one semester rather than one year, 4 x 4; seven or eight 90-minute classes meeting every other day per semester, A/B; and four classes for a 75-day term followed by a 15-day enrichment or remediation term, 75-15 (Canady & Rettig, 1995a; Robbins et al., 2000; Zepeda & Meyers, 2000).

*Student achievement.* Student achievement measures the levels of proficiency on state and national standards tests, such as the Iowa Test of Basic Skills (ITBS), Georgia Criterion Referenced Test (GCRCT), and the Scholastic Achievement Test (SAT; Canady & Rettig, 1995a).

*School discipline.* School discipline is an infraction that occurs in direct conflict with the rules and regulations of a school. School discipline will include the number of discipline referrals reported to the administrative offices and will be established based on
incidents of violence reported during a regular school day (Canady & Rettig, 1995a; Zepeda & Mayers, 2000).

Traditional schedule. A traditional schedule is a schedule that involves a length of time that is 50 to 55 minutes per period per day consisting of six or seven periods (Canady & Rettig, 1995a).

Urban school district (or school). An urban school district is a district or school located in large metropolitan cities and comprised of a majority (85% or more) of students who are African Americans and/or Latino, children with disabilities, and those who are non-English speaking (who live in high poverty neighborhoods in large metropolitan cities; Anyon, 1997; Tyack, 1974).

Limitations

There are at least two limitations of this study. First, this study was limited to the impact that block scheduling has on student achievement in selected Atlanta public middle and high schools between school year 1999-2000 and school year 2005-2006. Also, this study was limited to the perceptions of stakeholders and teachers in the Atlanta Public Schools district.

Assumptions

1. It was assumed that participants' responses accurately represented the climate and culture of their schools.

2. It was assumed that the participants answered all questions honestly and to the best of their abilities.

3. It was assumed that the results obtained from the deliberate samples were generalizable to the larger population of middle and high schools within the district.
Significance of the Study

As educators across the nation face the challenges of school reform and meeting adequate yearly progress requirements of the No Child Left Behind Act of 2001, one of the most common and significant transformations underway involved shifting from traditional to block (variable) scheduling. Rather than have students change classroom locations, subjects, and teachers six or seven times a day, many middle and high schools are offering block schedules so as to increase graduation requirements, increase Carnegie units of instruction, offer more elective units, and concentrate on fewer subjects each semester.

Research Design

The research design for this study was a mixed method design. Both qualitative and quantitative measures were employed to examine the hypotheses and research questions. Qualitative methods included conducting two focus groups. One group included teachers from six middle schools throughout the district, totaling six middle school teachers. The other group consisted of teachers from each of the 10 high schools, totaling 12 high school teachers.

Quantitative methods included analyzing data from a researcher-developed questionnaire, analyzing data from archival sources, and conducting analysis of variance to determine significant differences. The population was all middle and high school teachers within the Atlanta Public Schools district with at least 5 years of experience. Additionally, the participants for the quantitative phase were 20% of all experienced teachers who have had continuous employment at the middle and high school level for the past 6 years (1999-2000 to 2005-2006).
Organization of the Study

Chapter I includes an introduction of the main proposal, the purpose of the study, background information on block scheduling, research questions, hypotheses, setting, operational definitions of terms, limitations, assumptions, and significance of the study. Chapter II includes a review of related literature concerning the nature and background information on block scheduling and the relationship between block scheduling and school climate. It also focuses on the effects schedules have on quality instructional time, interpersonal relationships, and student achievement. Chapter III includes an introduction, research questions, hypotheses, researcher positionality, and the research design. It elaborates on the population and participants, data collection, the instrumentation, and analysis methods. Chapter IV includes the participants, population and sample, analysis of research questions, test of hypotheses, analysis and discussion of hypotheses, and summary of research findings. Chapter V includes discussions of the findings, implications, recommendations for further research, and summary.
CHAPTER II REVIEW OF RELATED LITERATURE

Introduction

In today's industrialized nations, education is the key component that allows countries to be competitive in the new millennium. The United States has established laws and statutes that hold each state accountable for educating or schooling its own citizens. Our public system of schooling attempts, in theory, to meet the needs of all students regardless of race, socioeconomic status, gender, disability, sexual orientation, or religious background (Anyon, 1997; Tyack, 1974). Compared to public schools generally, accomplishing these goals in urban schools is particularly difficult because there is a disproportionately larger number of poor students who also have higher complexities and ranges of disabilities based on living in large metropolitan environments.

The purposes of this study are to examine the perceptions of selected Atlanta public middle and high school teachers regarding block scheduling and determine whether there is a difference between the achievement levels in selected Atlanta public middle and high schools that operated on a traditional schedule and those that operated on a block scheduling method during the school year 1999-2000 to school year 2005-2006. What follows is a review of literature that will discuss the following relevant areas: historical antecedents of the structure of schooling, characteristics of urban schools, approaches to scheduling, and educational policy makers.
Historical Antecedents of the Structure of Schooling

The federal government’s enactment of amendments and policies that shaped our national educational experiences in public schools to 20th century historical events continues to influence change. For example, the launching of Sputnik in 1957 reshaped and reorganized our nation’s schools by increasing the number of mathematics, science, and foreign language classes that students should take. That sentiment also resonated in congress with the National Defense Education Act (1958), which included student loans, scholarships, and science equipment for public and private school students to compete with their Russian counterparts (Carroll, 1990; Shortt & Thayer, 1997). Somewhat later, national reports compared the U.S. public educational system to other industrialized nations. National reports, such as, the National Commission on Time and Learning and the National Commission on Excellence (A Nation at Risk) suggested that the restructuring of time may influence and change educational outcomes (National Commission on Time and Learning, 1994).

Beginning in the early 20th century, educational reform in education is documented in the literature. Whether that reform was the restructuring of time, utilizing appropriate instructional strategies, or forming professional learning communities, education has been constantly changing and policies have been transformed to address students’ needs (Eisner, 2001). Because formalized schooling utilizes public funds, community values and individual rights have been muddled or meshed to cause pressure from the federal government to unify the direction and goals of educating a democratic society.
Although the Tenth Amendment (1791) gave individual states the exclusive rights to educate its citizens, the federal government continues to have an indirect influence and control through statutes and funding. Federal influences on school reform, including court cases such as *Brown v. Board of Education (1954)*, the *Elementary and Secondary School Act (1965)*, and *PL 94-192 Education for all Handicapped Children Act (1975)*, which later become the *Individuals with Disability Education Act* (IDEA, 1990), have all contributed to persuading public schools to educate public elementary and secondary school students. Schools districts are presently struggling to meet annual performance mandates and standards set under the *No Child Left Behind Act* of 2001, which is a reauthorization of the *Elementary and Secondary School Act* of 1965. Required by the federal government, this latest reform initiative mandates that all states close the achievement gap and ensures that all students achieve proficiency goals, regardless of socioeconomic status, race, or disability (Nichols, 2005).

*Carnegie Standards*

Our American educational system has been shaped by many internal as well as external factors. One of those external factors has been the Carnegie system for measuring the progress of secondary students. Khazzaka (1997) stated that American educators' views and learning have also been shaped by the Carnegie standards, equating student seat time in a given content area with the completion or mastery of that subject or course. For example, if students pass that quarter or semester, they are awarded credit hours that are applied toward requirements for graduation. This system has its roots in the industrialized standardization school reforms of the early 20th century when theorists, such as Frederick Winslow Taylor, believed that one could quantify learning in a very
scientific manner (Shafritz & Ott, 2001). Carnegie standards evolved from the notion that learning was a form of production in which teachers were expected to create quantifiable products in a given amount of time (Carroll, 1994; Flynn, Lawrenz, & Schultz, 2005; Khazzaka, 1997; Kruse & Kruse, 1995; Queen, 2000; Shortt & Thayer, 1997; Soares, 1998). Consequently, the federal government began to investigate educational reform initiatives that would solidify and maintain its status as the most productive industrialized country in the world. Carroll (1990) argued that this drive was even more evident during the mid 1980s when the country's secondary schools faced a bleak future.

Queen (2000) maintained that traditions in education are deeply embedded in our national experience, and generations of Americans have graduated from high schools requiring a successful completion of a prescribed number of Carnegie units. Unfortunately, the essence of the Carnegie unit is accumulated seat time. This tradition was called into question in 1983, when a report published by the National Commission on Excellence, called *A Nation at Risk*, conveyed that American students were academically lagging behind their counterparts in a number of other industrialized nations (Carroll, 1994; Flynn et al., 2005; Khazzaka, 1997; Queen, 2000; Shortt & Thayer, 1997).

*A Nation at Risk*

Findings from *A Nation at Risk* concentrated specifically on the status of secondary educational reform in America (Nichols, 2005). Declining enrollment, coupled with an aging population, had eroded the political base of public education and had made it even harder to justify increased funding to improve the quality of education. "Our society and its educational institutions seem to have lost sight of the basic purpose of
schooling, and of the high expectations and disciplined efforts needed to attain them” (National Commission on Excellence in Education, 1983, p. 7). Although three quarters of the 20th century was characterized by immense social, political, economic, and technological changes, the secondary education system had not changed or reformed its basic form of organization (Carroll, 1990). Regardless of how one looked at the educational system related to school environment, the basic components of secondary schools were the same. A common pattern characterized the life in a secondary school students’ day from the early 1920s to present day, whether one attended an inner-city school in Boston or attended a small, rural school on the West coast in Oregon.

According to Carroll (1990), a student’s school day consisted of six or seven periods that included homeroom and lunch. Classes, whether they were English literature, American history, or auto mechanics, typically lasted about 50 minutes. The school was organized into academic departments or disciplines managed or operated by an administrator called a principal. Credits were given based on Carnegie units, the product of a 70 year old system that equated learning with time in class (Flynn et al., 2005; Gruber & Onwuegbuzie, 2001; Khazzaka, 1997; Kramer, 1997).

Furthermore, Carroll (1990) suggested that the curriculum under the Carnegie system was designed to “cover” required subjects and ensure that students retained the information that was presented. Students who were effective at this practice received As, and those less effective received lower grades. Everyone received the same number of credits, except students who failed to master a designated amount of content, whether one attended school in a rural, suburban, or inner-city urban school district. As a result, urban schools attempting to operate using the traditional Carnegie unit system continued to fall
behind their counterparts in rural and suburban districts because of the many problems that plagued urban, inner-city, economically disadvantaged students (Snipes & Casserly, 2004).

Characteristics of Urban Schools

*Rural Communities to Urban Schools*

Urban schools face many of the same challenges that rural and suburban schools face, but on a larger scale because of conditions that people face living in large metropolitan areas. High poverty, high crime rates, and high unemployment coupled with low teacher expectations, language and cultural barriers, inexperienced teachers, low parental involvement, behavioral problems, low standardized test scores, and lack of motivation are some of the situations that students encounter in urban districts on a daily basis (Anyon, 1997; Darling-Hammond, 2005; Delpit, 1988; Szenete, 2006; Tyack, 1974). These challenges began with the consolidation of smaller rural schools meeting the needs of local communities into larger urban institutions that addressed complex issues facing a modern industrialized society, and continued with resolving concerns of the new pluralist society among different ethnic, religious, and economic status groups to meet their specific needs. Regardless of the challenge, educational reformers continued to seek and create the one best system to educate all students (Tyack, 1974).

From the beginning of formalized schooling, educational leaders have attempted to create a system to educate productive citizens in a changing modernizing world. This journey began with the challenge of consolidating rural schools as educated reformers began to debate the abilities of lay citizens in small rural communities to educate and equip youth tackling the changing demands of the new industrialized nation. According
to Tyack (1974), most urban educational systems of the late 19th century began as a congregation of smaller village schools from rural communities operated locally by lay citizens. This paradigm shift reflected how local rural education control transformed into a united and bureaucratized, centralized urban institution, paralleling the changes in the nation as it grew into an industrialized country competing in a global market.

Urban Schools and Economics

As the population of the metropolitan area grew, school leaders continued to modify the educational structure to create the best system of educating the urban population (Tyack, 1974). School leaders borrowed administrative functions and structures from the growing manufacturing and military organizations as models to operate efficiently. As city government began to be vulnerable to public bureaucracies and political influences, so did many urban school districts. For instance, school superintendents began to keep the balance of decision making between pleasing lay citizens who served as public school board members, the influences of large manufacturing companies who demanded workers to continue to produce and grow, and religious organization that had their views on what was good for citizens.

Similarly, as many large cities began to divide into wards or provinces to manage large government as smaller manageable departments and specialized divisions, school districts divided into specific attendance zones, separating primary and grammar schools into class divisions (Tyack, 1974). Many educational leaders began to re-form school districts into a coherent system that divided into primary and secondary levels to prepare students for life. Schools evolved from one-room buildings in rural areas of the country with one teacher teaching all subjects into large multilevel structures with many
specialized teachers and one leader called the principal. Superintendents were also
selected as centralized leaders to monitor the daily operations of schools, with textbooks
serving as the primary resource used by teachers for direct instruction.

The growth in population also coincided with an increase in the size of different
heterogeneous groups based on ethnicity, religion, politics, and socioeconomic status.
Many of the aforementioned groups, especially religious groups, began to put political
pressure on school leaders regarding what they believed was the best system for
educating students in urban communities (Tyack, 1974). Many groups viewed schools as
a tool to instill community values, create public stability, and train productive citizens for
an industrialized nation. In the early 20th century, this struggle for control greatly
increased as individual city residents became more interdependent and issues such as
health and safety became an increasingly public issue rather than an individual concern
(Anyon, 1997; Tyack, 1974). City councils were formed to address the welfare of
residents regarding issues of safety and health that threatened the growth and stability of
the population, and school boards were formed to address the needs of students regarding
the quality of education and teachers who were responsible for producing competent,
trained workers (Tyack, 1974).

*The Plight of Urban Schools and Teachers*

Anyon (1997) stated that data from the DOE in 1996 showed that approximately
76% of students enrolled in large metropolitan school districts were African American or
Latino. Additionally, although urban districts enrolled only 14% of the nation’s school
student population, a large number of urban school students were disproportionately poor
and comprised a larger portion of students who were limited English speakers. Students
in urban schools also traditionally score lower than students in suburban school on standardized test scores. These students attend school in buildings that usually are not well maintained and are considerably older buildings than suburban schools. Students in urban schools have fewer school supplies, less equipment, and fewer instructional resource materials than their counterparts in suburban districts (Anyon, 1997). According to Darling-Hammond (2003), students in urban districts are more likely to be taught by inexperienced or non-certified teachers who do not have specialized training to address the needs of socioeconomically disadvantaged youth. Additionally, a large majority of teachers who teach in urban districts are White, middle class, monolingual females who are not able to teach relevant and bilingual lessons to meet the needs of students (Delpit, 1988; Medina, Morrone, & Anderson, 2005).

Anyon (1997) stated that although many urban districts have attempted to address specific issues related to disadvantaged youth by using a variety of school reforms, many urban students are still being left behind. School reform initiatives, from court cases using Brown vs. the Board of Education and other civil rights legislation to lower class size and prove additional time to students under the No Child Left Behind Act, have failed to close the achievement gap between the majority White middle class students and minority, disabled, or non-English speaking populations.

Urban School Reforms

Many reform initiatives in education, such as efforts to improve test scores and address such issues as school vouchers, class size, and annual accountability standards, are designed to improve urban school districts (Snipes & Casserly, 2004). Most reforms take on heightened importance in major metropolitan urban districts, where the school’s
population largely consists of African American children, Hispanic children, children with disabilities, and non-English speaking students living in high poverty neighborhoods in large urban cities. According to Patterson, Collins, and Abbott (2004), urban schools suffer far greater complications than rural or suburban schools. Complications include high teacher and student absenteeism, high teacher turnover, high numbers of uncertified teachers in the classroom, and a greater number of inexperienced teachers, all contributing to the stress of operating schools in urban environments (Darling-Hammond, 2003).

These complications are exacerbated by federal legislation that requires a certified teacher in every classroom by the beginning of the 2006-2007 school year. For instance, Georgia, among other states, will be penalized under the provisions of the No Child Left Behind Act of 2001 and may lose funding if every student is not taught by (highly qualified) teachers who are certified in all areas that they teach. Furthermore, although the state of Georgia requires that all middle schools teach reading as a core subject, school districts that are facing teacher shortages in critical areas, such as mathematics, science, and special education, must also provide additional training to middle school staff members to accommodate this new regulation. Urban school districts are less likely to meet federal requirements for "highly qualified" teachers because they serve a disproportionate number of students who require specialized, highly trained teachers (Darling-Hammond, 2003). This paradigm shift is occurring as many secondary schools consider restructuring the school day to maximize the use of time to further accommodate increased graduation requirements under the No Child Left Behind Act of 2001. One resolution considers the restructuring of time into longer extended periods or blocks as a
viable solution to increase the number of courses students take (Canady & Rettig, 1995a; Rettig & Canady, 1997; Rettig & Canady, 1998a; Robbins et al., 2000).

In a global economy, industrialized nations must constantly employ highly qualified and trained workers in order to elevate their status as a competitive nation in the 21st century (Eisner, 2001). Federal guidelines hold all states accountable for increasing the quality of students that graduate from our secondary schools, which produce a large majority of the United States’ workforce. Closing the achievement gaps among subgroups of students who are disproportionately disadvantaged, disabled, or non-English speaking citizens because of economic or social circumstances will enhance the quality of life for all Americans. History has shown that our educational system has not kept pace with many historical events that aim to give equal opportunities to all students, especially, minorities, females, and socioeconomically deprived citizens, while providing a quality education comparable to other industrialized nations. One reform that may offer some solutions to this global problem is closely examining the school schedule to determine whether there is a relationship between student achievement and the organization of time.

Approaches to Scheduling

Traditional Scheduling

According to Khazzaka (1997), most secondary schools use a traditional schedule, consisting of 180 days, which requires students to follow similar patterns: (1) move from room to room five to seven times daily, (2) meet with five to seven different teachers, (3) use five to seven different textbooks, and (4) adapt to a variety of teaching methods. The school day is divided into six or seven 50- to 55-minute classes that run for the duration
of the school year. Teachers, typically teaching 120 to 150 students per day for the entire year, struggle to learn students' strengths and weaknesses, while providing individualized attention to ensure that all students learn the subject matter (O'Neil, 1995). Students' seat time in a given subject area is equated to one credit hour or Carnegie unit that is eventually applied toward graduation requirements, and students can earn up to seven Carnegie credit hours per year.

The content of each course remains disconnected from other disciplines, and the 50-minute time period limits opportunities to engage students in activities that develop higher level thinking and problem solving skills (Adams & Salvaterra, 1997; Canady & Rettig, 1995a; Kramer, 1997; Queen, 2000; Queen & Gaskey, 1997; Shortt & Thayer, 1997). The most common method of instruction is the direct approach of teaching (or lecture; Carroll, 1994; Flynn et al., 2005; Khazzaka, 1997; Kruse & Kruse, 1995; Queen, 2000; Shortt & Thayer, 1997).

**Block Schedules**

Block schedules, on the other hand, are built in much the same manner, but with the variable of time arranged differently. Block schedules divide the school day into four 90-minute blocks or classes that continue for one semester (Queen, 2000). Various forms of block scheduling have been implemented: the straightforward four 90-minute blocks per semester (4 x 4); a 2-day rotating system, with students completing eight classes during the year (AB or eight blocks); or two to three 90-minute blocks and variable or split 45-minute classes (modified block). These classes can be scheduled in various combinations, according to subject content or desired flexibility skills (Adams & Salvaterra, 1997; Canady & Rettig, 1995a; Kramer, 1997; Queen & Gaskey, 1997;
Robbins et al., 2000; Shortt & Thayer, 1997). Consequently, students can earn up to eight
credit hours per school year. Teachers teach only 75 to 90 students during three block
class periods and have a 90-minute preparation period daily. Students move four or five
times daily between classes with only a maximum of five teachers daily. This schedule is
designed to accommodate curriculum integration, several methods of instruction within a
class period, and cooperation among teachers and students from all disciplines
(Khazzaka, 1997).

The present interest in block scheduling is not the first time educators have
considered reforming the traditional secondary school schedule. During the 1960s and
1970s, as many as 15% of junior and senior high schools experimented with some form
of “flexible modular scheduling,” which sought to improve student achievement skills
(Carroll, 1990; Ray, 1996; Soares, 1998; Veal & Flinders, 2001). But modular plans
eventually were abandoned because it was too difficult to maintain accountability with
students taking different courses. Those familiar with schedules under the flexible
modular model stated that today’s educators should learn from the lessons of the failed
innovation (O’Neil, 1995).

Earlier research by Queen (2000) examined the actual amount of total
instructional time per class period using both the traditional schedule and the extended
block schedule to compare seat time. Although the (perceived) total instructional time (in
minutes) per class under a block schedule is less than the total instructional time (in
minutes) under a traditional class schedule, classes under a block schedule meet half as
many times as classes under a traditional schedule, resulting in less time loss due to
routine activities such as changing classes and taking attendance. As a result, teachers
noted that the total instructional time lost is insignificant, and that coverage of course content was not greatly reduced (Deuel, 1999; Queen, 2000).

