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A Case Study of the Impact of an Intervention Scheduling Model on Academic Achievement in English and Mathematics by Students in Need of Remediation

Dora Harvey

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A CASE STUDY OF THE IMPACT OF AN INTERVENTION SCHEDULING MODEL ON
ACADEMIC ACHIEVEMENT IN ENGLISH AND MATHEMATICS BY STUDENTS IN
NEED OF REMEDIATION

by

DORA D. HARVEY

(Under the Direction of Gregory Chamblee)

ABSTRACT

This case study explored the impact of a scheduling intervention on the Georgia High School Graduation Test standardized achievement test scores of students identified as in need of remediation in the content areas of English and mathematics, paired with the perception of this scheduling model from key informants in the study. Students in the scheduling intervention were enrolled in a year-long, alternating content-day block scheduling model.

The quantitative portion reviewed Georgia High School Graduation Test score data for students who participated in a modified block (referred to as Schedule Two) results were analyzed, indicating passing percentages, and number for each year, and content subject addressed in the study. Schedule Two students were identified as being at a high risk for failing standardized tests during their initial attempt based upon previous results. Results indicated Schedule Two students had higher than expected Georgia High School Graduation Test English and mathematics passing rates based on prior standardized test scores.

The qualitative portion reviewed transcripts from interviews of teachers and students involved in the program. Dominate themes and patterns emerged. Results indicated that teachers

and students perceived a schedule that offered year-long pacing was a better fit academically for students in need of remediation. Both students and teachers felt placing students in need of remediation all in the same classroom often lead to more behavior problems than the randomly computer-generated 4x4 block classes at the school. Both teachers and students noted difficulty adjusting to the alternating content day schedule. Implications of these findings are presented for educational leaders.

INDEX WORDS: Block schedule, 4x4 block, Modified block schedule, Standardized tests, Students in need of remediation

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DEDICATION

Na-

You had to leave me before I could share this new milestone with you. It is still so very painful to think of you not being here. I still reach for the phone to call you, only to recall you are gone. I struggle with conflicting emotions- one of a young girl, not being able to cope or accept your passing and, on the other hand, the feelings of a woman who is thankful to God for giving you to me for an aunt. Dedicating this dissertation to you was the start of my healing process. When the pain of my lost comes, I can now say, thank you, Father, for giving my aunt such a wonderful husband, children, grandchildren and great-grandchildren. And each time I touch this dissertation, which I dedicate to you, I feel your presence and know you would be proud of the work I have done. This gives me peace and helps me to say the good-bye to you, which I could not say at the time of your death.

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helped me by plotting my ideas on the board in a concrete way for better understanding, helped me by binding copies for my committee members, or just gave me words of encouragement, thank you.

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CHAPTER 1

INTRODUCTION

Citizens of this country are beginning to acknowledge that the nation's high schools are in turmoil as policymakers, business leaders, and commentators call attention to the country's low graduation rates (Herling, 2012). But the low graduation problem, although severe, is only one indicator of the trouble plaguing the country's secondary schools. Of those who enter high school, only about 70 percent will graduate—one of the lowest rates among industrialized nations (Greene & Winters, 2006). As important, however, is the fact that, of those who do receive a diploma, only half are academically prepared for postsecondary education (Greene & Winters, 2005). America's high schools are not preparing many of their students for the demands of both college and the modern workforce. Weak curricula, vague standards, and lack of alignment between high school content and the expectations of colleges and employers result in the need for reform.

Enhancement of student achievement in the United States has been a major focus of education over the past six decades (Weil, 2009). The National Defense Education Act of 1958 (NDEA) was passed as a reaction to the Soviet's successful space launch of Sputnik. NDEA stated, "The security of the Nation requires fullest development of the mental resources and technical skills of its young men and women" (Marshall, Sears & Schubert, 2000, p. 197). Public Law 107-110, enacted January 8, 2002, and otherwise known as "No Child Left Behind (NCLB)," requires states to make adequate yearly progress (AYP) in order to receive critical federal education funding. Under NCLB, states are now under a higher degree of educational accountability than ever before in history (Brill, 2011). Criteria for demonstrating AYP in

Georgia high schools include proficient performance by all student groups on state-wide standardized tests of English and mathematics and acceptable and incrementally increasing graduation rates.

Each of these acts not only increased expectations of the general student populace in mathematics and science, but also increased accountability for teachers and administrators and brought to light some glaring inadequacies in classroom productivity and standardized test scores. Likewise, the Individuals with Disabilities Act of 2004 (IDEA) and the Elementary and Secondary Education Act of 1965 (ESEA) sought to serve the ever-changing needs of student populations by providing increased support through modifications and/or accommodations, creating a more stable, caring workforce, and increasing accountability for administrators and educators (Weil, 2009). Additionally, each of these acts have led to an array of legislation designed to improve the educational performance of all students, to close the achievement gap among certain groups of disadvantaged students, and to provide an equitable educational experience for students with identified disabilities (Weil, 2009).

In an ideal world, every student would enter America's classrooms in a state of readiness, equipped with the basic skills, abilities, and work habits necessary for school success. Kindergartners would arrive knowing their shapes, colors, letters, and numbers; middle-schoolers would be reading on or above grade level and possess computational and logical thinking skills sufficient to master algebraic operations, and high school students would not only possess advanced reading comprehension and critical thinking skills, they would retain the same curiosity and enthusiasm for learning they had on the first day of school. Unfortunately, the situation that faces America's teachers today is far from the idyllic scenario suggested above.

Yet, although students do not enter school on an equal footing, educators are charged with finding ways to level the playing field and make certain that all students attain at least a minimal level of basic competency (Decker & Bolt, 2008). Alternative scheduling structures which allow more material to be covered in the same amount of time have been developed and implemented as measures to enhance students' ability to successfully graduate from high school. Block scheduling has emerged as one of the most common forms of alternative scheduling at the high school level (Canady & Retting, 1995).

Block scheduling allows more courses to be taught in an academic year because daily class time in each course is lengthened so that formerly year-long courses can be taught in one semester. Many secondary schools, use a 4 x 4 block schedule in which each semester, students take four classes approximately ninety minutes in length, thus allowing the possibility of earning up to 32 Carnegie units toward graduation (Georgia Department of Education, 2007). While many students have adapted favorably to 4 x 4 block scheduling (Candy & Retting, 1996; Marchant & Paulson, 2001), this reform has resulted in some unanticipated consequences for some students, particularly as it relates to their performance on the state-wide assessments required for graduation from high school, the Georgia High School Graduation Tests (GHS GT).