Although Queen (2000) offered this perception of time loss as the most frequent complaint of schools that operate under a block schedule as opposed to schools that operate under a traditional schedule, other studies by Skrobarcek et al. (1997) found that most of the instructional time wasted under the block schedule resulted from teachers’ failing to vary their instructional activities and teaching strategies. Queen and Isenhour (1998) discovered an overuse of lectures in 30% of classes in schools that operated using a block schedule, which led to students complaining about boredom in longer classes under the block schedule.

For example, students who receive instruction under a traditional schedule enroll in a yearlong course consisting of two semesters. Each course usually meets for a total of 180 days for 50 minutes each period, resulting in a total of 9,000 minutes of instructional (seat) time. In contrast, students who receive instruction under a 4 x 4 block schedule, enroll in a semester-long course, compacting a year-long course into one semester (Khazzaka, 1997). Each course meets for 90 days for 90 minutes, resulting in a total of 8,100 minutes of instructional (seat) time. If 10 minutes of each class period are devoted to administrative functions at the beginning and end of the period, then students who receive instruction under a traditional schedule lose 1,800 minutes of instructional time (180 days times 10 minutes). However, students who receive instruction under a 4 x 4 block schedule would only lose 900 minutes of instructional time (90 days times 10 minutes). Consequently, students who receive instruction under both the traditional schedule and the 4 x 4 block schedule have approximately 7,200 minutes of instructional
(seat) time. As a result, because block schedules do not necessarily require any increased funding, permission from the state department of education, or accreditation agencies, the decision to operate using a block schedule could be a feasible solution for local districts to increase student performance, while addressing increased state and federal requirements for graduation.

Educational leaders are continually assessing the merits of numerous reform initiatives and the impact these proposals have on the school environment. One major objective of any reform initiative is to improve instructional outcomes, mainly student achievement (Eisner, 2001). There have been mixed results concerning the effects of block scheduling on academic achievement based on the review of related literature. Studies support a range of possible effects from a positive effect with a specific group of students to no significant differences in content-specific achievement data between either the block scheduling or the traditional scheduling model (Canady & Rettig, 1995a; Deuel, 1999; Dexter, Tai, & Sadler, 2006; Eineder & Bishop, 1997; Gruber & Onwuegbuzie, 2001; Kramer, 1997; Nichols, 2005; O'Neil, 1995; Pliska, Harmston, & Hackmann, 2001; Queen, 2000).

**Block Schedules and Student Achievement**

Studies conducted by McGorry and McGorry (1998) found evidence that compared to traditional scheduling, block scheduling improves student achievement (Gruber & Onwuegbuzie, 2001; Wronkovich, Hess, & Robinson, 1997). On the other hand, investigations conducted for the Georgia Department of Education (1998) have reported no significant differences related to student achievement in schools where block scheduling was implemented compared to schools where traditional (short-period)
scheduling was implemented. The study for the DOE in Georgia found evidence that support positive and negative effects of the initial implementation of block scheduling on academic grades, standardized test scores, and grade point averages based on different subject areas. Later reports concerning schools that converted to block scheduling after the initial first years report no significant difference in standardized test scores from those who operated using a traditional scheduling model (Canady & Rettig, 1995a; Deuel, 1999; Dexter et al., 2006; Gruber & Onwuegbuzie, 2001; Kramer, 1997; Nichols, 2005; O’Neil, 1995; Pliska et al., 2001; Queen, 2000).

One study conducted by McGorry and McGorry (1998) indicated an increase of 5% to 10% for honor roll students who were in a pilot program of block scheduling. Also, the number of students making an A grade in mathematics and science classes was 15% higher for students in the pilot program than for the rest of the student body, who followed a traditional schedule. A study conducted by Eineder and Bishop (1997) also found a significant improvement in grade point averages and in semester examination grades throughout the school in almost every department after block scheduling (Deuel, 1999; Dexter et al., 2006; Rettig & Canady, 1998b). Conversely, a summary of block scheduling findings by the Georgia Department of Education (1998) revealed that advantages found for block scheduling pertained mainly to an improvement in the school climate for both teachers and students.

DiBiase and Queen (1999) found that scores on social studies examinations for students on a block schedule far exceeded those of students who were not on a block schedule, as measured by the California Achievement Test. Additionally, differences in social studies final course averages were found to be statistically significant, with
students who received instruction using a block schedule outperforming students who
received instruction using a traditional scheduling method (Gruber & Onwuegbuzie, 2001). A similar study reported by Veal and Flinders (2001), conducted at a Midwestern high school that used a trischedule (i.e., block, traditional, and hybrid) scheduling format, obtained results that favored schedules that operated using an extended time period.

Although the hybrid method was found to be the most effective for most students, the block component improved students’ grade point averages, attendance, and attitudes about school.

Research conducted by Canady and Rettig (1995a) noted that one advantage of a block schedule is that it allows students who fail a class to repeat that subject or course during the same school year. Block scheduling formats offer students the equivalent of attending summer school, contributing to higher graduation rates because classes accommodate students’ needs for remediation (Rettig & Canady, 1998b). Further studies in Broward County Public Schools (BCPS), a large, linguistically and ethnically diverse urban school district located in Southeast Florida, produced mixed results (Deuel, 1999). Although students in block scheduling schools earned higher academic grades (i.e., GPA), there were no significant differences among schools that operated using a traditional or block schedule based on state of Florida assessments and national Stanford Achievement Tests.

Further studies by Deuel (1999) also investigated Advanced Placement (AP) courses to determine any significant differences. Four Advanced Placement measures were utilized: the number of AP students per 100 students, the number of AP enrollments per AP student, the number of AP students who took AP exams per 100 AP students, and
the percentage of students who passed those exams. Deuel found no statistically significant differences observed on any of the AP measures. Florida, like many other states, only offers AP exams at the end of the traditional school year, and some administrators expressed concerns over the semester long interval between completion of AP courses and the administration of the AP exams in the Broward County School district.

Deuel (1999) also noted that block scheduling and traditional scheduling contrasted on several measures of student performance in an urban Florida district. Although there were no group differences on the percentage of students passing various courses in mathematics or science, a significantly higher percentage of students in block scheduling schools earned grades of C or better in advanced Mathematics Levels I and II courses. Eineder and Bishop (1997) reported that few studies have examined the effect of block scheduling on specific subject areas. Ray (1996) reported improvements in writing abilities under a block scheduling model in English classes, and studies of block scheduling in mathematics by Lockwood (1995) found no significant difference in algebra or geometry tests under any of the following comparisons: ability, gender, or race.

Through the review of related literature there are findings that support both the traditional and block scheduling models based on the characteristics and demographics of individual school districts (Deuel, 1999; Dexter et al., 2006; DiRocco, 1999; Eineder & Bishop, 1997; Gruber & Onwuegbuzie, 2001; Queen, 2003; Rettig & Canady, 1998b; Veal & Flinders, 2001; Wilson & Stokes, 1999). What works best for one school district does not necessarily work best for another. Educators can decide whether to modify
schedules to accommodate specific populations after a continuous examination of research matching both quantitative and qualitative techniques.

One such finding investigated Canadian high schools semesterizing their schedules in the 1970s (i.e., requiring students to complete a year-long course in a semester-long course with extended time). After 20 years of implementation, two Canadian studies of semesterizing scheduling have reported negative results in achievement. Raphael, Wahlstrom, and McClean (1986) found a decrease in student achievement in mathematics, and another study by Bateson (1990) found decreased achievement in science, as measured on a multiple-choice test. These studies have been criticized, however, because they did not consider that students on the semester schedule were tested months after completing the class. The difference in time between course completion and testing date would give an unfair advantage to students in traditional, year-long courses (Lockwood, 1995).

On the other hand, Dexter et al. (2006) also reported that there are a number of studies comparing traditional and block scheduling plans in terms of student academic success. They also cited Bateson’s (1990) study of Canadian findings to investigate whether science students experience greater success in traditional or block schedules. The results indicate that traditional-schedule students outperformed block students in junior level secondary science. In contrast, studies from Deuel (1999) used four measures of academic performance in Florida—grade distribution, the Florida Writing Assessment scores, Grade 9 Stanford Achievement Test, and High School Competency Test—and found no significant differences between traditional and block scheduling.
DiRocco (1999) reported how the adoption of block scheduling at a middle school in Lewisburg, Pennsylvania, affected student achievement. A comparison of middle school students, who received the majority of their academic instruction using a traditional schedule of six classes per day, lasting 40 minutes for 180 days, was compared with students who received the majority of their academic instruction under a block schedule of classes meeting for 82 minutes every other day for 90 days. The initial seventh grade team experimented with block schedules as a resolution for implementing an interdisciplinary unit in English and social studies. Teachers favored the length of the extended period as a resource to integrate thematic units with minimum disruption to the overall instructional program.

At the end of the school year, teachers meet with the principal and guidance counselors to discuss the schedule’s advantages and disadvantages based on teacher observation and student-teacher interaction (DiRocco, 1999). Teachers favored the extended period of time and asked to implement block on that grade level next year. Coinciding with this effort, the school district began discussions of requiring seventh- and eighth-grade teams to share foreign language teachers. Recommendations were made to use a block schedule to effectively schedule foreign language instruction. As supporting data, a comparison study was conducted to measure the effects of the new schedule on student performance, examining the academic performance of the graduating middle school class of 1996, who received the majority of their instruction using the traditional schedule, versus the graduating middle school class of 1997, who received the majority of their instruction using the block schedules.
The results from DiRocco’s (1999) investigation revealed that final course averages, GPAs, and the means of four out of six achievement tests were higher for those students who received instruction under the block method. Thus, the findings of DiRocco’s investigation support earlier studies (DiBiase & Queen, 1999; Eineder & Bishop, 1997; Wronkovick et al., 1997), in that students who received instruction using the block schedule with longer class periods achieved higher levels of academic achievement than did students who received instruction using a traditional schedule with shorter class periods.

In contrast, other studies from the Georgia Department of Education (1998) found no clear-cut evidence to support the theory that block scheduling has a positive effect on student achievement (Gruber & Onwuegbuzie, 2001). Additionally, the investigations have also determined that there were fewer instructional hours (less seat time) under the block schedule than the traditional schedule. As a result, it is more difficult to expose students to the same amount of material needed to perform well on state administered end-of-course tests (EOCT).

Gruber and Onwuegbuzie (2001) noted, moreover, that although researchers like Raphael, Wahlstrom, and McLean (1986) found evidence of neither adverse effects nor benefits in student attitudes regarding mathematics, findings indicated an improvement in students’ attitudes toward science classes. Nevertheless, student achievement in Grades 12 and 13 were reported as significantly lower for students under block schedule classes than those under traditional year-long classes (Raphael et al., 1986).

Gruber and Onwuegbuzie (2001) also noted other studies that investigated student achievement among specific content areas relating to schools that operate under a block
versus a traditional scheduling model. Bateson (1990) studied 30,000 10th-grade students who took science courses either under a year-long, traditional format or a semester-long block. Interestingly, students who operated under the traditional schedule significantly outperformed both those students taking science in the first semester and those taking science in the second semester using a block schedule. Bateson’s study suggested that first semester students under a block schedule had forgotten a significant amount of the class material by the time they were administered the examination at the end of the year, contrary to the belief that retention is not a problem associated with block scheduling (Gruber & Onwuegbuzie, 2001).

On the other hand, studies conducted in content areas by Veal and Flinders (2001) found that students who operated under a block schedule scored significantly higher on a test of mathematics computation than did students that operated under a traditional schedule. There were no statistical differences in performance levels found between these two groups with respect to reading and language achievement. According to Cobb, Abate, and Baker (1999), although students scored higher in academics considering their GPA, there was not a significant different in the standardized test scores of those same students. Additionally, another study found no differences in academic achievement identified between students who operated using a block schedule and those who operated using a traditional schedule, with respect to reading and writing standardized test scores (Gruber & Onwuegbuzie, 2001).

One other aspect of achievement examined the ability level of the learner as a variable that affects student achievement. Proponents of block scheduling claimed that it can be a tool to accommodate a diverse student population, and those modifications can
be made to enhance opportunities for at-risk students (Queen & Gaskey, 1997). Indeed, Marchant and Paulson (2001) reported that most studies comparing block scheduling to traditional scheduling have found that students in block scheduling have significantly higher achievement (reported by grades and/or standardized scores) than students in traditional class schedules (Deuel, 1999; Khazzaka, 1997). However, some research has not favored the block over the traditional schedule, finding negative or no effects in subjects that require repeated instruction like math, science, and music (Bateson, 1990; Lawrence & McPherson, 2000; Lockwood, 1995; Wronkovick et al., 1997). Block scheduling also has been found to have a positive impact on other characteristics of students’ school functioning such as perception of school climate, management of class work, and discipline.

There are several studies that support positive and negative views on block scheduling. On such study by Dexter et al. (2006) noted mixed results, raising the question of whether there is any relationship between secondary school test scores and GPAs and the type of schedule a school operates. Further research is needed to determine if a block schedule actually reduces fragmentation from the traditional scheduling model, especially in classes that require extensive practice and/or laboratory work. These indicators of change should provide teachers with extended blocks of time that allow and encourage the use of appropriate instructional strategies for increased student involvement (Canady & Rettig, 1995a). Regardless of the study, more research studies should examine findings on whether block schedules have a positive impact on student achievement based on standardized test scores.
Block Scheduling Effects on Instructional Time

According to Adams and Salvaterra (1997), increased instructional periods of time created by block schedules have dramatically changed the classroom environment, the types of pedagogical techniques (instructional strategies), and the use of instructional planning utilized by schools. Teachers reported that they used a variety of strategies under both types of schedules. Teachers also reported that they changed activities up to four times per class period, used lecture, small cooperative groups, independent or group research projects, computers or video presentations, practice time, and homework time as instructional strategies (Canady & Rettig, 1995a; Deuel, 1999; Marshak, 1998a; Queen, 2000). Instructors who favored the aforementioned instructional strategies using a traditional schedule also favored similar strategies using a block schedule.

The Classroom Environment

According to O'Neil (1995), longer time periods devoted to each content area can be a catalyst for classroom innovation. Although longer periods of time, associated with the block schedule, support more innovative instructional activities, they do not necessarily produce results (Flynn et al., 2005). O'Neil (1995), examining research by Tom Shortt, Director of Secondary Education for the Virginia Department of Education and former principal of a school using a block schedule, reported that whereas many teachers utilized different instructional strategies to accommodate longer class periods, others gave lectures and then allowed students to do homework, transforming the course into an impromptu study hall.

The attitudes of students receiving instruction using block schedules reflected how effective they perceived their teachers to be (Canady & Rettig, 1995a). If they
perceived their teachers as good, then they thought the block schedule had a positive impact; if they perceived their teachers as poor, then they did not have a positive view of block scheduling. Flynn et al. (2005) reported that although a small body of research exists on the effects of block scheduling on curriculum and instructional practices (Canady & Rettig, 1995b; O'Neil, 1995; Staunton, 1997), other researchers in the field have advocated for inclusion of more studies because results have been content specific and inconclusive. There is little research conducted on specific differences in standards-based instructional practices (O'Neil, 1995; Queen, 2000).

On the one hand, existing research on block scheduling has highlighted many perceived advantages. Teachers who have taught using a block schedule are reported to lecture less and engage students in a more active learning environment, resulting in students becoming less passive than students utilizing a traditional schedule (Eineder & Bishop, 1997; Hurley, 1997; Kramer, 1997, Khazzaka, 1997; Queen & Gaskey, 1997; Rettig & Canady, 1998b; Veal & Flinders, 2001). According to O'Neil (1995), research also supports that teachers operating utilizing a block schedule reported an increased utilization of a variety of instructional activities (Khazzaka, 1997; Staunton, 1997), student-centered learning (Louden & Hounshell, 1998), hands-on projects and laboratory experiences (Louden & Hounshell, 1998), and small learning groups (Staunton, 1997).

In contrast to earlier perceived advantages, research by Queen (2000) indicates no instructional differences between teachers who operated using a traditional schedule than those using a block schedule, relating to the use of direct instruction (lecture), small group or structured pairs, cooperative learning groups, discovery learning, and integrated/thematic teaching. Furthermore, the dominant instructional practice remains
direct, teacher-centered instruction (lecturing) for teachers who operated using a block schedule and for those who operated using a traditional schedule. According to O'Neil (1995), teachers have not implemented any modifications in their methods of delivery to accommodate the extended periods of time.

**Instructional Strategies**

Merely changing the amount of time students spend in a class under a block schedule does not guarantee a school's success (Kupper, 1999; Queen, 2000). Teachers should utilize appropriate instructional strategies or practices to effectively use class time to impact the academic success of schools that use block schedules versus those schools that have operated using a traditional schedule.

Additional studies by Jenkins, Queen, and Algozzine (2002) revealed a comparison of teachers' opinions concerning their preparation utilizing various instructional practices in a traditional or block schedule. Surveys conducted with over 2,000 high school teachers in North Carolina who taught in schools that operated using a block schedule were compared with those of their peers teaching in schools that operated using a traditional schedule. North Carolina is one state where use of block scheduling has exploded, with little research comparing instructional strategies of schools that operated using a traditional or block schedule.

Researchers who conducted the studies only included schools that operated using a 4 x 4 block for at least 3 full years as eligible to participate in the study (Jenkins et al., 2002). They also selected similar high schools that operated using a traditional schedule based on size, ethnicity, community characteristics, and socioeconomic status (SES) determined by free and reduced lunch statistics.
Jenkins et al. (2002) identified instructional practices as cooperative learning, small group/structured pairs, discovery learning, direct instruction/lecture, simulation/role playing, peer tutoring, audiovisual experiences, technology assistance, projects, Socratic seminars, and integrated thematic teaching. Participants were asked to indicate their frequency of usage of specific instructional practices based on a 4-point Likert-type scale. Choices ranged from 0 (do not use), to 4 (use very often). The appropriateness of specific instructional practices was also recorded on a Likert-type scale with three possible selections, from 0 (not appropriate), 1 (appropriate), or and 2 (well suited).

Research conducted by Jenkins et al. (2002) contradicted earlier opinions on the benefits of schools that operated using a block schedule over those who operated using a traditional schedule relative to reduced usage of lecturing in high school instruction. Although block scheduling provided opportunities for teachers to employ a variety of instructional methods, teacher surveys indicated that these instructional approaches were embraced similar to schools that operated utilizing a traditional schedule.

Other recent studies conducted by Flynn et al. (2005) focused on secondary middle school mathematics and block scheduling. Data were analyzed from schools in three different states: Louisiana, Illinois, and Colorado. This research included 62 secondary middle schools, 39 operating using a traditional schedule and 25 operating using a block schedule; 156 secondary middle level teachers, 85 teachers from schools that operated using a traditional schedule and 71 teachers from schools that operated using a block schedule; and 60 secondary middle level administrator, 37 administrators from schools that operated using a traditional schedule and 23 administrators from schools that operated using a block schedule.
Surveys, interviews, and observations were developed and utilized to collect data. Only two of the instruments were utilized and analyzed for this study: the surveys from secondary middle level principal and mathematics teachers. Flynn et al. (2005) surveyed principals concerning school enrollment, grade levels, percentage of students eligible for free or reduced lunch, and the percentage of the Caucasian population at their respective schools. Teachers were also surveyed and asked to assess the degree of standards-based mathematics instruction based on engagement of students in 17 instructional activities, utilizing a 5-point Likert-type scale. Demographic information, such as, teaching experience, professional development, and certification, was also collected and analyzed.

Although there were some differences, Flynn et al. (2005), reported that teachers who taught in schools that operated using both a block and traditional schedule followed similar patterns based on the delivery of the instructional lesson, whole class instruction, small group, followed by individual or independent student work. Teachers who taught using both a traditional and block schedule utilized whole class instruction approximately one third to one half of the instructional class time. Students worked independently or individually about one third of the instructional time, while working in small groups the remainder of the period using both schedules. Although, the data indicate that teachers operating under both schedules rarely utilized technology resources, both settings required students to consistently utilize calculators or computers to solve real-world problems, participate in discussions to deepen mathematical understanding, share problems in small groups, and evaluate their work.

Furthermore, Queen and Gaskey (1997) suggested that teachers who operated utilizing a block schedule made more modifications concerning the instructional delivery
model than those teachers who operated using a traditional schedule. These modifications included the initial introduction of the lesson, followed by a lecture, then finally review format. Teachers who operated utilizing a block schedule realized that the instructional delivery should change every 20 to 30 minutes to maintain a high level of interest and level of student engagement in a standards-based classroom. Furthermore, standards-based classrooms focus on cooperative learning, critical thinking, process writing, and active engagement that keep students paced and involved in the learning environment. This type of standards-based environment requires an inordinate amount of planning by the individual teacher to ensure that each transition is smooth and seamless (Cunningham & Nogle, 1996; Marshak, 1998b).

*Instructional Planning*

Cunningham and Nogle (1996) noted that one of the essential elements in the restructuring of school schedules was time for planning. Teachers who teach utilizing a block schedule or 18-week semester concentrate more on the essential concepts of the content area as compared to teachers utilizing a traditional 36-week, yearlong curriculum. Daily lesson plans were rethought to include a variety of teaching strategies and activities, as well as assessments to measure the students’ overall mastery level.