For example, students who are scheduled to take courses whose content is included on the GHS GT in the fall receive more hours of instructional time in these subjects prior to testing than those who take the classes in the spring. Conversely, students who are scheduled to take these courses in the spring, when the GHS GT is given, receive considerably fewer instructional hours per subject, but have the advantage of being able to take the test in close proximity to the administration of the instruction. The issue is further complicated by the fact that some students

have difficulty mastering a year's worth of material in only one semester (Zepeda & Mayers, 2006). Therefore, block scheduling may negatively impact the performance of many students on the GHSGT, especially those who have been identified as being in need of remediation, thus indirectly impacting graduation rates as well (McLeod, 2005).

To address some of the problems associated with 4x4 block scheduling, one large suburban high school in a Southeastern metropolitan area has implemented a modified block scheduling model as an intervention strategy. As a whole, the high school operates on a 4x4 block schedule. In this scheduling format, each student attends a total of eight classes for the entire school year. Within each semester, each student attends four 90-minute class blocks per day. Each of these class blocks have duration of one semester, after which the student switches to four different class blocks. The students enrolled in the modified block schedule follow the same block schedule for three of the four blocks as the students in the general school populace. The modified block schedule students' schedule differs for only one block per semester. In this block, which is strategically placed during the third block period, the students in the modified block schedule classes are assigned to two teachers and content areas (English and mathematics) for this block. The students are randomly placed in either the "A" class or the "B" class, and this is how they are scheduled for their English and mathematics classes on alternating days for the entire school year. This study will elicit perceptions of the modified block schedule by key participants at the school, which include the students and teachers involved in the schedule, as well as other teachers in the school who may have come in contact with students and teachers involved in the alternative schedule.

Statement of the Problem

Student achievement for all is the current mantra in today's public schools (Schaffhauser, 2012). Demand for accountability has caused high schools to look at how they can best meet the academic needs of *all* students to ensure that all of the students in their care meet standards set by institution and/or state requirements. Often times, innovations such as block scheduling have been selected as a means for improving students' performance on standardized achievement. A review of the literature on the effectiveness of block scheduling as a method of improving student achievement is generally positive (Flocco, 2012). However, a few studies have shown a slightly negative impact on subgroups composed of primarily low-achieving students who would likely be considered at risk for academic failure (MacPherson & Lawrence, 2000). Much of the block scheduling research focuses on the general school population and does not address the impact of block scheduling on low-achieving students, indicating a need for further research in this area. Very little research has been conducted on the impact of using block scheduling as an intervention method for enhancing the achievement of select students who have been designated as candidates who may not pass the state high school English and mathematics graduation test. Therefore it is the researcher's purpose to determine the perceptions of key informants about the modified block schedule. Determining the perceptions of the participants is especially important because the maintenance, retention, and longevity of reform are contingent not solely upon numerical results, but also perceived ideologies about the intervention programs from key informants (Gardner, 2004).

Research Questions

An overarching research question guided this study: What is the impact of a modified block schedule an intervention tool to increase achievement of students in need of remediation on the English and mathematics portion of the Georgia High School Graduation Test (GHSGT)?

The researcher used the following sub-questions to answer the overarching question:

1. How have students identified as being in need of remediation performed on the GHSGT using the intervention scheduling model?
2. What are students' perceptions of the intervention block scheduling model?
3. What are teachers' perceptions of the intervention block scheduling model?

Significance of the Study

This study added to current block scheduling research by researching the perceptions of a modified block schedule as an intervention program intended to impact the GHSGT scores of high school students identified as needing remediation to meet mathematics and English standards. Educational leaders are accountable for the success or failure of their schools. The ability to demonstrate test score differences is only one component of a successful intervention program. The data gathered provided a snapshot of the holistic impact of an intervention scheduling model. This study will be of interest to researchers for several reasons. First, this study provided research on holistic impact of intervention programs on schools. Second, this study provided research on how intervention schedules, like the one in this study, could be utilized to enhance standardized performance of selected groups of students. Finally, this research could be of great benefit to researchers attempting to enhance the performance of

students who are slated to take standardized achievement tests. Standardized achievement tests assess basic skill competencies. Students identified as having challenges and/or difficulty passing standard achievement tests may benefit from continuous year-long instruction, coupled with a more likely chance of having content instructions at the time of or near the time of taking the assessment.

Procedure

The research design, setting, and data sources are explained in detail in the following paragraphs.

Research Design

This study was designed to determine the impact of a modified block schedule an intervention tool to increase achievement of students on the English and mathematics portion of the Georgia High School Graduation Test (GHS GT). Since the investigation centered on one school over a three year period and multiple sources of data were needed, a case study design was utilized. According to Yin (2008), case study design approach fosters an in-depth scrutiny of a particular phenomenon and its impact on a population, making the case study model appropriate when investigating a phenomenon in a real-life setting. Both numerical and qualitative data were used to give a snapshot of the modified block schedule program.

The Setting

The school for the study included five administrators, 203 certified teachers, four counselors, approximately 2,400 students, two teachers in the intervention program, and 40 students in the modified block schedule. The school follows a 4x4 block schedule. Students

following this schedule will be hereafter referred to as Schedule One. The focus of this study is on the students in the modified block schedule, hereafter referred to as Schedule Two.

Data Sources

First time takers' Georgia High School Graduation Mathematics and English test scores for students enrolled in Schedule Two were charted for descriptive purposes. Schedule Two teachers, Schedule One teachers, and Schedule Two students were interviewed. Results of the test scores and interviews were used to determine the perceived impact of the scheduling intervention.

Data Collection

The quantitative segment of the study analyzed first time takers' English and mathematics Georgia High School Graduation Test scores. For the qualitative portion of the study, Schedule Two and Schedule One teachers, and Schedule Two students were interviewed to ascertain their perceptions of the impact of the scheduling intervention. Interviews were examined using open-ended questions. Chapter Three contains a more detailed description of the data collection methods.