Adequate time for planning is essential before and during the school year, taking a variety of formats, from individual planning time to department planning time, to cross-curricular planning (Cunningham & Nogle, 1996; Marshak, 1998b). Planning can be formal during staff development or informal with teachers during regular common planning time during the instructional day. Common planning time is devoted to teachers
in the master schedule, giving teachers the opportunity to collaborate during departmental
and interdisciplinary meetings (Cunningham & Nogle, 1996).

Queen (2000) reported that studies from Walter Hart on the use of instructional
time examined 26 schools that operated under a 4 x 4 block schedule and 26 schools that
operated under a traditional schedule. A coding system was designed and used to
compare the use of instructional time from observations conducted and code the type of
instructional activity utilized during 5-minute intervals. Categories of activities, including
passive learning, individually active, group active, and management, were measured by
raters using the coding instrument. The studies discovered that there were no differences
between schools that operated using a 4 x 4 block schedule and schools that operated
using a traditional schedule regarding the instructional time and implementing a variety
of instructional activities.

On the one hand, the study indicated differences in the rates of instruction that
occurred within both settings (Queen, 2000). Individually active learning was the most
common type of instructional activity with both types of schedules. On the other hand,
teachers who operated using a traditional schedule used more interactive instruction in
their shorter class period of time than teachers who operated using the 4 x 4 block
schedules with longer class periods. This study implies that teachers who operated using
the 4 x 4 block schedule were not as prepared to utilize a variety of instructional activities
with the extended periods of time as teachers who operated using the traditional schedule.

Queen (2000) also suggested that it is imperative that teachers plan every minute
of class time, regardless of what type of schedule they use, especially the extended length
of time using a block schedule. Therefore, it is essential to provide teachers with an
adequate amount of planning time to accommodate the entire class periods with a variety of activities that keep students actively engaged. Adequate planning time allows teachers to create engaging lessons based on well-developed pacing guides that provide detailed direction and content to be covered during the course of study. Additionally, pacing guides and detailed lesson plans also allow for smooth transitions between activities, because teachers, as well as students, understand the overarching instructional goals of the daily or weekly activities (Marshak, 1998a; Queen, 2000).

Unless there is a clear picture of instructional goals and practices under an extended period of time, restructuring the traditional schedule will appear as another reform initiative that will not positively affect student achievement (O’Neil, 1995). If teachers who teach utilizing longer block periods of time are not embracing the concepts of change that impact the restructuring of time differently from teachers utilizing the traditional schedule, the modification of time will become a perfunctory task (Staunton, 1997). The ultimate issue does not rest on whether schools operate utilizing a block schedule or a traditional schedule, but how much students achieve based on state and national assessments in a safe environment.

Implications for School Discipline

Shortt and Thayer (1998) found that fewer discipline referrals are one of the immediate effects of block scheduling. Improving school climate is important, especially at a time when safety and security are on the minds of the nation’s leaders and local school board members and must also be given consideration in addition to focusing on student achievement. An atmosphere where students and staff feel safe and secure is conducive to teaching and learning.
Khazzaka’s (1997) research supports this, as he found that the average annual number of violent infractions decreased by 45.5% (from 88 to 45), in schools utilizing a block schedule. The average number of office referrals for class disruption and insubordination dropped by 57% (from 140 to 60) under the new block schedule from those recorded previously under a traditional schedule. All grade levels experienced a decrease in the average annual number of violent infractions. Although this is a positive occurrence and a significant decrease in discipline problems, tardiness increased by 17% across the board.

According to Queen and Gaskey (1997), improved school climate was explained by closely examining the school’s culture and finding a decline in the number of discipline problems reported and an increase in positive qualitative data from teachers and students concerning the overall school atmosphere, inside and outside the classroom. Students who received instruction utilizing a block schedule changed classes less often than students receiving instruction utilizing a traditional schedule, creating a less frenzied atmosphere.

Queen and Gaskey (1997) also noted that schools utilizing a block schedule reported a significant reduction in absenteeism and a drastic reduction in incidents of violence compared to those schools that operated using a traditional schedule. Classroom management and discipline will continue to be an issue for beginning teachers, as well as other staff members, but staff development that addresses instructional strategies should also include classroom management strategies to manage the extended periods of time. Generally, students are cooperative and pleased with the schedule accommodations, because blocks provide them with a variety of teaching methods that hold their attention.
Consequently, students create fewer disruptions and discipline problems because the instructional lessons are varied (Queen & Gaskey, 1997).

In a study conducted by the Virginia Department of Education, a survey was utilized to research and examine classroom behaviors of students and teachers as well as data concerning administrators’ perceptions of the impact of block scheduling on school climate and student achievement (Shortt & Thayer, 1998). Principals responding to the survey represented 77% of the 160 schools that were using a block schedule in the state of Virginia at the time. According to Shortt and Thayer (1998), of the 164 principals surveyed in the Department of Virginia’s assessment concerning their expectations about block scheduling, 100 principals indicated a decrease in discipline problems, and 88 principals indicated that expectations were being met for the most part. Twenty-seven principals indicated that it was too soon to tell, and nine principals reported that expectations were slightly met. Many believed the reduced number of class changes and transitions during the school day correlated positively with this decline. Reducing the students’ opportunities to interact in a large setting reduced the friction that may occur among some students.

Another study noted that schools that operated using a block schedule created a more relaxed environment for teachers, and that block scheduling reduced the amount of unsupervised movement within the school, in comparison to schools that operated using a traditional schedule. Administrators and teachers also noted a decline in discipline referrals to the administrative offices. Teachers witnessed fewer fights and other types of disturbances (Queen & Isenhour, 1998).
Kramer (1997) examined and analyzed classroom surveys by researchers to compare the atmosphere, or climate, in 30 social studies classrooms that operated using a block schedule to that of 30 social studies classrooms that operated using a traditional schedule. He discovered statistical significance in effect sizes that favor classrooms operating using the block schedule. Further analysis indicated that much of this effect was caused by positive changes in 12 of the 30 social studies classrooms operating under a block schedule where teachers had received substantial staff development regarding instruction under a block scheduling model.

There are many challenges facing today’s secondary school-aged students that may contribute to high dropout rates, disruptive behavior, and absenteeism (Eineder & Bishop, 1997). A larger percentage of negative behavior occurs during the changing of classes when the entire school populations, including faculty members, are in a state of transition. Under a traditional schedule, teachers are not allowed adequate time to employ preventive discipline techniques that would curtail incidents of student infractions. On the other hand, a block schedule reduces opportunities for disruptive behavior by reducing the number of transitions in a day; consequently, longer class periods allow teachers to employ a variety of preventive behavior strategies in the classroom, creating a more conducive learning environment.

Interpersonal Relationships

In a 1997 study conducted by Eineder and Bishop, an analysis of student behavior was examined during the first year of block scheduling at Philo High School in Southeastern Ohio, and reports from the data found widespread improvement in student behavior. A chi-square test identified several significant reductions in discipline referrals,
tardy referrals, in-school suspensions, and out-of-school suspensions. A further examination found that dropouts decreased from 4.6% to 4%, average daily attendance increased from 93.7% to 94.7%, and the number of students involved in fights was reduced by 40%.

Eineder and Bishop (1997) suspected that the comprehensive improvement in student behavior was likely the result of three factors: (1) extended class periods gave teachers more time to implement proven behavior modification strategies; (2) the 4 x 4 block schedule had fewer class changes than the traditional schedule, giving students fewer opportunities to be tardy or to engage in disruptive behavior during less supervised transitions; and (3) fewer transitions and less time in hallways meant more time in the classroom where interpersonal interactions with teachers and peers could take place in a structured environment.

Eineder and Bishop (1997) also reported that more than 80% of students and 95% of teachers stated that they knew each other better using the block schedule. The extended periods of time created by block schedules not only gave teachers time to implement behavioral strategies, but also time to discover new possible causes and remedies for antisocial behavior through better understanding of the individual students’ needs (Robbins et al., 2000).

Another study, conducted in a large urban district, discovered similar nonacademic improvements resulting from operating schools using a block schedule. Deuel (1999) conducted a study that compared 10 high schools operating on a block schedule with 13 high schools operating on a seven-period rotating traditional schedule in Broward County School District in Florida. Three quarters of the teachers (75%)
indicated that extended class time provided opportunities for more individualized attention and instruction for their students. Over one-half of Broward County’s teachers (56%) agreed that “spending more time with students during class had allowed them to interact and know them better and enabled them to analyze problems of students and provide early interventions more effectively than using a traditional schedule” (Deuel, 1999, p. 22).

Utilizing a block schedule, teachers can remain on a topic long enough for students to discover stronger connections between new materials and prior knowledge, turning that new knowledge into skills (Deuel, 1999). Students have more time to develop and practice those skills in the classroom, and teachers have more time to conduct ongoing, authentic assessment than teachers who operate under a traditional schedule. Teacher and student interaction increases, while building stronger personal relationships of trust and collaboration. Eighty-four percent of the teachers in Broward County indicated that the block schedule allowed them to experiment with a variety of student evaluation techniques, including essays, projects, and peer evaluation.

**Teacher-Student Interaction**

Positive changes in the climate in schools that operate using the block schedule stem in part from an increased ability to meet the needs of the individual student (O’Neil, 1995). Block schedules generally reduce the number of students most teachers see during a given term. As a result, teachers are able to individualize instruction to address each student’s needs through smaller classes, hands-on activities, and other inquiry-based opportunities for learning.
In 1997, a study of Florida high schools, commissioned by the Florida Education Research Council, revealed that the block schedule is in place in as many as 200 Florida high schools. Few Florida high schools remain untouched by schedule revisions. According to Dow and George (1998), educators in Florida high schools with block schedules were asked to check all outcomes, from a list of 17 possible choices, which had resulted from the new schedule. Although some school leaders felt one year was too short a term for a valid study, others responded in the following manner: 63% of the respondents reported reduced discipline referrals, 65% reported increased honor roll numbers, 55% reported increased grade point averages, 55% reported increased enrollment in electives, and 60% reported more positive relationship between teachers and students.

A survey by Eineder and Bishop (1997) of teachers and students at Philo High School in Southeastern Ohio indicated 97% of the teachers and 77% of the students preferred classes under the block schedules. Thirteen percent of the students were undecided. Further examination of the reasons why teachers and students preferred block schedule versus the traditional schedule may offer hope in understanding underlying factors. Students' reasons fell into two main categories: management factors and interpersonal communication factors. Management factors, mentioned earlier, centered on the reduction in the number of classes required under the block schedule than those required under the traditional schedule. They also included fewer materials to organize, less homework, and fewer tests. Interpersonal factors were concerned with conditions within the classroom environment. The traditional schedule did not allow time to work with their peers or teacher because the length of the class period was too short. On the
other hand, extended periods of time using the block schedule allowed students to complete more assignments in class, receive more assistance from teachers, participate more frequently in activities and projects as individuals or in cooperative groups, and develop a better relationship with teachers.

Eineder and Bishop (1997) stated that teachers also listed several reasons they preferred to operate using a block schedule versus the traditional schedule. The most prevalent instructional categories centered on classroom activities, such as more variety in their lesson plans that meets the needs of students. All classroom activities mentioned referred to student-centered, inquiry-based activities, such as group projects, creative writing, and cooperative engagement learning that involved communication with teachers and peers. Teachers also developed a closer relationship with students due to the nature of structured assignments involving more interaction (Robbins et al., 2000).

Other studies also examined students' perceptions concerning their preference for block scheduling over the traditional schedule. Khazzaka (1997) randomly selected and surveyed 613 students who attended schools under both the block schedule and the traditional schedule and asked them to answer a 12-item survey to express their likes and dislikes concerning both schedules. A total of 549 students responded and indicated the top three areas of major improvement: 76% agreed that the block schedule was superior to the traditional schedule; 71% agreed that the block schedule is less stressful than the traditional one; and 94% agreed that the block schedule allows students to earn more credit than the traditional one.

In response to open-ended questions, students preferred to operate using the block schedule because they had more hands-on activities and more time for homework for
each subject (Khazzaka, 1997). Conversely, they preferred the traditional schedule as it relates to time devoted to lunch period, and the scheduling of electives and Advanced Placement (AP) courses.

Teachers were also surveyed to examine their perceptions concerning their preference for both schedules (Khazzaka, 1997). A 15-item survey was administered to all 93 teachers who taught utilizing both types of schedules. Teachers were also asked to express their likes or dislikes of the block schedule, as compared to the traditional schedule. A total of 78 teachers responded to the survey, indicating major improvement and agreed with the following: 91% agreed that they preferred to teach under the new schedule, 76% agreed that they felt less stress, and 75% agreed that they paid more individual attention to students.

In response to open-ended questions, teachers also preferred to operate using the block schedule because their teaching had become more coherent and meaningful, breaks between classes improved student attention span, they got to know their students better, they (and their students) had more time to complete school tasks, their day became less hectic and tiring, and they enjoyed the longer preparation period (Khazzaka, 1997). On the other hand, teachers expressed the negative side effects of the block schedule versus the traditional schedule concerning students and preparation. Students who left campus during the school day missed more information under the block schedule than the traditional one. Also, it is very difficult to schedule AP and other elective courses to meet the needs of the student population. It is more difficult to make up assignments using the block schedule versus the traditional schedule, especially if students have missed more than one day. Moreover, the lack of adequate professional development on preparing
teachers to modify or change their behavior relating to the use of additional instructional strategies for smaller classes was not available. Instructional activities utilized under the traditional schedule were not successful under the block schedule.

*Attendance*

One challenge concerning secondary school students is attendance. There are studies that both support and challenge improvements in attendance for schools operating using block schedules versus those schools that operate using traditional schedules. Kramer (1997) referenced literature in his study that indicate a 90% likelihood that schools switching to a block schedule will experience, on average, a change in attendance ranging between an increase of 6 days per student per year and a decrease of just under 1 day per student per year. More data are needed to draw firmer conclusions.

A study conducted by Khazzaka (1997) compared the merits of a seven-period school day using a traditional schedule to those of a four-period school day using a block schedule. The researcher noted that the overall daily attendance figures rose from 75% to 88.5% under the block schedule in the selected schools. Attendance improvements were also noted among ethnic subgroups with significant differences: the highest increase attributed to Native American females (57%), and the lowest to Hispanic males (7%) who attended schools using both schedules. The positive difference was even higher when the average attendance rates using the block schedules were compared with the attendance rate of the last 2 years using the traditional schedule. The study sample consisted of six high schools. Two of them were located in small cities, and the other four in small rural communities of the same geographic region. The schools were selected because all were
among the first in the region to switch to the block schedule and the school staff was interested in evaluating its impact on meeting annual performance standards.

Many variables may affect scheduling models, such as instructional strategies, instructional planning time, school climate, and student achievement, just to name a few (Deuel, 1999; Dexter et al., 2006; Eineder & Bishop, 1997; Gruber & Onwuegbuzie, 2001; Lockwood, 1995; Marshak, 1998a; Queen, 2000; Rettig & Canady, 1998a; Wronkovick et al., 1997). Regardless of the type schedule schools decide to chose, educational policymakers can analyze quantitative and qualitative data using current research reform initiatives to select the appropriate schedule that fits their school district needs. Atlanta Public Schools, like most urban districts, use comprehensive school reform models as one tool to continuously improve student achievement, the school climate, curriculum and instruction, and the teaching and learning process to meet performance goals. School data are analyzed and disaggregated on a constant basis to ensure that reform initiatives are making a positive impact on student success while addressing state and federal requirements to narrow the achievement gap (Thomas, 2001).

Educational Policymakers

Since the reauthorization of the Elementary and Secondary School Act of 1965, now known as No Child Left Behind Act of 2001, our nation’s focus on education has continued to amend previous statutes to address the persistent mission of educating productive citizens in a democratic society (Adams & Salvaterra, 1997). Some changes have been recommended by school districts who struggle to meet the needs of their multicultural populations, whereas others are changes that are enforced by civil and
federal cases that affect all students regardless of the demographics. Structural and programmatic changes in any organization are often unaccompanied by immediate changes in individuals, thus the effectiveness of the broader organizational changes is often limited. To accommodate changes in the restructuring of time during the traditional school day, schools and instructional leaders must redefine their view of the way time should be managed.

Educators and Change

Adams and Salvaterra (1997) have noted that under a structural change relating to extended time, teachers have more opportunities for “hands-on” instruction, Cooperative learning groups, individualized instruction, integrating technology, and flexibility in assessing what students should know and understand to master annual performance standards under the No Child Left Behind Act. Yet, in spite of the many advantages of the block schedule, one fundamental question remains, whether teachers actually changed their teaching methods or pedagogical techniques and instructional activities from those utilized using the traditional year-long 50-55 minute class period schedule from those that should be utilized using the extended semester-long 90-minute block schedule (Rettig & Canady, 1998b).

Instructional Leaders

Shortt and Thayer (1997) revisited programs and discussed factors with school leaders that will positively affect this period of transition. They suggested that instructional leaders consider the following transition factors: (1) involving staff members in the instructional decision-making process, (2) identifying instructional strategies to increase student achievement, (3) implementing pacing and curriculum
change with guides, and (4) coordinating efforts for planning effective lessons. During the initial transition and planning period and after implementation, the staff and administrators should identify particular problems that are hindering successful change or paradigm shifts, identifying schools that have been successful in addressing those needs, and arranging faculty visits to collaborate on possible solutions (Blasé & Blasé, 2000).

Shortt and Thayer (1997) recommend that schools involve as many teachers as possible, sending instructional design teams consisting of four to eight members to visit schools and report their findings to the entire staff. Although it is most effective when you choose schools with similar demographics, the focus should aim toward how teachers are utilizing the extended instructional time period using the block schedule rather than the type of block schedule that school is using.

Shortt and Thayer (1997) also suggest that school staff and administrators should identify instructional strategies that teachers need initially before conducting any visitations. As stated previously, although teachers may identify some weak areas, it is the responsibility of the primary instructional leader, the principal, to identify specific recommended strategies. Strategies may include teaching concepts rather than chapters, classroom time management, cooperative learning, small and large group instruction, student evaluation, pacing of instruction, Socratic teaching, inquiry techniques, and any other strategies related to active, engagement learning in the classroom (Blasé & Blasé, 2000).

Rather than providing training in many strategies during the initial implementation stage, instructional leadership teams may consider identifying one or two strategies that all teachers can implement during the first year of the new schedule that
may have a positive effect and concentrate on those few (Barnett, McKowen, & Bloom, 1998; Shortt & Thayer, 1997). Communication is the key to shared decision making because everyone should be clear about how strategies are utilized to maximize the instructional program. Principals should clearly communicate their expectations of what should be occurring inside the classroom (Blase & Blase, 2000). Although some principals surveyed have complained about teachers who allow students to utilize the last 30 minutes of instructional time for homework, they did not appear to have articulated to teachers how the instructional time should be used. Therefore, indicators relevant to the goals of effective implementation were not favorable when conducting classroom observations.

Canady and Rettig (1995a) stated that although teachers may not have utilized pacing guides under the traditional schedule, it is imperative that administrators provide leadership for teachers regarding this curriculum change in pace that will accommodate longer blocks of time. Encourage all teachers to articulate and align the curriculum among grade levels and departments. Teachers who teach the same courses should agree on common content to be covered and set goals for student outcomes. Pacing guides, another form of planning, ensure that teachers stay within specific timelines as they adjust to teaching under a longer class period (Canady & Rettig, 1995b; Hottenstein, 1998). Shortt and Thayer (1997) noted that teachers in Virginia and North Carolina have found the development of pacing guides to be a very helpful resource in this transitional process.

Finally, staff development should be provided to teachers in designing lesson plans that accommodate 90 minutes of instruction (Shortt & Thayer, 1997). During the
initial implementation period, school leadership should provide needed assistance to teachers and assure them that this transition is not overwhelming. Allow them to recognize the similarities and differences of lesson plans under the traditional schedule versus those lesson plans and expectations under the new block schedule. Discuss specific activities and strategies that work best under longer periods of instruction from those they have implemented by tradition. This activity should continue on a regular basis over a period of several years to further enhance teachers' toolboxes as they refine their classroom instructional strategies (Marshak, 1998b; Robbins et al., 2000).

*Teachers*

A study conducted by Adams and Salvaterra (1997) analyzed data from teacher interviews and focus groups in four secondary schools in Pennsylvania concerning a recent change to the school schedule. The schools were comprised of a public rural junior-senior high school, a parochial urban senior high school, a public suburban high school, and a public small town senior high school. Forty-five percent of teachers were interviewed individually as well as in focus groups. The interview questions focused on two specific effects from restructuring the school day from using the traditional schedule to using a block schedule. The researchers investigated (a) the effects on the curricula and pedagogy, and (b) on students of varying ability levels.

Although some teachers viewed the change to a block schedule as positive because the personal cost to them was not dramatic, others teachers did not view the change to a block schedule as favorable because the new schedule did not “fit” with techniques utilized under the “old,” traditional schedule, which had shorter periods of time (Shortt & Thayer, 1997). Teachers who favored the block stated that it was a
"perfect fit" for their content area. Classes such as business education, biology, technology/industrial arts, and foreign language enjoyed the opportunities to extend their learning periods because many students could finish projects within the prescribed class period. On the other hand, teachers who did not favor the block schedule were not successful, in particular in implementing new instructional strategies under the extended learning time. Many became frustrated and reverted back to more traditional methods that were successful using the traditional schedule. Still, other teachers expressed positive feelings toward the block, even when the schedule was not a perfect fit with the content they taught. They looked for ways to utilize the schedule to their fullest advantage. All of the aforementioned groups of teachers viewed change in the organization differently and adapted to varying degrees to the paradigm shift.