Limitations and Delimitations

Limitations of the study were: (1) The researcher was employed at the school in the study, many of the students interviewed were been former students of the researcher and all of the adults interviewed were co-workers of the researcher; (2) The scheduling intervention model was school-specific, so generalizations to other similar scheduling interventions may not be

appropriate; (3) the study was conducted approximately one year after the cessation of the intervention block schedule, thus perceptions might be affected; (4) the researcher only had access to Schedule Two students who participated during the 2010-2011 school year.

Delimitations of the study were: (1) The study was limited to English and mathematics classes only and therefore may not be generalized to include other content areas; (2) It was assumed that the responses given by participants reflected their perceptions of the impact of scheduling on the academic achievement of participating students and not that of a personal preference for or against block scheduling.

Definition of Terms

Accelerated or semester 4x4 block schedule. The standard 180-day school year is

divided into two 90-day semesters. Each semester, students attend four 90-minute classes daily (Canady & Retting, 1995).

Alternate block schedule. In the alternate day A/B schedule, between six and eight extended classes meet every other day throughout the school year (i.e., half of the classes meet one day, and half meet the following day). A modified A/B block schedule usually includes one or two periods that meet every day, in much the same way as a traditional schedule (Canady & Retting, 1995).

Block schedule. Block scheduling refers to a restructuring of the school day into classes which last longer than the traditional 50-minute class period. At least part of the daily schedule is organized into larger blocks of time to allow flexibility for varied instructional activities (Cawelti, 1994). *Classroom teacher.* The classroom teacher assists students in

the learning process. This person is responsible for guidance, instruction, and giving lessons and assessments to pupils (www.merriam-webster.com).

First time test takers. Students classified as juniors in high school who are taking the GHSGT for the first time are identified as first time test takers.

Georgia High School Graduation Test (GHSGT). The Georgia High School Graduation Test is the exit exam required for graduation from a Georgia high school. The exam is given in five academic areas: English, mathematics, science, social studies, and writing. In order to receive a high school diploma, candidates must acquire a minimal basic competency score.

High school. A school, especially in the United States, usually including grades 9-12 or 10-12 (Merriam Webster, nd).

No Child Left Behind (NCLB). Additionally referred to as Public Law 107-110, NCLB legislation contains the most sweeping changes to the Elementary and Secondary Education Act since it was enacted in 1965. NCLB places major emphasis on teacher quality as a factor in improving student achievement and is based on principles of increased flexibility, local control, and stronger accountability at all levels (www.gaspc.com).

Schedule One. Schedule One refers to the standard 4x4 block schedule in operation at the school in the study. Each student on this schedule format takes four classes for the duration of each semester, twice in a school year.

Schedule Two. Schedule Two refers to the modified block schedule in operation at the school in the study. Each student on this schedule has his or her English and mathematics class on alternating days for the duration of an entire school year.

Students in need of remediation. Students identified by counselors and curriculum administrators as falling into one of the following categories between their freshman and sophomore years: the student failed either mathematics and/or English classes; or, the student failed to meet standards on End of Course Tests (EOCT) in mathematics and/or English.

Summary

Accountability for improved standardized test scores amongst American students over the past several decades has resulted in numerous restructuring of instructional delivery models. One of the most dominate reforms in public schools was the change from the traditional schedule in secondary schools to block scheduling. Canady and Retting (1995) reported that by the early 1990s, some form of block scheduling was implemented in 70% of American high school classrooms. There are several forms of block scheduling: the 4x4 is most proficiently used in high school setting, as in the school in this study. In the 4x4 block schedule, the students follow the same four different 90 minute classes for each of their two semesters. This affords them pacing for content instruction per day compared to the traditional six to seven periods while following a traditional schedule. Numerous studies have indicated improvement in overall GPAs as well as standardized test performance since the institution of block scheduling. However, subgroups of students identified as remedial or at-risk continue to plague school systems by failing to meet minimum basic standards on standardized assessments. Failing scores of students

challenge systems and administrators to examine all aspects of our educational system, including scheduling, in hopes of finding ways to provide remedial services to students in need within the schools' established structured setting, as in the case of the school in this study.

This study explored the impact of one scheduling intervention in a Georgia high school on the achievement of students in need of remediation on the English and mathematics portions of the Georgia High School Graduation Test. The researcher retrieved test scores of Schedule Two students who took the GHSGT during the 2008-2009, 2009-2010, and 2010-2011 school years and elicit the perceptions of several key informants. This study employed a case study design consisting of data from test scores, as well as the use of open-ended interviews designed to elicit perceptions of students in need of remediation and their teachers about the scheduling intervention.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

This chapter reviewed the current literature on class scheduling as a strategy for improving academic achievement in secondary schools. The current status of academic achievement in the core subjects of English and mathematics was appraised, including consideration of the historical trends and patterns of sub groups and the achievement gap. Successful reform efforts were analyzed. A focus on national and state efforts to improve curriculum and instruction was researched, as well as the efforts involved in the preparation of teachers and related school reforms. Factors at the school level that were seemingly related to students' academic achievement in English and mathematics were examined.

Need for School Reform

The implementation of successful, wide scale school reform is a problem which Americans have wrestled with for centuries. Early American reform movements began with the concept of compulsory education. After the implementation of mandatory schooling, education became systematized enough to require reform (Ravitch, 1983). Afterwards, reform efforts included a prolonged series of classical and progressive reforms over a span of several decades. Many of these movements were spearheaded by experts in sociology, psychology, or philosophy. In the late 19th century, transcendentalist educator Amos Alcott supplemented his classrooms with physical education, interactive lessons, and field trips (Packer, 2007). Later, John Dewey's pragmatist movement of the early 20th century created counseling programs, a strong

administrative presence in schools, the formation of large, centralized high schools, and the practice of curricular differentiation (Ravitch, 2000). Dewey's approach was a direct contradiction to the previously utilized concept of the classical education, which involved private, expensive tutors, which most Americans could not afford (Campbell, 1995). In the latter part of the decade, movements fueled by the Civil Rights movement brought desegregation, affirmative action, busing, and the abolishment of school prayer (Ravitch, 1983). Improvements in education during this turbulent time gave Americans large social returns in health, well being, and wealth. Societal tensions in America, which continued into the 1970s and 1980s, allowed educational reformers to create massive efforts to eradicate the United States Department of Education and to instill cultural literacy into conventional educational practices.

Educational reforms in the 21st century are gradually becoming more driven by a growing perception of successful endeavors in education and how to go about successfully improving instruction and education in schools (Glazek & Sarason, 2007). More current modern reform consists of movements and executions, such as the creation of charter schools, the employment of longer school days, the facilitation of class size reduction, the focus effort on improved education of teachers, the usage of school vouchers, and the mainstreaming of special education students (Brill, 2011). Additionally, there has been a recent push for outcome based education which forces teachers to accept accountability for the academic performance of their students on state mandated standardized tests (Ravitch, 2000).

For at least five decades, a wide variety of educational reforms have been instituted in an effort to improve the academic performance of American students. These reforms have brought about more stringent government controls, higher performance standards, and more punitive

testing measures for students (Smyth, 2006). As a consequence, educators at the local level are trying to fit more core subject material into their already full curricula. The core subjects include English, mathematics, science, and social studies. Although there has been a concerted effort to promote innovation and reform in educational settings, the successful implementation of any major change requires effective leadership, most importantly from a school's administrator.

For the past 200 years, public schools have evolved from one-room schoolhouses to schools that range in size from 300-3,000 students. They have a multitude of grade levels, provide instruction in diverse content areas, and maintain extensive facilities. Smaller schools, which are those determined to be less than 650 students, are mainly still found in rural areas, whereas many of the metropolitan areas boast large secondary schools consisting of over 2,600 students, which is considered to be large (Werblow & Duesbery, 2009). The secondary school created after the Industrial Revolution was a largely secular public institution, operated by the state or by other government authorities. Otto (2005) compared the actuality of the modern classroom with the idyllic views that are depicted in the media and found the comparison to be a distant one: school is depicted as being a place that “has an idyllic feeling of ‘just right’: there’s enough food because children appear well nourished, enough medicine because children are rosy cheeked and active, enough care because everyone seems to fit together in a perfectly homogeneous grouping” (Otto, 2005, p. 461).

Unfortunately, this ideal depiction of a 21st century school setting is not a realistic one. Modern schools are vastly more complex and have difficulties meeting the needs of constantly changing demographics. Current classrooms include bilingual education professionals who assist students who are not native English speakers, electronic equipment to support the needs of

visual, hearing, or other impaired students, computers, “smartboards,” and a vast array of children with differing skill levels, racial and socioeconomic backgrounds, emotional, psychological, and cognitive disorders, and learning styles (Konrad, Joseph, & Eveleigh, 2009). What has been a constant over the past few decades amongst all schools systems are innovations in order to meet the ever-changing needs. Reforms from the past several decades (e.g. Elementary and Secondary Education Act, No Child Left Behind, etc.) have created regulations on student performance and expectation requirements which created more stringent government control, more accountable testing measures and rapidly increasing standards for students in the United States (Flocco, 2012; Smyth, 2006). Administrators, school boards and educational reformers, have consistently sought out changes in curriculum structure, and methods in order to meet new mandates.

Educational reform is not a new issue for educators. According to Gardner (2004), one of the first advocates for school reform, E. B. Sargent, believed that “a wider generation of educational and social reformers with optimistic ambitions for the resolution of an non-egalitarian and hierarchical social fabric through the creation of organic bonds of mutual goodwill and responsibility” (Sargent, as cited in Gardner, p. 661) was the only way in which effective reform could be implemented.

More recently, the widespread call for educational reform regained momentum in the early 1990s, when American children trailed significantly behind other first world countries on standardized achievement (Marshall, Sears & Schubert, 2000). Veal and Schrieber (1999) reported on educational reformers searching for ways of increasing student achievement and performance on basic standardized tests. These early reforms of the 1980s and 1990s frequently

led to more instructional time and the wide spread adoption of personal interventions for individual groups of students. Today, the reform focus has shifted from public awareness to government safeguard (Annual Yearly Progress, or AYP) (Georgia Department of Education, 2007). This measure, which was intended to increase accountability for educators, has become, for many, a type of reform that has proven to be unyielding and labor intensive (Chute, 2012).

Based upon the awareness of the importance of reform through intervention, it is essential to determine how interventions are carried out in an academic environment. In order to amass the wide-scale changes necessary to implement reform, sometimes intervention is necessary. Interventions are classified by George, White and Schaffer (2007) as being primary, secondary or tertiary. Primary interventions, which include direct teaching and aggressive restricting of teaching methods, are those which are designed to be placed across all setting and to meet the needs of most students within the school. Secondary interventions are those aimed at students who have been identified as having significant risk factors and require most specialized forms of assistance. Lastly, tertiary interventions are aimed at the 1 to 5% of the student population that has “long-standing problems... for whom primary and secondary level interventions prove insufficient” (George, White, & Schaffer, p. 42). Martinez and Young (2011) reported that many teachers, especially veteran teachers, become frustrated with having to find ways to re-teach and re-work concepts that they have already approached. They further asserted that the provision of intervention methods is a critical step in helping students who are identified as “struggling” to become successful in general education settings.

Intervention methods are most successfully integrated when coupled with solid, consistent reform measures. Togneri and Anderson (2003) identified seven factors that are essential to school reform:

1. Committing to sustaining reform over the long haul;
2. Acknowledging poor performance and seeking solution;
3. Using a system wide approach to improving instruction;
4. Instilling visions that focus on student learning and guided instructional improvement;
5. Making decision based on data, not instinct;
6. Adopting new approaches to professional development that involve a coherent, district organized set of strategies to improve instruction;
7. Redefining leadership roles. (p. 52-54)

Once a school or district realizes that reform is necessary, then it has several models to adopt. Togneri and Anderson's intervention methods are essential elements in developing scheduling that fits the needs of a varied student populace. Sustaining educational reform requires the knowledge, commitment, and due diligence to effectively create change. The process of making decisions is one of the primary factors in school planning, which is a malleable aspect of restructuring.

One aspect of school planning that is well within the principal's control is scheduling. At the high school level, block scheduling has emerged as a popular reform, designed to improve student performance on standard achievement tests (Fisher & Frey, 2007). Canady and Retting (1995) found that by the early 1990s, some form of block scheduling had been implemented in

up to 70% of American high school classrooms. Few methods of reform have been met with such harsh scrutiny as the implementation of block scheduling.