Teachers who favored using the block schedule were comfortable with innovative instructional strategies and enthusiastic about ideas that they could implement using the new extended period of time (Adams & Salvaterra, 1997). This comfort level, however, existed prior to the change. Change that necessitates only minor accommodations on the part of individuals is more easily acceptable than major changes from the customary approach of learning under the traditional schedule.

Staff Development

Cunningham and Nogle (1996) stated that staff development is one of six key components to a successful paradigm shift or transition to block scheduling. Staff development, vital for any successful program change, must address the needs of the teachers who will be implementing those components in the classroom (Sparks, 2002). Because staff development is ongoing and not a one-day in-service program, instructional
leaders should focus on identifying effective teaching strategies, as well as long- and short-term planning that will accommodate the longer period of time used by block schedules (Canady & Rettig, 1995a; Zepeda & Mayers, 2000).

Although leaders considering the opinions of teachers and students concerning effective strategies cannot be overlooked, it is the principal's responsibility as an instructional leader to provide guidance throughout this paradigm shift or change in perception, especially to teachers who will be implementing change in every classroom (Blase & Blase, 2000; Fullan, 2002; Sparks, 2002). Adams and Salvaterra (1997) noted that successful structural and program changes concerning the effective implementation of block scheduling models pose two key components: training of teachers in the block schedule and accompanying modifications in procedures and routines. Teachers who have difficulties shifting from traditional methods of content delivery will continue to utilize instructional activities that do not fit well with the new extended block period. Teacher frustration follows when previous teaching strategies and activities do not match the longer periods or semester system. This could explain the reason why no significant progress is made by some schools that operate utilizing the block schedule.

Although teachers recognize the need for staff development, they have a difficult time communicating precisely their specific needs when experiencing this level of change (Day, 2000; Fullan, 2002; Sparks, 2002). Effective instructional leaders must constantly assess their instructional program to identify the needs of individual teachers, as well as the needs of the overall school staff. Unlike the traditional schedule, block scheduling requires teachers to think differently about teaching. Teachers need educational experiences to support their understanding of the extended length of time periods, as well
as training in appropriate teaching (practices) methods that do not lend themselves to the traditional schedule with shorter periods of time (Canady & Rettig, 1995b, Hottenstein, 1998).

Sparks (2002) also suggested that school leaders should not assume that everyone needs the same training. On one hand, some teachers will be ready to begin training in differentiated instruction, whereas others are still learning the fundamentals of implementing cooperative learning groups. Effective school leaders should collect data from teacher interviews and focus groups, communicate with students, and conduct direct observations of classroom lessons to determine and plan an appropriate staff development program.

Identifying on-going staff development needs is recommended if schools are expecting to maximize the effective use of instructional time (Blasé & Blasé, 2000). Unlike other changes in a school, implementing a block schedule must be a part of a larger restructuring plan that is intended to substantially change the system. It is, therefore, imperative that instructional school leaders support this paradigm shift or change among those who will be at the forefront of the implementation process: the teachers.

Jenkins et al. (2002) surveyed more than 2,000 teachers working at schools using the traditional and block schedule and indicated that although teachers reported similar levels of appropriateness for using specific instructional strategies in their subject area, teachers believed that a given instructional strategy’s appropriateness may speak to staff development opportunities rather than the dynamics in the school or school district. Proponents of block scheduling are very clear about the essential needs for planning time
to prioritize, realign, and replace the curriculum (Canady & Rettig, 1995a; Eineder & Bishop, 1997; Khazzaka, 1997; McGorry & McGorry, 1998; Shortt & Thayer, 1997). These studies also reveal a need for continuous dialogue among teachers and administrators to maximize the potential of the block schedule for students.

Educators' Perceptions of Scheduling Practices

There were limited studies found that related to teachers' and educators' perceptions of the effectiveness of implementing a block schedule. One such limited study focused on four schools, two that had implemented block for 1 1/2 years, while the other two implemented block for only one semester. Wilson and Stokes (1999) investigated the overall effectiveness of block schedules as perceived by 1st-year and 2nd-year teachers. The study selected five related areas to compare the block schedule to the traditional based on their support of block scheduling, perceptions on increased teacher effectiveness, perceptions on increased on-task time, improved school atmosphere, and improved attitude toward school. There were no significant differences among the four schools on any of the five related areas when comparing teachers' perceptions of block scheduling to the traditional schedule.

Jenkins et al. (2002) stated that education goes beyond the basic question of whether to implement a block schedule or continue with a traditional schedule. More important are inquiries related to determining how to obtain the benefits believed to accrue from additional instructional time as well as deciding how to adequately prepare teachers for effective delivery of classroom instruction regardless of the model. Unfortunately, change will not occur because school administrators expose teachers to good ideas about classroom instruction. Teachers will not make informed decisions
concerning their instructional delivery without the culture of school districts rewarding them for change.

The message should be clear that the goal is to improve student achievement by providing teachers with appropriate instructional strategies and activities that will elevate their understanding of content. One should be realistic about the amount of time it will take teachers to adapt to a new schedule, clearly communicate expectations, provide support to teachers who struggle with this process, and provide critical feedback that causes teachers to improve their instructional craft (Sparks, 2002). Eisner (2001) stated that schools are complex institutions of learning that are difficult to change; hence, prosperous change is more likely as one recognizes and addresses the variety of interacting factors that affect the way schools function. Change will not occur in the classroom unless teachers believe that school leaders expect them to perform.

Summary

The primary goal or mission of school districts educating students to become productive citizens has not changed from the early 20th century; however, the vehicles used to assess and accomplish this goal have changed. School districts need highly trained teachers and instructional leaders who operate as professional learning communities that share the vision of educating students in a global economy (Dufour, 2002; Fullan, 2002; Sparks, 2002). Highly effective schools fulfill this mission and provide the vision of educating students regardless of race, gender, socioeconomic status, disability, religion, or sexual orientation on a daily basis. Everyone is accountable in a school district for accomplishing this goal. Custodians should assist in providing a clean environment; cafeteria and food service workers should provide nutritious meals in a
timely manner; counselors, nurses, and social workers should provide social, physical, and psychological support; and highly qualified teachers should provide engaging, rigorous lessons that meet the needs of all students causing them to become critical thinkers and problem solvers for a global economy. Additionally, instructional school leaders should provide supervision to monitor and implement the mission, while supporting the vision and removing any barriers that may hinder processes toward achieving success (Day, 2000).

After tinkering with the educational system for the last decade with different reform initiatives, educators have discovered that the daily schedule of the majority of public schools may hinder the efforts toward school improvement (Canady & Rettig, 1995b). One key factor that may play a role in determining a viable solution may be the restructuring of time.

One of the most viable solutions to many secondary schools using a traditional schedule is restructuring the instructional day by implementing a block schedule. According to Queen (2003), more schools have begun to consider the possibility of adopting block scheduling as the vehicle for providing an alternative to the traditional scheduling model to restructure the school day so that time is used more effectively. School leaders, along with the instructional transition team members, should consider the following question for evaluation: How effective is block scheduling when compared to the traditional scheduling? After reviewing the body of current and past research concerning block scheduling and its effect on achievement, discipline, and teacher perceptions, the following are perceived benefits most mentioned: (1) an increase in overall grade point averages because students are able to focused their studies due to the
decrease in the number of classes students take on a daily basis; (2) an increase in the number of Carnegie units obtained during a school year when compared to a traditional schedule; (3) longer class periods (time) that support more depth of knowledge, instructional strategies, and interaction; (4) a decrease in the amount of discipline problems because there is less interaction between students during the school day; and (5) positive teacher perceptions of block scheduling due to teaching fewer students daily, having more instructional planning time, and having more teacher-student interactions (Canady & Rettig, 1995a; Deuel, 1999; Dexter et al., 2006; Eineder & Bishop, 1997; Gruber & Onwuegbuzie, 2001, Marshak, 1998a; Queen, 2000; Rettig & Canady, 1997; Robbins et al., 2000; Soares, 1998; Wronkovick et al., 1997).

There were also some perceived disadvantages found through the review of related literature that include, but are not limited to the following: (1) no clear significant difference in student achievement based on standardized test scores; although grade point average increased, students’ national and state scores did not show any significant difference from students who operated using a traditional schedule; (2) the use of instructional practices that are more conducive under a traditional schedule, such as lecturing, were used with no significant positive results affecting the classroom environment; (3) a decrease in the amount of instructional time during the school year; (4) students with attendance problems missed more instructional time due to the length and pacing of block coursework; and (5) teachers who were not adequately trained to teach during an extended length of time did not vary their instructional delivery methods to accommodate a different schedule. The perceived advantages and disadvantages have
even greater importance for urban school students (Anyon, 1997; Darling-Hammond, 2005; Delpit, 1988; Szenete, 2006; Tyack, 1974).

Most of the research examining urban students, teachers, and administrators was limited; especially regarding how block scheduling affects urban students who are from predominately African American and Hispanic backgrounds. There is growing ethnic, racial, linguistic, and diverse socioeconomic demographics with the urban school districts' school population (Anyon, 1997; Delpit, 1988; Tyack, 1974). As such, there is a need to collaborate on scheduling options or models that meet the needs of urban students while maximizing the instructional program to increase student achievement. As we evaluate reform initiatives to determine their effectiveness, it is imperative to examine the context of implementing the restructuring of time as a paradigm shift of educators' perceptions, self-reflecting on instructional practices that meet the needs of all students, especially urban students. Many of these instructional practices emerge as a consequence of transformational leaders seeking to close the achievement gaps based on federal, state, and local performance goals (Gandara, 2000). Initiatives such as block schedules have proven to be one means of restructuring time more effectively (Queen, 2003). With more initiatives being considered daily to increase effectiveness, more schools may adopt an extended schedule, possibly making the traditional schedule obsolete. But before all of this can happen, there is a need to conduct further research on the long-term effects of block scheduling on achievement, especially between and among students with different backgrounds and ability levels.

Bevevino, Snodgrass, Adams, and Dengel (1999) stated that stakeholders in a school district should consider the following points of view as they begin discussions
concerning change: (1) Administrators and teachers need time to learn about the block schedule and develop instructional approaches best suited to their districts; (2) staff development is crucial to the success of the extended block schedule; (3) preliminary planning is needed to include the formation of additional course offerings designed to take students to higher levels of learning beyond the current expectations; and (4) parents and students need to be involved in planning before the implementation of extend blocks.

Districts that attempt to change to an extended block format without allowing time and training for teachers may be paving the way for failure. Any reinvention of time should be made carefully and with the input of all stakeholders in a school district: administrators, teachers, students, and parents (Wilson & Stokes, 1999). Then our own enthusiasm, the willingness of teachers to reevaluate curriculum and to include new approaches to learning, the provision for time for staff development, and community support can pave the way for a successful move to the extended block schedule.
CHAPTER III METHODOLOGY

Introduction

The purposes of this study were as follows: (a) to examine the perceptions of selected Atlanta public middle and high school teachers regarding block scheduling, and (b) to examine whether achievement data for selected Atlanta public middle and high schools differed when comparing those schools during the time frame that block scheduling was in place and after block scheduling was discontinued.

Believing that students benefit from a restructuring of time, many school districts across the nation, including Atlanta public schools, have begun experimenting with modifications to the instructional day. Block scheduling was utilized as a type of school reform in the Atlanta middle schools from school year 1995-1996 to school year 1999-2000, and was then replaced with traditional scheduling. Conversely, Atlanta high schools used a traditional scheduling model from school year 1995-1996 to school year 1999-2000, and then switched to block scheduling from school year 2000-2001 to school year 2004-2005. Currently, middle schools operate under a traditional schedule and high schools operate under the block schedule. Proponents of block scheduling claim that there are many benefits to having longer time blocks of teaching and learning (Canady & Rettig, 1995a; Robbins et al., 2000; Soares, 1998).
This chapter provides information on the methods used to complete the study. The following sections are included in this chapter: (a) research questions, (b) research hypotheses, (c) researcher positionality, (d) research design, (e) population and subjects, (f) data collection, (g) instrumentation, and (h) data analysis.

Research Questions

Qualitative Research Questions

1. What strengths will teachers identify that characterize schools that operate under the block schedule?

2. What weaknesses will teachers identify that characterize schools that operate under the block schedule?

3. What themes will emerge from focus group interviews regarding scheduling models and their impact on achievement and climate?

Quantitative Research Questions

1. Will Atlanta public schools middle and high school teachers' perceptions differ regarding the impact of block scheduling?

2. Were there any differences in the achievement data at the middle and high school levels when Atlanta public schools used or did not use block scheduling?

Hypotheses

1. There will be no significant difference in perceptions concerning the impact of block scheduling in selected Atlanta public middle and high schools when comparing middle school teachers and high school teachers.

2. There will be no significant difference in achievement in selected Atlanta public middle schools that operated on a block scheduling model during the 1999-2000
school year versus those Atlanta public middle schools that operated under a traditional scheduling model during school year 2000-2001 to school year 2005-2006.

3. There will be no significant difference in achievement in selected Atlanta public high schools that operated on a traditional scheduling model during the 1999-2000 school year versus those Atlanta public high schools that operated under a block scheduling model during school year 2000-2001 to school year 2005-2006.

Researcher Positionality

I have been interested in the impact that instructional time has on student achievement since I first became acquainted with Georgia high schools, which operated on schedules containing class periods longer than the traditional 50 to 55 minutes per period day. I served as a high school mathematics teacher from 1987 to 1998, and a mathematics specialist, or model teacher, for the Atlanta Public Schools district since 1998. At the district level, I had knowledge of other schools within the district that operated on a schedule other than the traditional schedule from the high school where I taught. I was curious about the impact that the schedule of instructional time had on student achievement and discipline referrals of students who transferred to other schools that operated on a different schedule.

As a district mathematics support person, I was also assigned to middle schools. Many students must make additional adjustments in the transition from middle school to high school, with students being introduced to an entirely new length of instructional time. I was curious about the differences.
Research Design

The research design for this study was a mixed method design. Both quantitative and qualitative measures were employed to examine the research questions and hypotheses.

Qualitative methods included conducting two focus groups. One group included seven middle school teachers from various middle schools throughout the district. The other group consisted of 12 teachers from the 10 high schools.

Quantitative methods included gathering data from a researcher-developed questionnaire, gathering data from archival sources, and conducting analysis of variance to determine significance differences.

Population and Sampling Procedure

The Atlanta Public School System has 16 middle schools and 10 high schools. The study population consisted of all middle and high school teachers within this system who had at least 5 years of experience and who had taught under both a traditional and block scheduling model. The participants for the quantitative phase were all sample 346 middle and high school teachers who had been continuously employed at the middle and high school level for the 7-year period from 1999-2000 to 2005-2006. The participants for the qualitative phase of the study (focus groups) were a purposive sample of one middle and high school teacher from six different middle schools and eight different high schools.

Data Collection

The first method of data collection involved collecting qualitative data from two focus groups. These focus groups consisted of one small group of middle school teachers
and one small group of high school teachers. Teacher participation involved informal group interview sessions that lasted approximately 45-60 minutes. The focus group sessions were taped using audio equipment to assist the researcher with documentation of the discussion topics. The tapes were transcribed, changing all personal information related to the participants so they could not be identified. The tapes were kept in a locked cabinet (secure area), and only the researcher had access. After the transcriptions and the research were completed, the researcher destroyed the tapes.

The second data-collection method involved teachers completing a researcher-developed survey that took 20-25 minutes. All surveys were completed and collected during faculty meetings. This researcher-developed questionnaire or survey (Appendix A) was validated and tested for reliability through a pilot study with a group of 50 teachers. This pilot study was conducted during the fall of 2003 as a requirement of a research course, BER 603: Survey Research Methods. For the current study, the survey involved each teacher completing background information and answering a 24-item survey exploring the impact that block scheduling may have on student achievement and school discipline. Each participant was informed that they were participating on a voluntary basis. Participants could choose not to answer any questions that made them feel uncomfortable and could choose to discontinue participation at any time. All information provided was confidential, and participants choosing to complete the survey were consenting to be a research participant (Appendix B).

The final method involved collecting and analyzing archival achievement data from all 16 middle and 10 high schools within the district. The data represent achievement records from school year 1999-2000 to school year 2005-2006.
Achievement data examined the math and language arts scores on the GCRCT for middle school eighth graders and the GHSGT for high school 11th graders. The researcher collected achievement records representing school years 1999-2000 to 2005-2006 from the Georgia DOE and the Atlanta Public Schools’ Department of Research, Planning, and Accountability (RPA).

Instrumentation

The researcher relied on focus group questions and a researcher-developed questionnaire. The following sections describe the two instruments.

Focus Group Questions

Focus group questions were developed based on the component dimensions identified by each factor. Each focus group was asked to respond to the following questions (Appendix C):

1. What are your impressions of the block scheduling format?
2. Did your instructional methods and/or practices change when you used the block? If so, in what way(s)?
3. To what extent, if any, do you feel that you and your students have benefited interpersonally from using block scheduling?
4. To what extent, if any, do you feel that your students have benefited academically from using block schedules?
5. If given the opportunity, what would you change about your schedule?

Researcher-Developed Survey

A researcher-developed questionnaire or survey (Appendix A) was piloted with a selected group of 50 teachers during the fall of 2003. This pilot survey assisted in
establishing its content validity and reliability. The instrument was scored utilizing SPSS data analysis software (Version 15.0) to analyze results.

Cronbach’s alpha was utilized to determine the reliability of the survey items. Item-to-total correlation was used to test the strength of each item and to eliminate any item with .30 or less correlation. Item-to-total correlation measures the relationship of individual test items to the composite score. If a correlation is less than .30 (low), it means that the item is not measuring what the other items of the test are attempting to measure. A factor analysis and varimax rotation allowed the gathering of data into principal components sorted by size.

This instrument has a reliability coefficient using Cronbach’s alpha of 0.94. The initial instrument consisted of 27 items. Three items were dropped because their item-to-total correlation was less than 0.30. After dropping items with low item-to-total correlations, Items 10, 11, and 27, the revised instrument consisted of 24 items with a Cronbach’s alpha coefficient of 0.95. Of the 24 items left, the range of the lowest item-total correction was 0.42 and the highest item-total correlation was 0.86. This finding suggested that most of the items made a significant contribution to the total instrument. High item-to-total correlations not only supported the reliability of the instrument, but also documented validity in that the items are measuring the same theoretical construct. The standard error of measurement was found to be 2.87.

The survey responses were subjected to an exploratory factor analysis using principal component analysis with a varimax and orthogonal rotation. Factor analysis provided tools needed to define the underlying dimensions of variables in construct validity. Twenty-four factors were extracted with an eigenvalue of 1.00 or greater. The
first factor explained 51.94% of the variance, with four factors explaining 70.84% of the variance.

After examining the principal components solution, a four-factor solution was retained, which provided the best simple structure. These loadings were all above .45, which presented evidence to the construct validity for the instrument. The underlying dimensions identified by each factor are as follows: (I) Classroom Instruction; (II) Student-Teacher Interaction; (III) Student Achievement; and (IV) Teacher Perception.

The 24-item survey was scored using a 4-point Likert-type scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). Total scores can range from 24 to 96 points. Lower scores indicate an unfavorable response toward block scheduling. Higher scores indicate a favorable response toward block scheduling.

In addition to yielding a total score, the instrument also provides four subscale, or component, scores. Possible scores for the first subscale, Classroom Instruction, may range from 9 to 36. Possible ranges for the other subscales are as follows: (a) Student-Teacher Interaction, 8 – 32; (b) Student Achievement, 5 – 20; and (c) Teacher Perception, 2 – 8. The dependent variable was the subscale scores for each of the four components. A multivariate analysis of variance (MANOVA) was conducted to determine if differences existed among the four component areas when comparing the responses of middle and high school teachers.

Data Analysis Methods

Qualitative data analysis was accomplished through the determination of emerging themes or factors from the focus group interviews to address Research
Questions 1 through 3. The researcher initiated the discussions by asking middle and high school teachers to respond to four or five structured “guiding” questions.

Focus group discussions were audio taped to allow the researcher the opportunity to accurately record data at a later date. All information that identified any person was changed using a coding system (Bogdan & Biklen, 2003, Creswell, 2003). Qualitative data were recorded and transcribed. Broad descriptions were developed based on transcribed data notes. The tapes were kept in a locked cabinet (secure area), and only the researcher had access. The tapes were destroyed after the research was complete.

A MANOVA was used to test Hypothesis 1. Middle and high school teachers’ mean scores for each component dimension were analyzed to determine differences in teachers’ perceptions between the two groups. Analysis of the quantitative data was accomplished through the use of four one-way ANOVAs to test Hypothesis 2 and Hypothesis 3. The researcher also examined the mean achievement data, comparing the time frame during which block scheduling was in place and the time frame during which block scheduling was discontinued.
CHAPTER IV
DATA ANALYSIS AND RESULTS

Introduction

The purposes of this study were as follows: (a) to examine the perceptions of selected Atlanta public middle and high school teachers’ perceptions regarding block scheduling, and (b) to examine whether achievement data for selected Atlanta public middle and high schools differ when comparing those schools during the time frame that block scheduling was in place and after block scheduling was discontinued. Focus group questions, a survey, and archival data served as instruments for data collection and analysis for this study. Chapter IV includes a description of the study participants, analysis of qualitative research questions, test of hypotheses, analysis of hypotheses, and summary.

Study Participants

The participants in the focus groups consisted of 7 middle school teachers and 12 high school teachers with at least 10 years of experience. All (100%) middle school teachers were female, whereas the high school teachers consisted on 10 (83.33%) females and 2 (16.67%) males. Additionally, all (100%) participants were African American with a master’s degree or higher.

Surveys were sent to Atlanta public middle and high principals asking them to distribute the survey to selected teachers who met the criteria. Each principal was also given a copy of the survey participant letter (Appendix B) and a permission letter from
the school district as verification of approval to conduct the survey within each participating schools. Teachers were selected who had taught under both the traditional and block scheduling format with at least 5 years of experience. Middle and high school teachers were selected to be included in the study based on data retrieved from the human resources department. Three hundred forty-six surveys were sent to principals, and a total of 275 were returned, resulting in a response rate of 79.5%. A high response rate may be attributed to follow-up procedures in which the researcher emailed, phoned, and met with school principals to ensure that surveys were distributed and collected.

The data indicated that 182 (66.2%) of the 275 teachers surveyed were female, whereas the remaining 93 (33.8%) were male. There were 113 (41.1%) novice teachers with less than 10 years of experience. Of the remaining teachers, 87 (31.6%) had 10 to 20 years of experience and 75 (27.3%) were veteran teachers with over 20 years of experience. In regard to teaching level, 143 (48%) were high school teachers, which was slightly greater than the 132 (52%) middle school teachers surveyed.

Analysis of Qualitative Research Questions

Analysis of the qualitative research questions was accomplished through the use of two focus group discussions. Data were gathered and analyzed through an examination of perceptions of middle and high school teachers’ experiences with block scheduling through the use of five open-ended discussion questions. The researcher used audiotapes and transcribed notes to record the discussion that took place during each focus group session. The following questions were used to examine teachers’ perceptions of block scheduling, identify strengths and weaknesses of block scheduling, and document
emerging themes that were determined during the discussion format based on the five open-ended questions.

*Qualitative Research Questions*

1. What strengths will teachers identify that characterize schools that operate under the block schedule?

Although the perceptions of middle and high school teachers differed mainly in two areas—teachers’ perceptions of their current teaching schedule and student achievement—all teachers agreed on and characterized strengths of schools that operated under the block schedule in the following manner:

(a) Allows more time for individualized attention to students than a traditional schedule.

(b) Allow students to complete more assignments because they have fewer classes to focus on.

(c) Allows more time to complete labs and class projects.

(d) Allows for a greater variety of activities.

(e) Allow students more opportunities to ask questions and receive feedback.

(f) Allow students to increase the number of credits earned during a school year over what the traditional schedule allows.

(g) Allows an increase in student-teacher interaction and interpersonal relationships with students

The aforementioned strengths were identified from data gathered from the surveys taken by middle and high school teachers, as well as from the two focus group
discussions. The researcher identified items on the survey that indicated that over 70% of teachers agreed or strongly agreed on the component areas.

2. What weaknesses will teachers identify that characterize schools that operate under the block schedule?

Weaknesses identified by middle and high school teachers differed mainly in two areas: teachers’ perceptions of their current teaching schedule and student achievement. During the focus group discussion sessions, 100% of the middle school teachers favored changing the current traditional schedule and returning to the block schedule. On the other hand, only 25% of the high school teacher favored changing the current block schedule. Seventy-five percent favored the block schedule and did not want any changes. Although middle and high school teachers favored the block schedule, there were some areas of need identified.

Teachers characterized and summarized weaknesses of schools that operated under the block schedule in the following manner:

(a) More professional development is needed to assist teachers on planning and implementing different instructional strategies.

(b) Students who transfer from different schools that are not under the block have problems adjusting to a different schedule.

(c) Students who are absent miss a substantial amount of instruction and are more likely to have problems completing assignments.

(d) Inexperienced teachers have problems planning and implementing lessons under the block schedule during the extended time period.
(e) Less instructional time under the block schedule than the traditional schedule. The pace is too fast.

(f) Block scheduling does not decrease the amount of paperwork.

(g) Students become bored and less attentive with longer class periods, especially lecturing.

The areas of weakness mentioned identified data gathered from the surveys taken by middle and high school teachers, as well as, the two focus group discussions. The researcher identified items on the survey that indicated that over 40% of teachers disagreed or strongly disagreed on the component areas.

3. What themes will emerge from focus group interviews regarding scheduling models and their impact on achievement and discipline?

Transcriptions of the focus group discussion for middle and high school teachers appear in Appendixes E and F. There were five themes that emerged from the focus groups: (1) teacher perception of block scheduling, (2) class instruction, (3) student-teacher interaction, (4) student achievement, and (5) teacher perception of current schedule. The perceptions of middle and high school teachers differed in two areas: teachers’ perceptions of their current teaching schedule, and student achievement. Whereas all seven (100%) of the middle school teachers indicated they would like to change their current traditional schedule and return to the block schedule, only three of the 12 (25%) high school teachers indicated they would like to change their current block schedule and return to the traditional schedule. Additionally, only six (50%) of the 12 high school teachers believed that block scheduling had a positive impact on student achievement, whereas all seven (100%) middle school teachers believed that block
scheduling had a positive impact on student achievement. In all other emerging themes, middle and high school teachers were consistent in their responses. Tables 2 and 3 indicate the themes that emerged from discussions with middle school and high school teachers.

Test of Hypotheses

Hypothesis 1 for this study was tested through the use of MANOVA, and Hypotheses 2 and 3 were tested through the use of ANOVA. A significance level of .05 was used to determine whether differences existed between groups. The data related to Hypothesis 1 was collected from the researcher-developed survey. The data related to Hypotheses 2 and 3 were collected from archived state achievement test data from school year 1999-2000 to 2005-06. Tables 4 and 5 show mean scores of middle school English/language arts and mathematics test data related to the eighth grade CRCT, whereas Tables 6 and 7 show mean scores of high school English/language arts and mathematics test data related to the 11th grade GHSGT.
Table 2

*Themes from Middle School Teachers*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Carol</th>
<th>Moore</th>
<th>Mary</th>
<th>Dunn</th>
<th>Heather</th>
<th>*Elizabeth</th>
<th>*Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teacher Perception of Block Scheduling</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2. Class Instruction</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3. Student-Teacher Interaction</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4. Student Achievement</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5. Teacher Perception of Current Schedule</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

*Note.* * = did not respond to first question due to late arrival. X indicates teachers are in favor or agree with the theme.
Table 3

*Themes from High School Teachers*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Ray</th>
<th>Kale</th>
<th>Sears</th>
<th>Cope</th>
<th>Dee</th>
<th>Mori</th>
<th>Bo</th>
<th>Tone</th>
<th>Row</th>
<th>Carl</th>
<th>Renee</th>
<th>Cole</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teacher Perception of Block Scheduling</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2. Class Instruction</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3. Student-Teacher Interaction</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4. Student Achievement</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5. Teacher Perception of Current Schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* X indicates teachers are in favor or agree with the theme.
## Table 4

*Middle School English/Language Arts GCRCT Mean Test Scores for School Years 1999-2000 to 2005-06*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha MS</td>
<td>**</td>
<td>**</td>
<td>61</td>
<td>67</td>
<td>71</td>
<td>77</td>
<td>81</td>
</tr>
<tr>
<td>2</td>
<td>54</td>
<td>63</td>
<td>57</td>
<td>71</td>
<td>81</td>
<td>75</td>
<td>84</td>
</tr>
<tr>
<td>3</td>
<td>41</td>
<td>40</td>
<td>44</td>
<td>56</td>
<td>56</td>
<td>64</td>
<td>60</td>
</tr>
<tr>
<td>4</td>
<td>46</td>
<td>49</td>
<td>49</td>
<td>56</td>
<td>63</td>
<td>64</td>
<td>66</td>
</tr>
<tr>
<td>5</td>
<td>48</td>
<td>52</td>
<td>60</td>
<td>54</td>
<td>59</td>
<td>56</td>
<td>71</td>
</tr>
<tr>
<td>6</td>
<td>85</td>
<td>89</td>
<td>83</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>94</td>
</tr>
<tr>
<td>7</td>
<td>29</td>
<td>41</td>
<td>41</td>
<td>50</td>
<td>61</td>
<td>63</td>
<td>68</td>
</tr>
<tr>
<td>8</td>
<td>35</td>
<td>44</td>
<td>52</td>
<td>49</td>
<td>59</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>9</td>
<td>36</td>
<td>45</td>
<td>38</td>
<td>50</td>
<td>68</td>
<td>66</td>
<td>69</td>
</tr>
<tr>
<td>10</td>
<td>34</td>
<td>31</td>
<td>48</td>
<td>54</td>
<td>56</td>
<td>54</td>
<td>81</td>
</tr>
<tr>
<td>11</td>
<td>37</td>
<td>47</td>
<td>46</td>
<td>53</td>
<td>59</td>
<td>69</td>
<td>77</td>
</tr>
<tr>
<td>12</td>
<td>64</td>
<td>72</td>
<td>70</td>
<td>68</td>
<td>68</td>
<td>75</td>
<td>86</td>
</tr>
<tr>
<td>13</td>
<td>35</td>
<td>44</td>
<td>49</td>
<td>72</td>
<td>77</td>
<td>71</td>
<td>80</td>
</tr>
<tr>
<td>14</td>
<td>40</td>
<td>36</td>
<td>51</td>
<td>46</td>
<td>67</td>
<td>62</td>
<td>71</td>
</tr>
<tr>
<td>15</td>
<td>42</td>
<td>65</td>
<td>61</td>
<td>59</td>
<td>74</td>
<td>88</td>
<td>77</td>
</tr>
<tr>
<td>16</td>
<td>63</td>
<td>63</td>
<td>69</td>
<td>73</td>
<td>79</td>
<td>79</td>
<td>87</td>
</tr>
</tbody>
</table>
Table 5

Middle School Mathematics GCRCT Mean Test Scores for School Years 1999-2000 to 2005-06

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha MS</td>
<td>**</td>
<td>**</td>
<td>54</td>
<td>50</td>
<td>53</td>
<td>47</td>
<td>81</td>
</tr>
<tr>
<td>2</td>
<td>36</td>
<td>49</td>
<td>50</td>
<td>57</td>
<td>67</td>
<td>76</td>
<td>73</td>
</tr>
<tr>
<td>3</td>
<td>28</td>
<td>27</td>
<td>31</td>
<td>32</td>
<td>32</td>
<td>31</td>
<td>41</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>41</td>
<td>38</td>
<td>39</td>
<td>49</td>
<td>35</td>
<td>52</td>
</tr>
<tr>
<td>5</td>
<td>37</td>
<td>40</td>
<td>49</td>
<td>27</td>
<td>43</td>
<td>33</td>
<td>46</td>
</tr>
<tr>
<td>6</td>
<td>76</td>
<td>82</td>
<td>80</td>
<td>75</td>
<td>86</td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>7</td>
<td>12</td>
<td>22</td>
<td>30</td>
<td>29</td>
<td>31</td>
<td>26</td>
<td>39</td>
</tr>
<tr>
<td>8</td>
<td>25</td>
<td>34</td>
<td>47</td>
<td>42</td>
<td>50</td>
<td>41</td>
<td>54</td>
</tr>
<tr>
<td>9</td>
<td>32</td>
<td>42</td>
<td>25</td>
<td>37</td>
<td>48</td>
<td>41</td>
<td>43</td>
</tr>
<tr>
<td>10</td>
<td>21</td>
<td>19</td>
<td>43</td>
<td>46</td>
<td>37</td>
<td>24</td>
<td>86</td>
</tr>
<tr>
<td>11</td>
<td>38</td>
<td>34</td>
<td>43</td>
<td>34</td>
<td>40</td>
<td>43</td>
<td>50</td>
</tr>
<tr>
<td>12</td>
<td>47</td>
<td>62</td>
<td>66</td>
<td>62</td>
<td>56</td>
<td>69</td>
<td>50</td>
</tr>
<tr>
<td>13</td>
<td>21</td>
<td>35</td>
<td>38</td>
<td>42</td>
<td>64</td>
<td>52</td>
<td>75</td>
</tr>
<tr>
<td>14</td>
<td>24</td>
<td>31</td>
<td>37</td>
<td>34</td>
<td>67</td>
<td>49</td>
<td>64</td>
</tr>
<tr>
<td>15</td>
<td>34</td>
<td>43</td>
<td>50</td>
<td>50</td>
<td>55</td>
<td>63</td>
<td>62</td>
</tr>
<tr>
<td>16</td>
<td>57</td>
<td>53</td>
<td>62</td>
<td>61</td>
<td>68</td>
<td>66</td>
<td>62</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Alpha HS</td>
<td>71</td>
<td>78</td>
<td>76</td>
<td>79</td>
<td>66</td>
<td>88</td>
<td>89</td>
</tr>
<tr>
<td>2</td>
<td>82</td>
<td>86</td>
<td>76</td>
<td>91</td>
<td>82</td>
<td>96</td>
<td>64</td>
</tr>
<tr>
<td>3</td>
<td>91</td>
<td>89</td>
<td>92</td>
<td>94</td>
<td>90</td>
<td>91</td>
<td>92</td>
</tr>
<tr>
<td>4</td>
<td>92</td>
<td>98</td>
<td>96</td>
<td>98</td>
<td>95</td>
<td>97</td>
<td>96</td>
</tr>
<tr>
<td>5</td>
<td>96</td>
<td>98</td>
<td>99</td>
<td>95</td>
<td>95</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>6</td>
<td>93</td>
<td>94</td>
<td>95</td>
<td>95</td>
<td>94</td>
<td>96</td>
<td>94</td>
</tr>
<tr>
<td>7</td>
<td>88</td>
<td>86</td>
<td>84</td>
<td>91</td>
<td>89</td>
<td>95</td>
<td>97</td>
</tr>
<tr>
<td>8</td>
<td>90</td>
<td>88</td>
<td>91</td>
<td>90</td>
<td>89</td>
<td>92</td>
<td>92</td>
</tr>
<tr>
<td>9</td>
<td>88</td>
<td>91</td>
<td>91</td>
<td>86</td>
<td>83</td>
<td>85</td>
<td>94</td>
</tr>
<tr>
<td>10</td>
<td>80</td>
<td>87</td>
<td>90</td>
<td>89</td>
<td>85</td>
<td>90</td>
<td>89</td>
</tr>
<tr>
<td>-------------</td>
<td>--------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Alpha HS</td>
<td></td>
<td>69</td>
<td>64</td>
<td>61</td>
<td>57</td>
<td>80</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>69</td>
<td>76</td>
<td>87</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>87</td>
<td>81</td>
<td>90</td>
<td>96</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>90</td>
<td>91</td>
<td>86</td>
<td>87</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>92</td>
<td>92</td>
<td>88</td>
<td>87</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>93</td>
<td>96</td>
<td>91</td>
<td>91</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>93</td>
<td>93</td>
<td>88</td>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>83</td>
<td>93</td>
<td>87</td>
<td>96</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>86</td>
<td>83</td>
<td>76</td>
<td>79</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>86</td>
<td>88</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>
Analysis of Hypotheses

Hypothesis 1

There will be no significant difference in perceptions concerning the impact of block scheduling in selected Atlanta public middle and high schools when comparing middle school teachers and high school teachers.

An independent samples t test was used to determine differences in the total mean scores of middle and high school teachers, and MANOVA was used to determine differences between the subscale component areas. Table 8 provides a summary of the mean scores and standard deviations for the four component areas by teaching level.

Table 8

Means and Standard Deviation of Components by Teaching Levels

<table>
<thead>
<tr>
<th>Factors</th>
<th>Middle (n = 132)</th>
<th>High (n = 143)</th>
<th>Total (n = 275)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Interaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28.076</td>
<td>27.014</td>
<td>27.524</td>
</tr>
<tr>
<td>Student-Teacher</td>
<td>22.591</td>
<td>22.238</td>
<td>22.407</td>
</tr>
<tr>
<td>Interaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Achievement</td>
<td>14.606</td>
<td>14.238</td>
<td>14.415</td>
</tr>
<tr>
<td>Teacher Perceptions</td>
<td>5.030</td>
<td>4.944</td>
<td>4.986</td>
</tr>
</tbody>
</table>
The first analysis was an independent samples \( t \) test to compare middle and high school teachers’ scores on the total instrument. The results showed no significant difference, \( t(273) = 1.05, p = .295 \). Therefore, the null hypothesis failed to be rejected. The total mean scores of teacher perceptions toward block schedules were as follows: (a) middle school teachers \((M = 70.30, SD = 13.58)\) and (b) high school teachers \((M = 68.43, \ SD = 15.76)\).

A MANOVA was conducted to determine if differences existed between the four component factors: Classroom Instruction, Student-Teacher Interaction, Student Achievement, and Teacher Perceptions. The dependent variable was the mean subscale scores from each component. The independent variable was teaching level. A Wilks’ Lambda test indicated no significant difference, \( F(4, 270) = .912, p > .05 \), across the four component areas as shown in Table 9.

Table 9

Univariate \( F \) Tests Across Component Areas

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Multivariate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( SS )</td>
</tr>
<tr>
<td>Univariate</td>
<td></td>
</tr>
<tr>
<td>Classroom Interaction</td>
<td>77.38</td>
</tr>
<tr>
<td>Student-Teacher Interaction</td>
<td>8.53</td>
</tr>
<tr>
<td>Student Achievement</td>
<td>9.31</td>
</tr>
<tr>
<td>Teacher Perceptions</td>
<td>.51</td>
</tr>
</tbody>
</table>
Hypothesis 2

There will be no significant difference in achievement in selected Atlanta public middle schools that operated on a block scheduling model during the 1999-2000 school year versus those Atlanta public middle schools that operated under a traditional scheduling model during school year 2000-2001 through school year 2005-2006.

A one-way ANOVA was used to compare differences in achievement between middle schools operating using block scheduling during the 1999-2000 school year versus those that operated under a traditional schedule during school year 2000-2001 through school year 2005-2006, as shown in Tables 10 and 11.

Table 10

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>11185.42</td>
<td>6</td>
<td>1864.24</td>
<td>12.75</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>15063.68</td>
<td>103</td>
<td>146.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>26249.10</td>
<td>109</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There were significant differences in achievement found between middle schools operating on a block schedule from those middle schools operating on a traditional schedule. Shown in Table 10, the differences occurred in middle school achievement in English/language arts scores, $F(6,103) = 12.746$, $p > .000$, and in Table 7, mathematics scores $F(6,103) = 4.248$, $p > .001$. 
Table 11

Analysis of Variance of Achievement in Middle School Mathematics

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>6261.23</td>
<td>6</td>
<td>1043.54</td>
<td>4.25</td>
<td>.001</td>
</tr>
<tr>
<td>Within Groups</td>
<td>25302.37</td>
<td>103</td>
<td>245.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>26249.10</td>
<td>109</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 12 illustrates the sample sizes, means, and standard deviation of middle school English/language arts scores between school years 1999-2000 through 2005-2006.

Table 12

Sample Sizes, Means, and Standard Deviations of Middle School English/Language Arts Scores

<table>
<thead>
<tr>
<th>School Year</th>
<th>Sample Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000 (B)</td>
<td>15</td>
<td>45.93</td>
<td>14.964</td>
</tr>
<tr>
<td>2000-2001 (T)</td>
<td>15</td>
<td>52.07</td>
<td>15.476</td>
</tr>
<tr>
<td>2001-2002 (T)</td>
<td>16</td>
<td>54.94</td>
<td>11.941</td>
</tr>
<tr>
<td>2002-2003 (T)</td>
<td>16</td>
<td>60.00</td>
<td>10.997</td>
</tr>
<tr>
<td>2003-2004 (T)</td>
<td>16</td>
<td>68.19</td>
<td>10.477</td>
</tr>
<tr>
<td>2004-2005 (T)</td>
<td>16</td>
<td>69.75</td>
<td>10.915</td>
</tr>
<tr>
<td>2005-2006 (T)</td>
<td>16</td>
<td>76.69</td>
<td>8.905</td>
</tr>
</tbody>
</table>

Note. B = block, T = traditional.
Additionally, Table 13 illustrates the sample sizes, means, and standard deviations of middle school mathematics scores between school years 1999-2000 and 2005-2006. Post hoc Tukey-HSD tests show significant differences between the 1999-2000 school year and school years 2002-2003, 2003-2004, 2004-2005, and 2005-2006. The average mean scores between English/language arts scores in middle schools operating under the traditional schedule during school year 2002-2003 through school year 2005-2006 were higher than mean scores in middle schools operating under the block schedule during the 1999-2000 school year.