American educational leaders have been criticized for too often “jumping on the bandwagon” of new, untested reforms, and adopting changes, such as block scheduling, without fully exploring the impact of such changes (Marchant & Paulson, 2006). Arising in part from questions raised by the National Education Commission regarding the effectiveness of the traditional Carnegie unit, block scheduling was proposed as a remedy for the time limitations inherent in the traditional six or seven period school day (Marchant & Paulson, 2001). It was believed that the extended 90 minute class period would allow teachers to use more innovative practices and concept-oriented activities as opposed to knowledge-oriented lectures (Canady & Retting, 1995). Biesinger, Crippen and Muis (2008) reported that advocates of block scheduling believed that this type of schedule would allow a deeper investigation of topics and more authentic learning experiences, such as labs, cooperative group work, and project-based learning.

A massive, country-wide implementation of block scheduling had been a recent trend for accommodating the growing number of credit hours, curriculum mandates, and standardized testing regulations. While proving itself to be a worthy adversary, primarily for educators who have found other systems to be working effectively, much of the literature about block scheduling confirms the idea that it is useful in implementing accelerated curriculum and giving students the opportunity to get themselves into a post-secondary track. Knesting (2008) stated,

The most effective means of serving students at risk is through the development of alternative school settings... these settings are better able to keep students in school because the culture of an alternative school- administration and organization, teacher culture, student culture, and curriculum- is focused on meeting the needs of individualized students. Most of the studies involving block scheduling have been spread across four primary areas that are important to students on an individual basis: student

grade point averages, discipline, and student attendance and student performance of standardized tests (p.7).

The creation of alternative scheduling methods is one way in which changes involving these critical areas have been improved. Because the at-risk population is especially susceptible to having academic deficiencies, specifically in regards to standardized testing (Blazer & Miami-Dade County Public Schools, 2011), alternative scheduling formats should be considered as intervention tools.

Because the block schedule has been described as one approach to restructuring, the question of whether substantive change has actually taken place because of the changes in scheduling pattern. Much of the literature asserts that, with the extended time, teachers are better able to use a greater variety of instructional strategies that address the learning needs of students and that this process leads to increased GPAs (Canady & Rettig, 1995; Jenkins, Queen & Algozzine, 2002). In his research with Hotchkiss (1985), Canady found research that suggested that block scheduling was a highly effective way in which to provide high impact instruction, specifically to the at-risk population, during each moment of the school day where time is focused on student learning and quality instructional time (p. 347). In a similar study conducted two decades later, the determinations brought about by Canady and Hotchkiss's research held firm by other researchers. Leithwood, Louis, Anderson, and Wahlstrom, (2004) established that class-size reduction, especially implemented within a form of parallel block scheduling, produced a large increase in academic achievement among under-achievers, specially socioeconomically disadvantaged students. Additionally, they determined that the various implementation of the block schedule, when correlated with support services such as Title 1, had an overwhelmingly positive effect on the grade point averages of lower achieving students.

Canady and Retting (1995) and Jenkins, Queen, and Algozzine (2001) reported that block scheduling provided high impact instruction for low-achieving students. However, block scheduling can be implemented in a number of ways, some of which appear to be more effective for struggling students than others. There are many types of block schedules currently being implemented. The following methods established by Canady and Retting (1995) determined the five major types of scheduling currently used throughout secondary schools in the United States. The most widely used form of the block that has been instituted in the United States is the A/B, or alternate day block. Students who follow this schedule have between six and eight extended classes which meet every other day throughout the school year. A student following this schedule would have all of his or her classes alternate on a daily basis, incorporating core and elective subjects and inter mingling them.

A modified A/B block schedule usually includes one or two periods that meet every day. Although it is similar in many ways to the traditional A/B schedule, certain core subjects are transposed every other day instead of every other semester. For example, a student would still take eight classes for the entire school year, but instead of having mathematics for the fall semester and English for the spring, he or she would have his or her mathematics and English class daily. This scheduling format gives the students the opportunity to follow a more traditional schedule, while still maintaining a block schedule timing sequence and format. As illustrated by Viaderos (2001) “Monday, for example, might be taken up by physical education, science, English, and history, while Tuesday’s schedule features French, algebra, music and a second mathematics class” (p. 16).

The second, and still widely popular, application of the block is 4x4 “semester” block (Canady & Retting, 1995). In this system, the 180 day school year is divided evenly into two 90-day semesters. In each of these semesters, students attend four 90-minute classes daily. For example, a student following this schedule would have a total of eight classes that he or she takes throughout the entire school year, divided into each semester. In the semester block, he or she would attend each one of his or her first four classes for a period of about 90 minutes each day. At the termination of the semester, the student would then switch to taking his or her other four classes for a period of about 90 minutes for the duration of the school year.

The last two forms of the block are generally used on an experimental basis and have little literature about their function, ability, or levels of success. The reconfigured school year block format, which has been adopted primarily to cater to the needs of at-risk students, (Zepeda & Mayers, 2006) has longer academic terms combined with shorter terms focused on activities such as student enrichment and remediation. This type of intervention schedule is used in special circumstances and should be put into place in situations where students need additional support and instruction, specifically for matriculation and standardized testing (Blazer & Miami-Dade County Public Schools, 2011). The final of the four most widely enforced adaptations of the block is called the intensive block, which varies in giving students either trimesters or periods where they have quarter-on, quarter-off class schedules. The students following this type of program receive concentrated instruction in a small cluster of related subjects through a series of shorter terms during the school year (Canady & Retting, 1995).

Of the four major types of block scheduling described by Canady and Retting (1995), two types (A/B and 4x4) are most frequently used throughout secondary schools in the United States.

In the A/B, or alternate day block, students take between six and eight extended classes, all of which meet every other day throughout the school year. Under a modified A/B block schedule, certain core subjects, such as mathematics or English, meet every other day for the entire school year, while other core classes and electives meet every day, but only for one semester. In a 4x4 block semester, students take four courses per semester, each class lasting approximately 90 minutes. Typically, each semester's schedule includes both core academic subjects and electives.