Table 13

Sample Sizes, Means, and Standard Deviations of Middle School Mathematics Scores

<table>
<thead>
<tr>
<th>School year</th>
<th>Sample Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000 (B)</td>
<td>15</td>
<td>34.93</td>
<td>15.868</td>
</tr>
<tr>
<td>2000-2001 (T)</td>
<td>15</td>
<td>40.93</td>
<td>16.060</td>
</tr>
<tr>
<td>2001-2002 (T)</td>
<td>16</td>
<td>46.44</td>
<td>14.292</td>
</tr>
<tr>
<td>2002-2003 (T)</td>
<td>16</td>
<td>44.81</td>
<td>13.536</td>
</tr>
<tr>
<td>2003-2004 (T)</td>
<td>16</td>
<td>52.88</td>
<td>14.921</td>
</tr>
<tr>
<td>2004-2005 (T)</td>
<td>16</td>
<td>48.94</td>
<td>18.556</td>
</tr>
<tr>
<td>2005-2006 (T)</td>
<td>16</td>
<td>60.31</td>
<td>16.020</td>
</tr>
</tbody>
</table>

Note. B = block, T = traditional.

Post hoc Tukey-HSD tests also show significant differences between the 1999-2000 school year and school years 2003-2004 and 2005-2006 in mathematics. The
average mean scores between mathematics scores in middle schools operating under the traditional schedule during school years 2003-2004 and school year 2005-2006 were higher than mean scores in middle schools operating under the block schedule during the 1999-2000 school year.

Hypothesis 3

There will be no significant difference in achievement in selected Atlanta public high schools that operated under a traditional scheduling model during the 1999-2000 school year versus those Atlanta public high schools that operated under a block scheduling model during school year 2000-2001 through school year 2005-2006.

A one-way ANOVA was used to compare differences in achievement between high schools operating using traditional scheduling during the 1999-2000 school year versus those that operated under a block schedule during school year 2002-2001 through school year 2005-2006, as shown in Tables 14 and 15.

Table 14

*Analysis of Variance of Achievement in High School English/Language Arts*

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>252.17</td>
<td>6</td>
<td>42.03</td>
<td>.796</td>
<td>.577</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3327.10</td>
<td>63</td>
<td>52.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3579.27</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
There were no significant differences found concerning achievement in high schools operating on a block schedule from those high schools operating on a traditional schedule in English/language arts scores, $F(6,63) = .796, p > .577$, shown in Table 14, and mathematics scores, $F(6,63) = .235, p > .963$, shown in Table 15.

Table 15

*Analysis of Variance of Achievement in High School Mathematics*

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>134.69</td>
<td>6</td>
<td>22.45</td>
<td>.235</td>
<td>.963</td>
</tr>
<tr>
<td>Within Groups</td>
<td>6015.90</td>
<td>63</td>
<td>95.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6150.59</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tables 16 and 17 illustrate the sample size, means, and standard deviations of high school English/language arts and mathematics scores for the 1999-2000 school year through the 2005-2006 school year.

ANOVA tests show no significant differences in achievement between the 1999-2000 school year and school years 2000-2001 through 2005-2006. The average mean scores between English/language arts scores in high schools operating under the traditional schedule during school year 1999-2000 were similar to the mean scores in high schools operating under the block schedule after the 1999-2000 school year.
Table 16

Sample Size, Means, and Standard Deviations of High School English/Language Arts Scores

<table>
<thead>
<tr>
<th>School Year</th>
<th>Sample Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000 (T)</td>
<td>10</td>
<td>87.10</td>
<td>7.445</td>
</tr>
<tr>
<td>2000-2001 (B)</td>
<td>10</td>
<td>89.50</td>
<td>6.078</td>
</tr>
<tr>
<td>2001-2002 (B)</td>
<td>10</td>
<td>89.00</td>
<td>7.930</td>
</tr>
<tr>
<td>2002-2003 (B)</td>
<td>10</td>
<td>90.80</td>
<td>5.412</td>
</tr>
<tr>
<td>2003-2004 (B)</td>
<td>10</td>
<td>86.80</td>
<td>8.690</td>
</tr>
<tr>
<td>2004-2005 (B)</td>
<td>10</td>
<td>92.60</td>
<td>4.061</td>
</tr>
<tr>
<td>2005-2006 (B)</td>
<td>10</td>
<td>90.30</td>
<td>9.650</td>
</tr>
</tbody>
</table>

Note. T = traditional, B = block

ANOVA tests show no significant differences in achievement between the 1999-2000 school year and school years 2000-2001 through 2005-2006. The average mean scores between mathematics scores in high schools operating under the traditional schedule during school year 1999-2000 were similar to the mean scores in high schools operating under the block schedule after the 1999-2000 school year.
Table 17

Sample Size, Means, and Standard Deviation of High School Mathematics Scores

<table>
<thead>
<tr>
<th>School Year</th>
<th>Sample Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000 (T)</td>
<td>10</td>
<td>83.00</td>
<td>9.262</td>
</tr>
<tr>
<td>2000-2001 (B)</td>
<td>10</td>
<td>82.60</td>
<td>9.216</td>
</tr>
<tr>
<td>2001-2002 (B)</td>
<td>10</td>
<td>79.90</td>
<td>10.775</td>
</tr>
<tr>
<td>2002-2003 (B)</td>
<td>10</td>
<td>81.50</td>
<td>8.263</td>
</tr>
<tr>
<td>2003-2004 (B)</td>
<td>10</td>
<td>81.40</td>
<td>11.462</td>
</tr>
<tr>
<td>2004-2005 (B)</td>
<td>10</td>
<td>84.70</td>
<td>6.464</td>
</tr>
<tr>
<td>2005-2006 (B)</td>
<td>10</td>
<td>82.20</td>
<td>11.840</td>
</tr>
</tbody>
</table>

*Note. T = traditional, B = block*

Summary

Chapter IV presented an analysis of data gathered from the responses of middle and high school teachers regarding their perceptions of block scheduling and its impact on student achievement. The major findings of the study regarding teacher perceptions of block scheduling were that middle and high school teachers' perceptions differ on two of five identified emerging themes: perceptions on their current teaching schedule and student achievement. Tables 2 and 3 indicate the five themes that emerged from focus group discussions with middle school and high school teachers: (1) teacher perception of block scheduling, (2) class instruction, (3) student-teacher interaction, (4) student achievement, and (5) teacher perception of current schedule. Transcriptions of the focus
group discussions appear in Appendixes E and F. Whereas 25% of high teachers favored changing back to a traditional schedule, all (100%) middle teachers favored changing their schedule to block. Additionally, only 50% of the high school teachers in the focus group believed block scheduling had a positive impact on student achievement, but all (100%) middle school teachers believed block had a positive impact of achievement.

The data relating to hypotheses testing was also presented. There were no significant differences in perceptions concerning the impact of block scheduling in selected Atlanta public middle and high schools when comparing middle school teachers and high school teachers. Also, there were no differences in achievement data in high schools during the time frame that block scheduling was in place and after block schedules were discontinued. However, significant differences were found in achievement data in middle schools during the time frame after block schedules were discontinued (under the traditional format).
Discussion of the Findings

This study focused on block scheduling and its impact on student achievement. As a reform initiative in middle schools and high schools, block schedules use extended periods of time to maximize student achievement. The current study was designed to accomplish two goals: (1) to determine whether Atlanta middle and high school teachers’ perceptions differed regarding block scheduling, and (2) to examine whether achievement data for selected Atlanta public middle and high schools differed during the timeframe that block scheduling was and was not implemented.

The results revealed that both middle school and high school teachers preferred block scheduling. However, achievement data indicated that middle school students performed significantly better with the traditional schedule, whereas there was no difference at the high school level regardless of approach to scheduling.

Teacher Perceptions of Block Scheduling

Teachers reported their perceptions regarding their scheduling preference and regarding the impact of the schedule on student achievement. By far the majority of teachers at both the middle and high schools preferred block scheduling. All seven
(100%) of the middle school teachers indicated they would like to change their current traditional schedule and return to the block schedule. Likewise, nine of the twelve (75%) high school teachers indicated they preferred their current block schedule. In terms of achievement, all seven middle school teachers (100%) believed that block scheduling had a positive impact on student achievement. At the high school level, half of the teachers (50%) believed similarly.

The current findings were consistent with DiRocco (1999), who suggested that middle school teachers perceived that extended instructional time resulted in increased student achievement. These findings also correlated with prior studies (Eineder & Bishop, 1997; Gruber & Onwuegbuzie, 2001, Rettig & Canady, 1997) that indicated that high school teachers favored extended schedules because of the perceived advantages of increasing the number of positive teacher-student relationships, teaching fewer classes (per day), and increasing the amount of instructional planning time.

One explanation for the positive impact of increased planning time is teachers' perceptions that more instructional time increases achievement through the use of a variety of instructional strategies. On the other hand, high school teachers perceived that increased planning time does not have a significant impact on student achievement.

There was a difference between middle school teachers' perceptions of the impact of block scheduling on achievement and the actual impact on achievement. Teachers are correct if the measures of achievement were overall class test average. They are incorrect, however, if the measures of achievement were standardized test scores.
Differences in Achievement Data

Middle school students performed better in English/language arts and mathematics under the traditional schedule. The data indicate that there was no difference at the high school level associated with different types of scheduling.

These findings appear to support the findings of Bateson (1990) indicating that middle school students using the traditional schedule outperformed students using the block schedule. This study also affirms research from the Georgia Department of Education (1998) that found no evidence that supports positive or negative effects of implementation of block schedules on student achievement.

One reason to account for why middle school achievement favored the traditional schedule is that middle school students do not focus for long periods of time. Shorter periods allow middle school students to concentrate clearly on important points of each lesson. High school achievement results were consistent with Deuel’s (1999) findings, which indicated that there were no significant differences in achievement based on state of Florida assessments and national Stanford Achievement Tests.

Implications

The implications for middle schools are that they should retain the traditional schedule if the goal is to improve student achievement. However, if school improvement goals are to improve school climate, promote teacher-student relations, or increase the variety of instructional strategies used, then block scheduling should be considered. Block scheduling did not improve achievement at the high school level. However, the use of block scheduling at the high school level increased the number of Carnegie units.
students could earn annually, improved school climate, promoted positive teacher-student relations, and increased the use of a variety of instructional strategies.

Recommendations for Future Research

Based on the results of this study, the following recommendations are offered for future research:

1. Further research should be conducted on the impact of different types of block schedules, such as 4 x 4 or 4 x 8, to determine which is the most effective for the school district.

2. Further research should be conducted on implementing effective instructional strategies based on specific content areas, such as math or foreign language, to determine if there is a difference in achievement based on content areas.

3. Further research should be conducted on the impact of block schedules on subgroups, such as the program for exceptional students and advanced placement students to determine whether there is a difference in achievement.

4. Further research should be conducted on school climate over time related to discipline referral and classroom disruptions, especially in urban settings.

5. Further research should be conducted on the implementation of block schedules in other urban districts similar to Atlanta public school district’s demographics (over 85% African American) to determine whether their trend data support the findings of other studies.

6. Further research should be conducted on the perceptions of students and parents in regard to different scheduling formats utilized by the school district.
Summary

Education remains a key component that allows industrialized countries to be competitive in the new millennium. Due to the latest federal government influences on our nation’s public school systems, reports from national agencies in education, such as the National Commission of Time and Learning, the National Commission on Excellence (A Nation at Risk), and presently the No Child Left Behind Act of 2001 (reauthorization of the Elementary and Secondary School Act of 1965), school districts throughout the country are investigating different approaches to improve the teaching and learning process to improve student achievement (Nichols, 2005). Block scheduling is a viable solution for restructuring time to maximize educational outcomes (Canady & Rettig, 1995b). For many teachers, changes in the use of time represent a paradigm shift in their thinking. To effect this improvement, Dufour (2002) recommended developing professional learning communities. In any case, any reinvention of time should be made carefully with the input of all stakeholders.
REFERENCES


Block Scheduling Survey

Please respond to the following items regarding demographic items by checking the appropriate category.

Gender

☐ Male ☐ Female

Present Teaching Level:

☐ 0 to 10 years ☐ 11 to 20 years ☐ above 20 years

Present Teaching Level:

☐ Middle school (6-8) ☐ High school (9-12)

Teaching Background:

☐ Only traditional; 50-55 minute period day

☐ Only block/modified block;

☐ Both

Please respond to the following statements concerning schools that operate on a non-traditional (block) schedule. A block or modified block schedule is defined as a schedule, which may include four 90 minute classes completing four Carnegie units in one semester, 4 x 4; eight 90 minute classes meeting every other day per semester, A/B; or four 75 minute classes with an extended learning period.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Block scheduling allows more individualized attention to the students than a traditional schedule.

1 2 3 4

2. Block scheduling has decreased the number of disruptions in my classroom.

1 2 3 4

3. Block scheduling has provided more planning time to increase the quality of instruction.

1 2 3 4

4. Block scheduling allows students to increase their achievement (overall grade) in my classroom.

1 2 3 4

5. Students can complete more assignments because they have fewer classes on which to focus.

1 2 3 4

6. Block scheduling has increased the attendance in my classroom.

1 2 3 4

7. The quality of my relationship with my students has increased under a block schedule.

1 2 3 4

Next page
8. Block scheduling has increased my level of instruction.
   1 2 3 4

9. Block scheduling allows more time to complete labs and class projects.
   1 2 3 4

10. High schools are more likely to increase student achievement under a block schedule than a traditional schedule.
    1 2 3 4

11. Middle schools are more likely to increase student achievement under a block schedule than a traditional schedule.
    1 2 3 4

12. I have experience a decrease in the amount of paperwork under a block schedule.
    1 2 3 4

13. Block scheduling is more likely to have an increase in math achievement.
    1 2 3 4

14. Block scheduling is more likely to have an increase in language arts achievement.
    1 2 3 4

15. Block scheduling allows for a greater variety of activities
    1 2 3 4

16. Block scheduling allows teachers to utilize the full 75 or 90 minutes effectively.
    1 2 3 4

17. Students understand the subject content better under a block schedule.
    1 2 3 4

18. Students have more opportunities to ask questions and receive feedback.
    1 2 3 4
19. Males are more likely to have the greater increase in achievement under a block schedule than a traditional schedule.

   Strongly Disagree  Disagree  Agree  Strongly Agree
   1                2          3          4

20. Block scheduling is more likely to increase achievement in Advanced Placement math courses.

   Strongly Disagree  Disagree  Agree  Strongly Agree
   1                2          3          4

21. Block scheduling is more likely to increase achievement in Advanced Placement English courses.

   Strongly Disagree  Disagree  Agree  Strongly Agree
   1                2          3          4

22. Students are more likely to have problems completing assignments when they have been absent from school or missed a class under a block schedule than a traditional schedule.

   Strongly Disagree  Disagree  Agree  Strongly Agree
   1                2          3          4

23. Block scheduling allows teachers to complete more subject content objectives.

   Strongly Disagree  Disagree  Agree  Strongly Agree
   1                2          3          4

24. Block scheduling allows teachers to plan more effectively.

   Strongly Disagree  Disagree  Agree  Strongly Agree
   1                2          3          4
November 29, 2006

Dear: Survey Participant

You are being asked to participate in a research project exploring block scheduling and its effect on student achievement and school climate. Your participation involves completing the enclosed survey, which should take you approximately 20-25 minutes to complete.

There are no known risks associated with your participation in this study. Your participation in this study is completely voluntary. You may choose not to answer any questions that make you feel uncomfortable. To assure anonymity of responses, I am asking that you not provide your name or other identifying information on the survey. While participation in this research will provide no direct benefit to you, the knowledge gained will be beneficial to your school in investigating teachers’ perceptions regarding the relationship between block scheduling, student achievement and school discipline. Your school may utilize this knowledge to further create schedules, which maximizes student achievement while improving school climate.

By completing the enclosed survey, you are consenting to be a research participant. If you have any questions about this study, you may contact Will Todd, Jr. at (404) 827-8427 or e-mail me at wtodd@atlanta.k12.ga.us. If you have any questions about research participant’s rights, you may contact Ms. Carpentato (Tanta) Myles, Research Compliance Officer, 152 Rose Administration, The University of Alabama, Tuscaloosa, Alabama 35487 at (205) 348-5152 or e-mail her cmyles@fa.ua.edu.

Thank you in advance for your participation.

Sincerely yours,

Will Todd, Jr.
Model Teacher Leader, SRT-3

Attachment: Survey
APPENDIX C

FOCUS GROUP INTERVIEW QUESTIONS
FOCUS GROUP INTERVIEW QUESTIONS

1) What are your impressions of the block scheduling format?

2) Did your instructional methods and/or practices change when you used the block, if so, in what way(s)?

3) To what extent, if any, do you feel that you and your students have benefited interpersonally from using block scheduling?

4) To what extent, if any, do you feel that your students have benefited academically from using block schedules?

5) If given the opportunity, what would you change about your schedule?
APPENDIX D

INFORMED CONSENT LETTER
INFORMED CONSENT STATEMENT – FOCUS GROUP

November 29, 2006

You are being asked to participate in a research-based project investigating teacher perceptions of block scheduling and its effect on student achievement and school climate. Your required participation time will be approximately 45-60 minutes. Your participation will also involve completing background information and focus group discussion exploring the effect that scheduling has on student achievement and school climate. The sessions will be taped using audio equipment to assist the researcher with documentation of the discussion topics. The tapes will be kept in a locked cabinet (secure area) and only the researcher will have access. I will destroy the tapes after the research is complete.

There are no known risks associated with your participation in this focus group discussion. There are also no direct benefits to you, although the knowledge gained from the study may benefit your school in investigating teachers’ perceptions regarding the relationship between block scheduling, student achievement and school discipline. Your school can utilize this knowledge to further create schedules, which maximizes student achievement while improving school climate.

I will be asking you questions on issues regarding block scheduling. You can choose to respond to any question as part of the group. You are free to leave the group at any time if you feel uncomfortable. All information you provide will be confidential and will not be identifiable. Your participation is completely voluntary. There will be no harm towards you if you choose not to participate and it will not affect any relationship you have with Atlanta Public Schools district.

If you have questions about the study, you may contact Will Todd, Jr. at (404) 802-3751 or email me at wtodd@atlanta.k12.ga.us. Finally, if you have any questions about research participant’s rights, they may contact Ms. Carpentato (Tanta) Myles, Research Compliance Officer, 152 Rose Administration, The University of Alabama, Tuscaloosa, Alabama 35487 at (205) 348-5152 or e-mail her cmyles@fa.ua.edu.

By signing this document, you give your consent to be a research participant. Thank you in advance for your participation.

Sincerely yours,

Will Todd, Jr.
Model Teacher Leader, SRT-3

Signature of Dissertation Chairperson  Signature of Focus Group Participant
APPENDIX E

MIDDLE SCHOOL FOCUS GROUP
Five open-ended questions were used to examine middle school teachers' perceptions of block scheduling in this study:

1. What are your impressions of the block scheduling format?

Ms. Carol Till, a sixth-grade teacher, stated her feelings in the following manner:

My impression is that I immediately think about high school or some middle schools where the teachers have 75 to 90 minutes of class time where they have to plan instruction for the full class time. I like teaching on the block schedule because it gave me a chance to do more things in the classroom. For the first 15 minutes, I could focus on maybe some remediation, for the next 15 minutes . . . and I could move on into the lesson for the day.

Ms. Heather Morrisey, a gifted eighth-grade teacher, summed up the experience in the following approach:

Well, looking at a lot of the models that we were taught to use in planning and implementing lessons, one of them is the 5E model and according to that model you move through each cycle. You need about 15 minutes per each part, give or take a couple of minutes on some. Some can be shortened to five where you may have to extend others to 20 or 25 minutes. You need about a minimum of about 75 minutes to complete a good math cycle. I think 75 minutes should be the minimum. I definitely prefer blocks.

Ms. Dunn, another gifted teacher, who teaches Grades 6 through 8 using a pull-out model responded to the question and explained her feelings by saying the following:

I have also worked in a school where we had block scheduling, but there were different timing in the area from what I teach, which is social studies. The 90-minute block was given basically to reading and mathematics. When it came to social studies and science, we split the 90-minute block; 45 minutes for social studies and 45 minutes for science. I have also worked in situations where each discipline had the full 90 minutes, but on alternative days. Overall, I did thoroughly enjoy the 90 minutes. I didn’t quite get as much accomplished as I had like to have done within the 45 minutes when I had to split that time with science. But when 90 minutes was designated for social studies alone, even though it was on alternative days maybe on Tuesdays, Thursdays and alternating Fridays, I thoroughly enjoyed it. I got an opportunity to really address an effective lesson plan design. It gave me the opportunity to review, to introduce, to re-teach, to have cooperative learning and sometimes some experimentation. It was a wonderful situation. I would like to see block scheduling back in the middle schools.
Ms. Moore, a sixth- and seventh-grade math teacher, summed up the experience in the following manner:

I also would like to see blocks back in the middle schools. I have taught both in middle school here and high school in another state. When you have block scheduling, I find that remediation works well with kids that need remediation. You have longer periods of time to work with kids who need help and also with advanced students who have extended time to work with them on projects. It's great for projects, any project. You have enough time to spend and effectively work with students. The hour period does not do that because time you get in class and do the sponge, “do-now” assignment, and the problem of the day, the time is gone and they want you to explore the lesson. I would like to see block scheduling come back, so we would have the extended time to work with classes.