Research on Block Scheduling

Biesinger, Crippen and Muis (2008) found little empirical evidence that block scheduling was the best solution for achievement deficits in American high schools. Furthermore, Zepeda and Mayers (2006) found it difficult to isolate the impact of block scheduling from other variables. More importantly, perhaps, Canady and Retting (1996) found that although 50% of schools follow some form of block scheduling, there are inconsistencies in the effectiveness of block scheduling from area to area and among different types of school systems. Similarly, Marchant and Paulson (2006) reported differences in the attitudes toward block scheduling among various types of students, with high achievers expressing the most support for the block and low achievers showing considerably less.

Studies seeking to determine the effectiveness of block scheduling on such measures of achievement as grade point average (GPA), standardized test scores, and graduation rates have, by and large, been positive (Dunigan & Hoover, 2007; Jenkins, Queen, & Algozzine, 2002; Nichols, 2005; Trenta & Newman, 2006). However, Gruber and Onwuegbuzie (2001) found that

block scheduling did not result in higher grade point averages or higher scores on the Georgia High School Graduation Test. Moreover, the majority of block scheduling studies have focused on the achievement of the general school population; fewer studies have specifically focused on the impact of block scheduling on students who are challenged by a variety of intellectual, cultural, and economic limitations.

A few studies have shown that certain modifications of a block schedule, when combined with other interventions specifically aimed at meeting the needs of underachieving students, can be effective. Leithwood, Lewis, Anderson and Wahlstrom (2004) found that reduced class size with a parallel block schedule increased achievement among socio-economically disadvantaged students. Leithwood et al. also found that block scheduling combined with Title I services resulted in an increase in the GPA of lower achievers. On the other hand, MacPherson and Lawrence (2000) found that students on a traditional schedule performed significantly higher on their End of Course Tests in English, algebra, biology, and U.S. history than those on a block schedule.

The inconsistent and sometimes conflicting findings regarding the effectiveness of block scheduling in raising achievement of all students as well as the paucity of studies relating specifically to the impact of block scheduling on low-achieving students indicates the need for further research in these areas. The need for greater focus on ways to maximize the benefits class scheduling innovations as well as other interventions for struggling students is underscored by Smyth's (2006) finding that high school dropouts are increasing at an alarming rate in urban high schools and by Knesting's (2008) determination that the scores of certain sub-groups of

students negatively impact overall achievement totals on standardized tests, which by logical extension will adversely affect a school's ability to make AYP.

For students with supportive, middle class backgrounds, the change to block scheduling does not affect achievement (Gill, 2011). Most of these students are able to successfully accommodate the change and do not have problems meeting or exceeding the AYP standards. But for at-risk students, who already faced challenges meeting graduation requirements before the institution of new academic standards, the daunting task of achieving AYP based on their standardized test scores with a block schedule becomes nearly impossible (Gill, 2011).

Block Scheduling, At-risk Students, and Remedial Instruction

Because modern schools have taken on the responsibility of being places where students can grow and thrive, not just academically but socially and culturally, there has been a shift in the ways in which students are categorized in terms of how outside forces affect the ways in which they can prosper. A teacher's reach, more than ever, extends outside the classroom and new factors must be assessed regarding a child's chances to succeed. Because of these outside factors, the term "at-risk" was used by Druian (1987) to describe children whose chances to succeed were impaired before they even stepped foot into the classroom. The term "at-risk" applies to students who fit into one or more of the following situations:

1. Living in high-growth states;
2. Attending unstable school districts;
3. Students who are a member of a low income family;
4. Students who have low academic skills;

5. Having parents who are not high school graduates;
6. Speaking English as a foreign language;
7. Being a single-parent child;
8. Having negative self-perception;
9. Those who are bored or alienated;
10. Those who have low self-esteem;
11. Females who have children or get married” (Druian, 1987, p.7).

Frequently, educational reformers struggle to decipher between the terms “at-risk” and “remedial.” The at-risk student population differs from the remedial student population in a small number of ways. Although the remedial population of students is not homogeneous, Brophy (1996) differentiated between low achievers with limited academic capabilities and underachievers who work below their abilities by identifying some characteristics. These characteristics include, but are not limited to, inhibited classroom participation, low frustration threshold, low self-esteem, adult dependency, and constant need of attention (Brophy, 1996; Chazan, 1996). In case of insufficient instructional support, both “at-risk” and “remedial” students may develop symptoms of alienation or failure syndrome , or both, causing them to be underachievers. Remedial courses are sometimes used to describe courses other than the traditional English, reading, and mathematics classes.

The vast majority of under-performing schools serve disproportionately low- income families, large populations of non-native-English-speaking students, and a highly mobile, transient student base that has a large need of special services (Ziebarth, 2004; Kerka, 2003). According to White, Lare, Mueller, Smeaton, and Waters (2007), the at-risk student population

sometimes has needs that fall outside of the traditional school structure. While one strategy reported by Levin (1986) for improving the performance of at-risk students is schedule manipulation, Levin found that, in general, strategies which improved achievement among the general population did not necessarily increase achievement among students with learning challenges.

In addition to the physical circumstances affecting at-risk and students in need of remediation, expectations of the performance of these students in the block schedule scheduling format by teachers is not always particularly optimistic. Weller and McLesky (2002) reported teacher beliefs that the extended block classes are too long, particularly for students with attention problems. Other teachers noted that for students with poor organizational skills, an alternating block schedule can be confusing. Similarly, King-Sears (2008) asserted that the increased pace required by a block schedule is too fast and too complex for students who are in danger of school failure. As a result, student scores on large scale assessments may not be as high as they could be if the pace and focus of instruction were more responsive to the diverse learning needs of all students. The importance of developing ways to assist struggling students was heightened by findings of Pallas (1989), who estimated that by 1990, 40% of the school population could be considered in jeopardy of school failure, and that if the fertility rates of whites continued to decline, this percentage would almost certainly increase.

There is an intense debate about the ramifications of block strategies all across the field of education. Smyth (2006) described implementation of the intensive block, which gives students longer school days and a longer school year as being “a recycling of the same worn-out old recipe” (p. 287), and insisted that instead of manipulating scheduling and school hours, that

there needs to be a system that includes the “lives, experiences, cultures, family backgrounds, aspirations, and hopes of young people themselves” (p. 288).