2. Did your instructional methods and/or practices change when you used the block, if so, in what way(s)?

Ms. Heather responded to this question in the following manner:

Well, I am actually able to allow more individual, less guided work. I spend my time now doing more direct instruction, even though the push is for children to lead their work. I'm not able to do that as well with a shorter period of time. When I had a long period of time, I am able to model what I want them (students) to do and then give them an ample amount of time to actually practice by themselves. Then, let them all reflect afterwards. I now end up cutting out the reflection time, the closure and preview for the following day when it's shorter.

Ms. Dunn replied by saying the following:

I think that what I did more of when I had an opportunity to work with block scheduling is to have more centers and task types of activities for the students. Also, having a personal touch with the students. I could actually rotate my class through centers and various activities. Not only does your instructional methods change, your assessment methods change. I heard a very interesting concept yesterday in terms of enduring understanding and balanced assessments. And this will allow us to do more different various types of assessments during the block time.

Carol stated, “I agree.” Carol made additional comments to question number two by stating the following:
When you have more time in your class, you do less direct instruction. I teach them at the beginning what they need to know and do, show them an example and then you can facilitate the rest of the class. They have a lot more time to work in groups or to work independently. So, why I think it will assist with class instruction. If I could give a disadvantage, the only thing might be the length of the classroom instruction. A lot of times teachers have a hard time with planning. With 90 minutes, I may not know what to do with all of that time if my only perception of practice is a worksheet. Ok, when students finish the worksheet, what will they do? I think allowing teachers to collaborate is key in order for block scheduling to work.

Ms. Dunn also provided additional comments concerning any changes in instructional practices by expressing the following:

I will have to agree with you. That was one of the complaints from the administrative level. That is was just too much down time. And that down time usually came at the end of that block because of the lack of effective planning and maximizing that time. So that would be one of the disadvantages, I observed. Even though I am not guilty of that. I did hear of a principal at that school saying it was just too much "down time" with that 90-minute block.

Mrs. Mary Brown summed up her experience in the following manner:

Mine got better. I like the block and I like the 90 minutes. I was able to do a variety of things, especially grouping students and putting them into small groups. I really liked having more time to work with students who did not get it. My scores went up with the block scheduling more than with the 55-minute schedule. As a math teacher, I think you need that time. You really, really need that time. Ok, I’ve taught. I’ve given them guided practice. I’ve checked for understanding. Now, I need to see if they can apply what I have taught, and 90-minutes gave me the time to do all of that.

Ms. Black made the following comments in response to question 2:

Additionally, the textbooks are so resourceful with support material that comes with the textbook series. We have audio tapes, re-teaching strategies, laboratory activities, and we rarely get an opportunity to utilize these resources now because of the time factor. But with block schedules, we really could take advantage of some of the auxiliaries that go along with textbooks.

Mary also described additional comments related to instructional practices in the following manner:
And I am able to use more, a lot more of the technology in my classroom with the block schedule. Remember Learnstar? The kids loved Learnstar. They absolutely loved it, and the 90-minute block time afforded me more time to integrate technology.

Ms. Moore made the following comments in response to possible changes in instructional practices related to the use of learning centers:

When you integrate centers into your classroom, I found you had less disciplinary problems. Kids are involved. I did not have down time. When we got finished introducing the lesson, I allowed students to go to centers, use the math libraries and other technology in the classroom. I didn’t have discipline problems like I have now with kids under our current schedule, because they don’t stay focused long enough.

Ms. Elizabeth Howard concluded the comments on changes in instructional practices in the following manner:

I tend to agree with what everybody is saying about block schedules. You have more time to go through everything. Like she stated earlier with the textbook resources, I am using resources out of the new textbook now and implementing them into my lesson. A lot of the resources, I am not able to implement because of the shorter period of time, so you rush through everything. With block schedules, you would have more time to focus, ensuring that students understood what they were doing.

3. To what extent, if any, do you feel that you and your students have benefited interpersonally from using block schedules?

Ms. Dunn began the discussion to this question in the following manner:

Yes, because conferencing is so important with our students, and it allows time for us to do that. We could actually have a more personal touch with our students through conferencing, and blocks allowed time for that. Even if it means clarifying or revisiting a particular skill with depth and clarity or to simplify their understanding, if that student understood a particular standard or objective. I heard someone from the state department on yesterday during the GPS standards redelivery stating that the opportunity he takes conferencing with four students everyday while the others were working. He simply said, “Tell me what you understood about this particular lesson?” That’s a form of assessment. Not always do we need to give assessments that involve multiple choice or constructive response, just tell me what you learned from the lesson, taking five minutes to talk with that child and that becomes an assessment. Block time allows time for that.
Mary responded to this question as follows: “You get to know your students and build relationships because kids are so perceptive. They know when you care about them and when you don’t care about them. When they know that you care, they will do anything for you that they won’t do for other teachers.”

Heather agreed and responded to the question in the following manner:

It also helps with the interpersonal relationships of the students. Because they are able to work better, they create a community within that classroom and then you are able to just facilitate how they operate with each other—building working relationships, not just social relationships. They know who in the classroom is very helpful. They know who can help illustrate something. So they move around the classroom, like a village of ants, helping each other. The teacher is able to move around from group to group. Students are able to express more with others because they have more time to actually discover what they understand and what they don’t understand.

Carol made additional comments and described her feelings in the following way: “You also see students take more responsibility for the lesson. They are able to help you plan the focus by involving students in the planning of the lesson. Block time allows for that. Again, I hope we move back to blocks scheduling.”

Ms. Moore agreed and responded to students benefiting interpersonally from using block schedules in the following manner:

I think it’s a good transition. I know that they took it out of middle schools, but if you think about it, students in elementary school are accustomed to staying in place for a long period of time with the same teacher. Moving to middle in sixth-grade classes with 90 minute, they may adapt better because they are familiar with spending more time with one person maybe two people and not changing every 45 or 50 minute readjusting to different teachers’ personalities. So, the transition to a block schedule may be beneficial as well.

Mary concluded the responses to question three related to students benefiting interpersonally:
You also have more time for student-focused instruction. The 90-minute afforded me the time to let a student get up and guide the lesson. And for some reason, when a student explains it to their peers, they get it just like that. I can explain it 15 to 20 times and the light bulb still does not go off, but when their friends explain it one time, they get it.

4. To what extent, if any, do you feel that your students have benefited academically from using block schedules?

Ms. Dunn responded to this question by stressing that the benefits are great because you have more time for corrective feedback. I think there is more time to look at a task or assignment and give some individual feedback. I think we were at the same school at the time we had the opportunity to work with the block scheduling. Teachers, as well as the students, benefited from blocks academically and personally.

Heather concurred with the aforementioned comments and made additional commentary concerning academic benefits in the following manner:

I think it seems that overall the perceptions of the school because you are implement coursework, like connection classes, and we able to implement lessons that have more connections inside that class time. Not just here’s a skill or here’s a concept, this is how you do it and leave. We’re able to see how it connects to the world and the enduring understanding. So that actually improves on their connectiveness to other subject matter, to themselves, to the world around them, which would raise their student achievement not just in my class, but all classes.

Ms. Till described her feeling by stating the following:

I think that test scores were better because if you have more time for all of the things we are talking about, student achievement is going to happen with students automatically. Because if you have more time with the number of students that….in classes now, 28 to 30. The more students, the less teacher-student time there is. With less classes, student achievement is a given as long as teachers have planned the lesson, focused on the needs of the children in the classroom. Student achievement will be a by-product.

Ms. Dunn responded to this question by also stating, “I think we actually tracked student achievement the year after we stopped doing block time and there was a slight decrease in test scores. The test scores actually dropped.”
Ms. Black made the following comments and suggested the following:

It gives you more time for your work period for students to use that time to practice and work in small groups. I’ve noticed it works better with higher-level kids; for lower level, it helps them but not as much. It allows more time to rotate students through centers that they can work … having time to do.

Ms. Moore also responded and described her experience in the following manner:

I do agree with everyone else that student achievement will exceed. Notice the direct reading program, test scores have gone up with the 90-minute program. Everyone is focused and no one is in the hallway. I think if you have more time, you can get more done. Whether it’s block schedule or modified block schedules, 60 minutes just doesn’t really do it.

Elizabeth responded to the question by stating, “I agree with everyone else but you have to plan because if you have those 90 minutes and your kids get bored because you didn’t have enough activities, it can be a disaster.” Till concurred with the aforementioned comments and made additional statements saying,

Yes, especially if I am a new teacher that 90-minute can be really … that 90-minute block can be really long. I might think worksheet one and two is enough to keep them busy and then you under plan and you’re stuck teaching. Ok, what page can we turn to now? What can we do now? So, you also have to overplan to make sure.

Heather concluded the discussion on students benefiting academically from block scheduling, stating that

90 minutes can actually be really short as we move into GPS standards where your work is project based. You need more time to work because the work is going deeper instead of repetition of the same skill. We’re looking at how well you understand this, apply it, and evaluate it. We are going through all levels of Bloom’s Taxonomy. That takes time. So, it’s not just a worksheet with repeated step one, step two, step three. You may need another day.

5. If given the opportunity, what would you change about your current schedule?

Till began the discussion by describing her feelings in the following manner:
I think we all agree as teachers we actually would like to have block schedules because of so many positive outcomes. You have time in middle school to collaborate, to plan, and like Heather said, with the Georgia Performance Standards implementation, you really need that time. That would be my preference.

Ms. Dunn responded to the question by suggesting the following:

Extra time! Truly when you look at the middle school schedule without time allotted or accommodated for movement, really your classes are shorter. And for some reason after lunch, classes are a little shorter. My classes are always shorter 5 to 10 minutes and that can make a difference when you’re talking about the components of an effective lesson. When you talk about 3 minutes for sponge, five minutes for this and that. The ten minutes off can really make a difference. So, block time would give us a little more time to do that and make accommodations for not having student movement in the schedule.

Ms. Heather concurred with the aforementioned comments and offered additional statements:

Not to mention that most of the high schools in APS are on block schedules. So, you have the element that in elementary school, students stay with one teacher a longer period of time. Then, they get to middle school and switch, switch, switch, every 50 minutes. Then, they get to high school and have longer periods. Again, they keep going through these difficult adjustments. Then, it takes them a while in high school to get adjusted to that longer class period, saying, “it’s boring, it’s too long.” I think they have gotten used to these shorter classes with a little bit of instruction, a little bit of practice, then you’re out. I think it would make all transitions smoother because they are used to that schedule if we continued it in middle school.

Ms. Mary also agreed and responded to this question in the following manner:

I am reflecting back to the student summit that I attended this year. They had all the middle school and high school and least two or three representatives from each school. They asked them different questions about how was their education? Are you bored? What are your teachers doing? What things would you change? All but a few and groups have presented. Middle schools stated they did not want worksheets and they did not want busy work. They wanted teachers to teach them about careers and real-life situations. Not one group stated they wanted easier work. They wanted harder work. I think blocks would give us time to do this.
Ms. Black responded by saying, "Because they appreciated it when you have taught it to them. We were dividing polynomials today and they complained until they understood the concept with extended time. Heather described her response in the following manner:

Honestly, I think it's strange that you have so many classes to teach. The average middle school teacher has at least four classes, maybe five. That's at least 90 or more students depending on the size of the school. When you have more planning time, some of it is actually used as reflection, assessment, or evaluating students' work. So, planning is not necessarily wasted. You're not always in the room with other teachers planning the next lesson. We have to stop to evaluate this lesson. That extended time is necessary for more than just one thing.

Ms. Carol also offered the following additional comments and concluded the discussion to this question by answering as follows:

That can be a time for not only common planning but also time for parent conferences and time to call parents. Because when you actually think about planning time, it is transition time also. The biggest complaint in middle school is walking the kids to and from connections classes. Teachers feel that probably they have to go to the restroom, make a few phone calls, then I have to get the students. I really don't have that true planning time. So, if you had 90 minutes of planning, perhaps it might be more productive. It will definitely have to be an administrative priority. The administration sets the priority during your planning time. On Tuesday, this is what we are going to focus on. On Wednesday, that is your day to call parents or have parent conferences, or Thursday, you do this.
APPENDIX F

HIGH SCHOOL FOCUS GROUP
Five questions were used to examine high school teachers’ perceptions of block scheduling in this study:

1. What are your impressions of the block scheduling format?

Ms. Renee Roberts, a high school geometry teacher, began the discussion and responded to the question in the following manner:

Personally for me, I like it. I can do more because I want students to capture those objectives that I want. I have more time that I can do that in. I can break it up. I don’t have to be up lecturing the whole time. I can have a lot of student-focused activities, which will help reinforce those things I just talked about. But me, I just like it. The only drawback that I have with it is students who are absent, depending on what type of block you’re on; they miss a lot when you’re on a block schedule. If they miss one day, they’re actually missed two days. And in some cases, if they’re on a 4 x 4 block, they’re actually missing a whole half of a week of work, if it’s a 4 x 4 because you only have four classes. Yes, they meet everyday, but a half of a semester is full semester on a 4 x 4. So, if you’re out for the flu. That’s about 3 or 4 days. Well, at that point, you have pretty much missed about 2 and 1/2 weeks if you’re on a 4 x 4. It’s hard for those students to catch up, especially if they’re not self-motivated.

Dr. Ugo Kale, a biology teacher, described her feeling and suggested these thoughts:

For some students, it’s too fast paced because you try to cover a lot. But it’s too fast paced for my students. In 4 and 1/2 weeks, that’s already mid-term for us. And as Renee was saying, being absent just 1 day, 2 days, and our students tend to be out a lot of days, so they don’t tend to get the concepts. It’s too fast paced for some students. Although for a teacher, as Renee said, I like it myself because you differentiate instruction. You have a chance to do a lot. You can cover a lot and then have hands-on and have lab time.

Dr. Ray, an Algebra II and trigonometry teacher, made additional comments and responded to the question by noting:

Well, I personally prefer to teach under a block. I wouldn’t prefer anything else. I find it to be very efficient when it comes to the fact that you can cover more material and especially with the kinds of tests given; the EOCT and the Georgia High School Graduation test. It provides the opportunity for you to cover more materials for those tests. And then I think it’s another side that most people don’t look at. Is that, if you do have students failing a course, it gives them more
opportunity to take that course without going to summer school. A lot of kids can’t attend summer school, especially if you........late. They have enough time with 4 x 4, especially the type we have at my school. If they fail courses during the year, they can repeat those courses without ever going to summer school and still be on track for graduation. Eventually, this type of schedule would eliminate your summer school because they have so many opportunities to make-up that course they don’t pass during the regular school year. The summer then could be more open for more enrichment type activities for kids instead of devoting a lot of that money and time to just regular school.

Dr. Sears, who teaches biology, also made the following comments in response to her impressions of block scheduling:

I went from a 4 x 4 block to an eight block. The 4 x 4, the reason why I like that was because I saw the kids, everyday and I needed to see them everyday to reach more concepts. And you still had the 90 minutes but you were dealing with that time constraints. You had to cover all that information and 4 and 1/2 weeks and be done. The block schedule was one, three, five, seven, then two, four, five, and six. My fifth-period class, I saw everyday. They did better on everything. I think seeing students everyday, there is a sense behind that, as well as, having the 90 minutes because you do have that time to do a lot of different activities to reach the students. Now, we’re on the 4 x 8, which is one, two, three, four, A day; one, two, three, four, B day. Because that’s eight classes and that’s too much. I have students ranging from AP to IB to performing arts. They’re overwhelmed with eight classes and the teachers are raising the bar and giving this high-level, challenging work and they’re having a hard time keeping it together. And the opportunity is there though for them to make up a missing grade, but at the same time when they are going through eight classes and eight climates, and eight mid terms, they’re like, it’s just too much. So, they tend to focus on this class only, and I will do that one later. And they end up not being able to balance. So, that is just one problem with the 4 x 8. It’s just too much ... time.

Mrs. Dee Gooman-Price summed up her experience with block scheduling in the following manner:

I enjoy the block scheduling because I enjoy the 90 minutes of....differentiating the instruction and varying activities. And for most students that are hyper, it’s easier to keep their attention if you have a lot of things going on and they can look forward to it. And since our school does a seven-period modified block, one day out of the week, we actually have all seven period classes. So we get a taste of both. It’s so frustrating with the 45 or 50 minutes classes now that the kids prefer the block to the shorter classes. They actually do much less than they would
normally when we used to do six periods because they’re use to a longer period of time. They always take that day as a “day off,” because it’s hard to complete activities. I teach science, so you usually have activities that run longer. We are getting ready to go to the 4 x 8, and Dr. Sears was saying, there were problems with having eight classes. But with smaller learning communities, we’re looking to putting in more elective kinds of support classes rather than the number of academic classes. I think that is where you have to control it. We’re going to take an active role in choosing classes for students, so that those kids with that high initiative don’t take seven or try to take six AP classes because they want to get ahead or because they want to do all academic. We are going to try to steer them into classes that are less rigorous. I mean not really less rigorous, everything is rigorous, but tailored. They won’t have to do all academics and they can support the academic, not a core class. However, they support the core class. For instance, if you have AP chemistry, you could actually have one semester working on something that supports the AP chemistry so you can have more ...buy-in. That’s why we are looking forward to giving them more expanded curriculum rather than more academic curriculum.

Another math teacher, Mr. Bo Waters responded to this question by stating:

We’re on a 4 x 4 and I found that when students are out half of a day, it cuts down on have to stop and move on to the next page. Sometimes you have to repeat some things you just learned before. As far as kids, sometimes it seems like they get bored from staying in a classroom for an hour and a half. It seems like they would like to have a break. It gives the kids an opportunity, however, to take more classes than they would have taken under a traditional schedule. I like it.

Ms. Vanessa Cole, who teaches science, agrees with others and describes her feeling in the following manner:

At my school, I have been mostly involved in blocked scheduling: One, three, five, seven, and two, four, six eight. That schedule involves 90 minutes, where it gives us the opportunity in science of doing more hands-on activities. It gives us time to apply those theories that they learn through science and have more time. I still remember the day where in fifth grade through ninth grade, they tend to lose a little, but it’s easier to bring it back together in a 90 minute class rather than a 45 minute class. Another benefit that I have seen, especially this year, is that we have a lot more structure. Students are doing a lot more activities. If you’re in a 90-minute class, it’s easier structuring more in-depth activities than it is when you have a 50- or 45-minute class. It gives you more flexibility. I do like the block schedule.
Mrs. Bell Copeland, who teaches geometry and algebra, concluded the comments and described her feeling toward block scheduling in the following way:

Our situation is a little more unique than that, because of the type of students we have. I’m at Crim Open Campus. Most of our kids need the academics. So, we offer more academics than electives. We have electives but they come to us favoring academic classes. So, we have to ensure that they get the academic classes. That’s why we use the 4 x 4, so you can get the academics and move on. You have some kids that are taking all they need, which is maybe 3 years of math and right now they’re taking those 3 years of math this quarter.

2. Did your instructional methods and/or practices change when you used the block, if so, in what way(s)?

Dr. Ugo Kale began the discussion of the question by stating, “Yes, but sometimes some teachers take that one concept that they teach and stretch it, and just beat it, beat it, beat it. They give so many examples until you just use up the time and you end up not really finishing. Mr. Carl, who teaches mathematics, responded to this question by stating:

I think overall, I see the pros and cons. But I think it does rely back on the instructional methods and instructional planning. I think proper planning, of course, prepares you for teaching two subjects. When I say two subjects, basically teaching two lessons embedded and allowing for the differentiation of instruction, allowing for questioning, allowing for any labs or class activities. That’s different from the traditional because you tend to have more time to plan it out and think it out and to have some breaks and “true” closure. Whereas, the traditional, a lot of time you find yourself teaching towards the bell trying to get everything in. It is good when you have individuals, in terms of departments, coming together for common planning and to work those instructional practices out. But with the block scheduling, I think if it is used properly, you will find that instruction goes a lot smoother.

Mrs. Copeland agreed and also made the following statements:

I know we have more computer time with the kids to use the lab as well as do some hands-on activities than I would not normally do under a traditional class schedule. Sometimes, I can finish, because we are still teaching QCCs, I can
finish three QCCs in a class period. But, I have to do different things with them. Some of them, I use the traditional method, a different shade of learning and we use the lab a lot.

Dr. Ray also agreed with the aforementioned comments and replied by saying,

Well, the block schedule does allow you to focus on those students who just can't quite get the concept. You have more time to do that. It also provides more time for teachers to offer more differentiated types of activities than the traditional schedule. With the small learning communities now, not only does it provide common planning time, but it also allows time for interdisciplinary preparation and discussing students. Because we are in small learning communities now, we meet during a common period. We all have the same students, so we are able to discuss those students if they have problems to see exactly what is wrong. So it works! You are able now to be more in contact and closer to that student than before with the concept of block and small learning communities.

Dee described her feelings in the following manner:

Well, I found that one of the biggest changes I had to make was to get a system and teach it to the children and stick to it. A system where they know this meant so much time and what you're going to do first. Students can expect the lecture or the notes. Then, you can expect this and if you're good, we can do this. That type of stuff, where they actually work from bell to bell. At the end, they're rushing to finish-up something. So, its not like 90 minutes and what do we do, but it takes a while to train them. I think once the teacher does that it makes it easier for me to teach because I know what I am going to teach and students know what to expect. Now, I have very little difficulties with kids for 90 minutes knowing that they have something to do the whole 90 minutes.