The trend towards implementation of mass block scheduling has been found to have negative effects on student achievement on a large segment of the school population by several studies (Lawrence & McPherson, 2000; Marchant & Paulson, 2001). Researchers have found that students who were labeled low-achievers, (i.e., traditionally those who are at-risk, minority or students with disabilities) showed overall declining performances on their standardized tests and GPAs. In addition, researchers reported that these same students felt that they had trouble concentrating and they regretted not having certain subjects, such as mathematics and music every day. Many students felt cheated out of variety throughout their class schedule, based upon the teachers’ need to rush over material in order to fit everything into their schedules.

A growing number of educators seem to be increasingly frustrated with the challenges presented by the adoption of the block. In addition to studies conducted by Childers and Ireland (2005), other researchers (Decker & Bolt, 2008; Fisher & Frey, 2007; Nichols, 2005; Zepeda & Mayers, 2006) have pointed to the fact that it takes a tremendous effort and willingness to make special accommodations from the teaching staff to make block scheduling successful.

Even supporters of block scheduling admit that it is essential to use varied teaching strategies designed to meet the needs of high school students with differing abilities (Canady & Retting, 1995). Advocates for block scheduling point to the fact that alternating block schedule models allow teachers to “delve more deeply into the content of a lesson” and “provides students with more authentic learning opportunities, such as laboratory experiences, cooperative group work, and project-based learning tasks” (Biesinger, Crippen & Muis, 2008, p. 192). These

studies researched the effectiveness and of block scheduling. Some studies have shown that there is a positive correlation between various types of block scheduling and student achievement. For example, although the mixed method study conducted by Biesinger et al. (2008) found little empirical evidence to support the claim that block scheduling was the solution to fix America's schools, the data they collected concurs with some of the results found by Zepeda and Mayer (2006) in that one of the major problems with previous research studying the implications of block scheduling is that measuring the successes and failures of the system is difficult because isolating block scheduling as an independent variable when there are so many other factors that determine student achievement is very difficult. The Center of Education (2009) also drew a similar conclusion about block scheduling, finding that after the initial implementation of the semester block, although changes were relatively common in the core subjects, such as mathematics and English, they often showed a plateau effect in the general population. The question remains whether or not English and mathematics achievement by students in need of remediation benefits from instituting block scheduling.

Block Scheduling and Mathematics and English

Mathematics is a formal body of knowledge defined by axioms and derived theorems. School mathematics should reflect that structure and the ways in which mathematical topics intertwine. A mathematics curriculum should identify a progression of topics that build on the structure of mathematics, with topics in one year depending on topics covered in a previous year (Schmidt, Wang, & McKnight, 2005).

Mathematics is a school subject which is compulsory in most educational systems worldwide. Unfortunately, it has probably the most infamous reputation for being difficult to learn (Bair & Bair, 2010). As recent international research indicates, low achievement and failure in mathematics is strongly linked to social issues such as disadvantaged communities, civil rights, and inequalities associated with social class, ethnicity, race, and native language (Tulis & Ainley, 2011; Swanson, 2006). In addition to general learning disabilities, several cognitive characteristics are recognized among students who consistently obtain inadequate achievement scores on standardized tests in mathematics (Chazan, 1996). These include difficulties with reading and writing in a mathematical language, short-lived memory for mathematical procedures, and impediments in using symbolic representations, poor note-taking and homework habits and short concentrating periods (Karsenty, Arcavi & Hadas, 2007). Some low achievers in mathematics develop a negative mathematical self-representation, including stress, fear, and resentment towards mathematics (Karsenty et al., 2007). Finally, low achievers in mathematics have a tendency to view mathematics as an unattractive subject which forces them to be detached from their common sense (Karsenty et al, 2007). Research on suitable teaching approaches for low achievers in secondary school mathematics is still relatively limited. Several studies emphasize the need to tailor curriculum, allocation of class time, and classroom activities to students' characteristics (Chazan, 1996, 2000; Karsenty et al., 2006).

Social and emotional components of students in need of remediation mask their genuine ability to succeed and learn in mathematics (Arcavi et al., 1994). Secondary students with a history of constant failures in mathematics usually vacate further efforts in this direction. However, suitable learning environments which emphasize students' points of strength, allow

many of them to create sound mathematical products (Karsenty et al., 2006). Teaching mathematics to low-achieving students is therefore a specific area of expertise, which is by no means an easy undertaking. As stated by Chazan (1996), “Even in the best of circumstances [...] the job of teaching algebra to students who have not been successful in mathematics will remain a difficult challenge for those teachers willing to take it on” (p. 475).

Many educational researchers are struggling to find answers regarding improving achievement in mathematics for secondary students. Improvements in *basic* and *proficient* levels on National Assessment of Educational Progress (NAEP) have increased slightly, however, “Particularly when it comes to poor and minority students, improvements have been greater at the basic level than at the proficient level” (Olson, 2006, p. 10). In response to the findings of *A Nation at Risk*, the prominent 1983 report on American education from the National Commission on Excellence in Education, William Schmidt, Co-Director of the Educational Policy Center at Michigan State, cited curricula, lack of pedagogy mastery from higher level mathematics teachers, and a lack of consistency in course content, as causes of students' lack of achievement in mathematics. In regards to curriculum, Schmidt, Cogan, and McKnight (2011) have found that the issues that American secondary students have been maintained regarding instruction in mathematics to be ones founded in policy as opposed to instruction:

While it has been defined in many ways, to our way of thinking the specific mathematics content is the defining element of an educational opportunity in mathematics. Of course, many things can and do affect how that content is delivered. But our research focuses on equivalent, consistent content coverage because this allows a more precise definition of “equal educational opportunity” as it relates to learning. Without equality in content coverage, there can be no equality in opportunity related to that content, no matter the equality of other resources provided. The mathematics itself is at the heart of the opportunity to learn and thus is a very salient component in examining equality of educational opportunity. In addition, it is a factor that policymakers can address (p. 12).