Ms. Morris, a special education teacher, spoke and described her feelings:

Good afternoon everyone. For me, I am going to start with the benefits of block scheduling for students that I teach. Given that we have the time, I don't know if my students have benefited better than from 60 minutes. Basically, I can teach them a lot of varied concepts, but I'm not sure that they're actually absorbing all of the materials, even though I see them on a daily basis. Sometimes it's a bit much for the students to try to handle, three to four different concepts. We are all on various pacing guides I'm sure with respect to the amount of information that we have to cover. So, I don't know whether they come to us with that maturity level with respect to all that they are expected to ascertain from each teacher. While we have high levels of expectations for them and not that we are going to lower our level. As an adult, sometimes I find myself after an hour.... I'm pretty
Mr. Waters responded by saying, “Yes, when we were working on the standards under the traditional schedule we had little or no activities.” Vanessa Cole concurred and also offered her opinions:

Block scheduling has allowed me to do more activities and I am able to reach different groups with varying abilities. Plus, you can do more than one activity. It’s easier to give students more remediation because you have more time for it. And usually, I was lucky enough this past year to have the same students for physical science and biology. So like Dee was saying, you have a set plan or schedule and students have to learn the routines. They came in this year and they knew the routine from last year and started with that expectation of the same routines. So, they know that I’m going to move around and deal with different students and assist students with what they need. I don’t spend the whole 90 minutes trying to give out all this information. I spent most of that time with them applying the concepts that we have learned. With the EOCT just being given this year in science, I’m still left with all of this time. I have to put all this time teaching the performance standards done before May 5th. That allows me that time. Now, I can go back and apply differentiated instruction for science projects or maybe doing background research.

Dr. Sears concluded the discussion on changes in instructional practices:

Well, I’ve always been on the 90-minute, but I went to the 4 x 4 then to the 4 x 8. The 4 x 4, I was so rushed. You know to try to get it all in because it has to be done. This schedule is better. I know for new teachers having 90 minutes sometimes is overwhelming because they don’t really realize how long it is or how short it is depending on that schedule you have in place. So, working with the new teachers to have multiple activities and not just to lecture. You don’t have to lecture the whole time. That’s how I help them with their instructional methods. Ok, this is your block but there are things you can do. You don’t have to lecture the whole time. You have the time to do this computer lab, to do this activity, to re-teach, whatever. That’s been the biggest thing, 4 x 4 rushing trying to get done or knowing how to have multiple activities for the children to do.

3. To what extent, if any, do you feel that you and your students have benefited interpersonally from using block schedules?
Dee began the discussion on this question on interpersonal benefits from using block scheduling by stating the following:

We see our kids every other day, yet the schedule stays the same, four periods. Personally, I get confused and I can’t remember who’s coming what day, when, where, why or how? So, when I see them in the hall and ask, “Why aren’t you in class today?” It turns up that was yesterday’s class. But I mean the 90 minutes, of course, give you more time to get to know them while they’re in there. But the every other day, you don’t feel it. When they’re absent you feel like they have been gone for a week. I’m fussing at them and they say, “I’ve only been gone for only 2 days, 1 day,” but it seems like forever. So, there are pros and cons during the 90 minutes.

Ms. Rowland, another mathematics teacher, responded to this question by saying, “It took me longer with the every other day block to know the kids, believe it or not. Their names didn’t come as quickly as you wanted them to be.” Dr. Ray offered her opinion on benefits toward students by stating the following:

It gives you an opportunity to form a better relationship with the students than previously. I find when you’re planning and you’re doing activities, I have a problem with 90 minutes not being enough time. The bell rings and students say, “it’s already time for us to go?” That’s how fast it’s going. So, I guess it depends on how you’re planning and what type of activities whether or not it drags for you or whether or not you’re at a point you still say I need more time. I’m in favor of the 4 x 4. I don’t care who, what, or when because it provides so much opportunity for teachers, as well as students. I’m just really sitting here and thinking about the 4 x 8 going to eight classes. I’m not sure about that because you have to look at it like this, especially on a high school level. The 4 x 4 also help these high school students because most of the kids, I know in my school, work. They have jobs. They have a lot of other things. Just imagine them doing eight classes. The 4 x 4 helps those kids a lot with their personal life as well as their school life. I just can’t imagine those kids trying to work and then have eight classes. I think that is going to be extremely overwhelming for those kids. Another thing you have to worry about. We were one of three schools that implemented 4 x 4; Douglass, Southside, and Washington High. The only other problem was when kids transferred. They had to transfer within those schools because if they went to another school that did not have that schedule and that’s another thing that has to be considered. You have high schools with all kinds of blocks. Students would have finished a course at one school and they transfer somewhere else and those students are not finished that particular course until
May, for example. In December, they could have completed the entire year, so that can really present a problem. Regardless of what’s going on, they’re going to have to get situated on what they’re going to do with these schedules in high school because kids do transfer. They’re very mobile and that’s just a problem within Atlanta Public Schools. Once they go to another school system, I don’t see that’s our problem. We care about Atlanta. They have problems with other school systems because we have some kids when they go there they have completed a whole year already and they have a problem with that.

Ms. Morris described her feelings related to students having benefited interpersonally from block scheduling in the following manner:

Yes, one is the day-to-day interpersonal benefits because one thing I make it a point to do whether its block or 60 minute. I make it a point to learn their names right away because it’s a management technique. They are surprised that I know their names by the end of the week. I’m going to play a game with them to get to know their names. I’m going to give them a survey so I can find out things about them personally, probably during that first or second week of school. I use that information to give back to them to let them know. Oh, you’re the one that told me that you were going to be a doctor and you have done how much homework? So, they’re surprise when I can turn around information and I get to know them that way. I’m not sure that 4x4 lends itself to me getting to know them personally. I’m going to make a point to do that anyway, whether I have 60 minutes, 30 minutes. Because it’s an advantage to me to be able to associate a name and face right away, so that I can have management control. The other thing is that, 60 minutes for me seemingly works better because the kids seem to handle it better. I thought I was actually teaching more on the block schedule and I’ve done both. I don’t get any more done whether it is block or 60 minutes. I think 60 minutes works better for me because they know what they have to do, if you are organized first. The 60-minute forces you to be organized. So, they know that they don’t have all of this time, so they come in and we just jump right to it.

Dr. Ray made comments on the aforementioned statements and concluded the discussion:

The 90-minute definitely forces you to be organized too! Because to have those kids there with that time, you’ll be up the wall if you weren’t organized and well planned. One thing I would also like to say about that 4 x 4, it that it gives you more communications with parents because you’re so busy giving grades and giving some type of progress that the parent is constantly getting some kind of feedback about that child’s performance. Regardless of the traditional method, you know every 4 weeks we got to send something home. They get something constantly, so they are more abreast of what their child is doing with the 4 x 4.
4. To what extent, if any, do you feel that your students have benefited academically from using block schedules?

Dr. Cari Sears began the discussion and described her feeling in the following manner:

This is, it is our first year with the 4 x 8, and I think that we have more seniors failing. I think it is because students have eight classes and there's no time to juggle. They blow over their senior year and have to do all of these activities. They're thinking about getting out and college, stuff like that. But then they have these eight classes and right now, we have AP and IB guidelines and then have these eight classes. These are eight teachers and they expect you to do their work and projects. I think we have more students that are not doing as well. I think it's a combination of the teacher not really preparing students and students not really knowing what you are expected to do with these eight classes. The communication is weak. It's been rough on them with eight classes.

Ms. Tonya Fry summed up her thoughts and responded by stating the following:

Our school is a modified block, where we do, one, three, five, seven twice a week and two, four, five, six twice a week and on Fridays. We do all of the above. Right now, it's end-of-course tests, before that it was GGT. The system is trying to find out what are you doing with seven classes. Even though you ....and then some days you have forgotten classes because of scheduling. Then you can't ring the bell because of this. Right now is not a good indicator of what school should be, but prior to that, seven classes are too many. We couldn't handle that in college or graduate school. I'm sure eight will not be any better than seven. That is not the way that I feel our students should go. Am I opposed or like the 4 x 4 block? The only reason I like block is because of smaller classes. That's the only thing that I can truly address because seven and eight are much for many of our children even though we may have smaller class sizes. I do feel that with that the seniors lost focus from GGT pullout. Well, the school lost focus with the GGT pullout. Since January, it has been a different school. Before January, I would say it was working. Now, I'm saying, "I'm going to finish in 3 weeks. I no longer have the stamina."

Ms. Dee made the following comments in response to her feelings concerning academic benefits to students from block schedules:

No. I think that that's something that has to be considered because we're going to the 4 x 8. One of the things is that teachers are going to have to plan together
because kids are complaining to me. I’m a senior and I have six senior projects due and everybody trying to do this for make-up because they’re failing. They stop working before Spring break because GGT pullout has the juniors out of class. So, they stopped working a long time ago. We’re trying to save them and now that we don’t have a “D” to give them. After A, B, then you C them out. Teachers don’t feel comfortable giving a child 70 that will appear as a “C” when they didn’t earn an average grade of C. Everybody is saying, “I’m not going to give a C,” but they’re going to have to. The thing is that as teachers, we need…… we are going to have to have more planning. That’s one reason we’re going to 4 x 8 because the teachers don’t have daily planning time. You can’t have cooperative planning and other kinds of extended involvement if you can’t plan. Teachers who don’t get a planning period, so, 4 x 8 is the only way to give it to them. So with the 4 x 8, the teachers are going to have to sit down with that group of kids and say, “I’m giving this for mine. You’re giving that.” You’re going to have to lighten up because everybody can’t have the most important class in the school. Everybody has to do this work and teachers have to take this into consideration. But then again, when you have to save children at this point, you try to give them something. Well, turn in something so I can give you a grade.

Dr. Ray responded to this question with the following:

You know what concerns me is that we have schools like that. We piloted the 4 x 4 at least 3 or 4 years before anybody else. Anybody looking at the data, as far as, what’s working or not working? We’re just doing so many different schedules as a group. Who is looking at the data as to what is working and what is not working? Instead of just keep on putting different schools, ok, let’s all go to 4 x 8. Has anyone looked to see whether or not is a successful block or not, not only in Atlanta, but other states? Nobody seems to be looking at any data to see what really works. If you have a 4 x 4 that’s really working that seems to be more successful, just stop all of that other stuff and just put all the high schools on that and let’s move on.

Ms. Rowland answered, “I think it depends on your students and what levels of kids you have.” Mr. Carl agreed and said, “It does.” Ms. Tonya Fry had additional comments:

It also depends on the courses that you are teaching. The courses that you’re teaching because the science curriculum………..we never get to finish anything. We hurry things finished, whatever we finish. Now, I’m feeling like I’m spreading mayonnaise on glass. I can’t get the depth that I would like to do because I got to cover this with the kids coming up before the test. I’m on the A/B schedule, but remember all of my other testing from my other students. Don’t forget, I have lost students. I have been losing students steadily since February. It
would be wonderful if I kept my students. I would be further along, but I don’t. And then today, I’m here looking at my class and I have half of my class.

Ms. Morris summed up the experience with the following:

No. I want to go back to traditional schedule. That schedule let us have choice and allowed us to cover our content. We had the time to cover it from August to May. I don’t understand our children. Well, I do understand the concept of it but I don’t think our children have the means or more mathematical maturity to consume a year of math from August to December, and they’re done with the whole year; likewise, from January to May. This is in reference to your academic question. It’s not happening. If you look at a course like calculus, it took me a year to take calculus and I’m going to teach an 11th grader maybe a 12th grader a year of calculus from August to December. It’s not happening! I mean, we do this on the block schedule, but it concerns me again about the absorption of the content.

Dr. Ray concurred and offered her response to the question in the following manner:

I agree with you, but one thing that really concerns me is the summer program that they have. In less than 2 to 3 weeks, kids can take those same courses or they would take Algebra II and then come back the next school year going right into that calculus, analysis, and trig, and they only had the prerequisite course maybe 2 to 3 weeks, 4 weeks in the summer. It’s just no way! That’s another big problem.

Ms. Fry replied, “I thought we have nothing but remediation in summer school?” Ms. Renee provided clarity and stated, “She’s talking about SEMCE. In summer school they’re repeating a class, but in SEMCE they’re actually taking a class and getting full credit.” Ms. Morris had additional comments:

I’ve got a class of 10th graders, 32 of them, in advanced algebra. They all should not be there because they just don’t have the prerequisite skills and they’re not ready to work at the pace that I’m pushing them. And they tell me, “You need to go to Spelman College and teach. You need to go to college because you’re pushing us.” I say, “You don’t get it. That’s what we get paid to do, push you.” Then you have prerequisites and complaints that we have grades of A and B prior to this class and that says that you are ready to work at this level.

Ms. Copeland made the following comments on the extent she feels students have benefited academically from block schedules and concluded the discussion:
I’m a test coordinator at Crim and the economics teacher is having a fit because of the way we did the economics test. We’re on the 4 x 4 and she said that the group that she had from August to October is our first quarter, which is first semester, did well. However, the group she got from October to December she only taught them for about a month and it was time to give the test. She is having that same problem now with the group that she picked up in March. She is giving the test on Friday and she feels that she has not covered enough material with that group of kids to pass.

5. If given the opportunity, what would you change about your current schedule?

Ms. Morris began the discussion and stated, “I would change to traditional. I would have a planning period everyday, a shorter period and I will end up teaching the same amount of classes.”

Ms. Dee responded to the aforementioned statement and responded to this question by stating:

But, will they get enough credit? The reason they went to the seven- and the eight-period day is because in order for them to graduate on time and get enough...whatever, they have to add another class period. Six times four is 24 classes, so you don’t have room for any electives and other things that high school students do because you have to have 22 to 24 credits to graduate. So, everything you take would be something you need to graduate. You don’t have any room for failure or repeating because you only have six classes a year. So, that’s why it went to the block scheduling.

Ms. Morris made additional comments by saying, “There are many opportunities for students to pass classes. They know they have the same opportunities as everyone else, but during the school year they can go to night school and day school. It’s not serious.”

Ms. Tonya Fry also stated,

What happens also in our school, when I first started in APS a child could take six classes. Another reason they went up was the number of classes we needed to offer during the day. That’s all it is. So the freshmen and sophomores can’t do this. The number one time our children fail any classes would be ninth grade and the second would be tenth grade. So, really that going with less than what we have is not really going to get them out at all.
Ms. Renee stated, “And the same thing with summer school. Summer school’s first priorities are juniors and seniors. They can only take one class.” Tonya Fry reiterated and responded by saying,

But then again, the requirements for summer school are very stringent. You can only have 10 days absent. You can’t be a truancy problem. You can’t be a problem socially or emotionally. So, in other words, we are stuck with the playing line of teaching seven or eight classes. We’ve got to do it.

Ms. Cole offered her opinion related to changes in the current schedule and responded by saying the following:

Nothing really. One thing I would like to investigate is the 4 x 8 a little more. I would like to see a more balance of electives in coursework so that seniors or juniors won’t be overwhelmed like students are now. That’s a problem. I have a senior homeroom and that’s their biggest complaint. They have all of these projects at one time. I love the 90-minute schedule as a science person, but I would like to see a balance. Most students are overwhelmed. I think if they had a balance between electives and core curriculum, I think it would make it easier for them to accomplish the things that they need to accomplish.

Dr. Sears described her feeling in the following manner:

In my ideal world, it would be fewer classes. I like the 4 x 4 because you have only three classes and you can concentrate on those three. I like completing a course by December. I want the whole time with them, but that’s just my idea. I know that you just can’t have three classes. You will not have enough credit, but if I could that’s what I would do. If you can’t do three, do the six, I want to see them everyday. I like the 90 minutes, but I don’t want to finish the year by June.

Mr. Bo Waters responded, “I’m on 4 x 4. I wouldn’t change it.” Dr. Ray agreed,

“Wouldn’t change a thing.” Dr. Ugo Kale also concurred, “We’re on 4 x 4. I wouldn’t change it.” Mr. Carl made the following comments in response to the question:

When I think about it I seem to like the 4 x 4. I understand what Ms. Morris is saying about the six and being able to see your students regularly, but you still don’t have that factor like Dee said. There’s no cushion. I know that we help our students along in everything possible, every way possible in terms of providing
with added instructional strategies. But ideally, I think when students you see regularly and you establish a rapport. You deal with the learning cycle where they know what to do everyday being a block schedule or a traditional schedule. It’s embedded. Once they understand it and it becomes customary, it’s easy for you to go “roll out” instruction. It’s easy for you to do you labs. It’s easy to have the questions and answers, and get to the higher ordered questions, to get them to do science and math projects, etc. In that way maybe you have that. You have the overall............multiple students or department so that students aren’t so overwhelmed with projects. Some of these projects can integrate support that builds upon the other. You can use science, economics, and math projects all in one, all together.

Ms. Dee summed up the experience by stating the following:

I have two children who have completed 4 x 4 in Cobb County. Cobb County was one of the first schools to go 4 x 4. They have 4 x 4 with eight classes during the year. This particular school has been very successful with it, whereas other schools have not and have chosen to get out of it, 4 x 4. I think we need more teacher training and more leadership training for administrators towards focusing the course on exactly what it is you have to teach. It’s very hard for teachers to change the way that they have been teaching. When you teach a whole year, you tend to stay more on one subject. Now that testing is the end-of-course test, we are going to have to learn how to back up what we teach and only teach what they say they have to know by a certain time. Therefore, we can get ourselves in a better way to finish a class during that one semester. They’ve mastered it in other school districts and they have mastered it across the country. We need to look at more of that and take a lot more time. I know we try to focus in science on giving those pathways or whatever you call them; scope and sequence and everything, but I don’t think it has been embraced. That’s what it is. It’s more planning. The 4 x 4 would be the ideal to have but it’s going to take a lot more work from the district.

Ms. Rowland offered her opinion on the question, responding in the following manner:

I’m not sure about the 4 x 4, but I hear you saying that implementing it sometimes can use that structure to bring in prerequisite materials where children are deficient. That particular 4 x 4 offers you the opportunity to boost up what a child needs. The course actually could extend my understanding from a full year under the guidance. Nothing else gives you that opportunity.

Ms. Cole responded to the discussion of this question as follows:

I can remember when I first started at Carver. I was there the last year of implementing 4 x 4 before the restructuring into other schools. The students
complained that the dropout rate was high because 4 x 4 had been taken from them. Basically at Carver, we had daycare. We had students out on maternity leave and those type things. On the 4 x 4, they were still able to come back and finish the year out without being constantly behind. So, the students in that case really liked the 4 x 4. That was one of the things students really loved.

Additionally, Ms Dee responded to this question by stating,

Even with that, with the 4 x 8, we'd offered more semester courses. Courses that were over in a semester, which may be electives, or teaching one semester botany and one semester genetics. Have more of these types of things so they won't be so overwhelmed. But there is data out. I don't remember whether it was in science or at a workshop where we studied the data of a district operating on block schedules, but there wasn't any benefit. There weren't any significant differences between the two. However, you had to also not look at how well they did and you have to look at the dropout rate. Kids are staying in school longer. They are graduating. They are graduating on time. Things are getting better, so something is improving. Maybe offering the seven or eight courses gives students the opportunity to complete 4 years of high school and go to college at higher rates. There are some things that we already see that have improved with the system by going to blocks. Everybody is on to something.

Dr. Ray responded to the aforementioned statements and replied by saying:

I don’t know. I think that depends on the school system, the demographics and everything else. Because a lot of our students, you notice those graduation rates. I assumed each class is getting smaller and smaller and due to graduation tests. So, you don’t have more seniors who are graduating; those graduating classes are getting less and less every year, especially, the last couple of years. They’re getting smaller.

Tonya Fry added to the discussion and responded by saying,

I was involved in a think tank, The Alliance for Education in D.C. and what they said, according to the Educational Trust, they’re graduating less seniors nation wide. The Educational Trust also said that the average ninth grader comes in reading on the third- to fifth-grade level and that is across the nation. So those figures --- so for us to offer the students fewer opportunities are really our fault. So, we are almost stuck in this, where we have to do this. And a lot of our children, especially our seniors, are “doubling up” on courses. That’s why there is no room in the schedule for electives because in the ninth- and tenth-grade level, you can’t fail anything. Everything is a requirement. They are now doing remediation when they should have been taking electives. So that elective is now a required course.
Dr. Ray responded to the comment by saying the following:

And you look at the CRCT data of those kids who are feeding into our school. It’s terrifying. The scores are so.......they are so unbelievable, what we have coming in. Take the time to just look at those scores of those students. A lot of those kids’ percentiles are just unbelievable.

Ms. Tonya Fry stated, “As a nation, it’s that way.” Dr. Ray responded, “My point that I am trying to make is that in the 4 years that you have them, ninth, tenth, eleventh, and twelfth, you are to move them from there in order to remediate.” Ms. Tonya Fry replied, “On an eighth-grade level?” Dr. Ray concluded the discussion of this question by responding as follows:

Right, whether on the third or fourth level, when they come here you’re responsible for preparing them to pass all of these graduation tests. Even though, the EOCT is only a certain portion or percentage of the grade, so they still can have the class and have that up high enough so they can still pass the class. But, you can’t do that with that Georgia High School Graduation test.