Schmidt (2002) further stated that U.S. students often forgo advanced mathematics courses, which further contributes to an ignorance of mathematical theories, concepts, and applications. Thus, "high school mathematics is unlikely to overcome the poor foundation provided during U.S. middle school education and reverse the downward trend in comparative performance for average students" (p. 2). This discrepancy is felt even more strongly by the Latino, African American, and Native American populations, who drop out of these higher level mathematics classes, perform below standard on tests of mathematical competency tests, and are thus denied both important skills and a particularly critical conduits to economic and other enfranchisements (Schoenfeld, 2002). Several studies have found an inverse relationship between the socioeconomic status and course selection of high school students in respect to their mathematics classes. A large majority of the students profiled in these studies are labeled as being both minority and remedial students (Hoffer, Rasinski, & Moore, 1995; Lubienski, 2002; Mandeville & Kennedy, 1993). In their study of the National Education Longitudinal Study (NELS) data, Hoffer, Rasinski, and Moore found that students with highest SES complete approximately one and one-third more Carnegie units of mathematics than do students in the lowest SES group. Lubienski (2001) found a significant gap in the percentage of students taking algebra prior to ninth grade between higher and lower SES students. In later studies, Lubienski (2002) noted that amongst lowest SES students, more black students than white students took Pre-calculus (14 percent vs. 11 percent) while in the highest SES more white than black students took Pre-calculus (35 percent vs. 23 percent). Regardless, Lubienski concluded that course taking at the high school level was more closely related to socioeconomic than race, with the remedial student population lagging far behind their peers with regard to the average number of

classes that they take and successfully pass (Lubienski, 2002). Mandeville and Kennedy (1993) noticed a decline in the enrollment of advanced mathematics courses in high schools with a higher percentage of low socioeconomic students when compared with schools having a lower percentage of students with a lower socioeconomic status.

Mathematics education takes not only discipline and proper training, but the right tools, time management, and combination of resources in order to inspire students while still exposing them to the fundamental concepts of mathematics and reasoning. This task can be difficult even for a veteran educator. Schmidt (2004) has argued that even educators who have a strong mathematics foundation cannot teach properly in a context where their time and content are disseminated in ways which are not conducive to the needs of individual students:

My argument is simple. Even teachers with a strong mathematics background cannot teach well in a context defined by a fragmented and incoherent curriculum. Teachers feel the constraints of state and district standards that define their education world... Even the best trained teachers find it difficult to succeed with a fragmented curriculum. For all teachers, even those with the best preparation, the only real hope for success is a common, coherent, and challenging curriculum (p.11).

Block scheduling with regards to mathematics classes additionally hurts students who were already at risk of failure. They do, however, enable advanced students to move ahead, potentially exacerbating the achievement gap. Stanley, Spradlin, and Plucker (2007) determined that the combination of increased content and a compressed term seems to have caused students to struggle with mathematics. McCreary and Hausman (2001), who found that students in the trimester schedule had lower SAT mathematics scores than students in the semester schedule, hypothesized that this was because of the sequential nature of mathematics.

Students benefit from meeting regularly over the entire school year. Gallo and Odu (2009) determined that when too much higher order thinking information is compressed into a

short time frame, students might depend on rote learning as opposed to making the meaningful connections that promote mastery. This implies that practice and learning and opportunities that are spread out over time remain more effective for long-term learning. As more students who struggle academically are required to take college-preparatory courses as a part of their graduation requirements, they become the victims of the traditional block scheduling, and the achievement gap widens (Bair & Bair, 2010).

Although there is a distinct emphasis on the failure of American students to achieve passing scores on standardized achievement test in the area of mathematics, there is a gap in achievement in terms of English as well. Among the at-risk student and in need of remediation student population, this discrepancy is particularly severe. For instance, one in four Hispanic teens and one in five African-American teens read below the basic reading levels (O'Sullivan, 2006). Literacy is an increasingly complex issue in the secondary English language arts classroom. In classrooms around the world, teachers still address the expected foci of reading and writing but, within those areas, they also work with alternative texts, modern media, popular images and instructional technology. "Conceptions of literacy continue to expand in multiple directions, moving far beyond former emphases on reading comprehension and writing ability" (Cope & Kalantzis, 2000, p. 5).

Students identified as being in need of remediation and at-risk students can be successful. Hawkins (2007) found that students with special needs can achieve high standards in reading when schools address learning needs. The schools which experienced drastic achievements in literacy rates and achievement in standardized tests had strong leadership and incorporated effective practices that promoted a responsive learning environment. Any student who needed an

intervention, an alternate strategy, or other assistance received it, and the teachers addressed specific requirements as discreetly as possible. By differentiating instruction and analyzing student work, the school proved that students with special needs can achieve high achievement standards in the discipline of language arts when schools address learning needs.

English achievement, like mathematics achievement, is still an area of concern amongst educational researchers. Nichols (2005) studied student achievement and grade point averages in language arts and English after conversion to either 4x4 or A/B block scheduling. Longitudinal data, two years of data before implementation scheduling and five years after the conversion, were analyzed (Nichols, 2005). Additionally, Nichols examined the differences in the performance of minority and majority students and high and low-income students (Nichols, 2005). After conversion to block scheduling, students were found to take more English/language arts courses, and small increases in grade point average were observed (Nichols, 2005). Students of low socioeconomic and minority status experienced lower increases in achievement when compared to higher income and majority peers (Nichols, 2005). Nowicki, Duke, Sisney, Stricker, and Tyler (2004) conducted a study about the benefits gained by at-risk students who had been introduced to English instruction intervention programs which were structured around the block schedule. The study indicated that at-risk students enrolled in this intervention program were more likely to graduate from high school than non-risk groups. Intervention was attributed to teaching strategies that enabled students to navigate relationships. The researchers determined that because students were able participate in a 3-hour block of English, math, social studies, and humanities, there was an increase in student and teacher interaction time, and thus an increased ratio of retention.

Summary

Many educational reformers believe that pacing in class is a remedy for what ails the educational system. During the early 1980s, after studies were released suggesting the decline of the effectiveness of the American school system, educational reformers began looking for ways to increase student performance on standardized testing. One solution that was frequently adopted was the implementation of block scheduling. Much of the original study on the effectiveness of the block schedule in the 1980s was conducted by Canady and Retting. Candy and Retting found aspects of the block scheduling system that were advantageous to various different groups, including the remedial student population and surmised that the implementation of the block schedule would assist in increasing performances in that student population.

Because scheduling is one of the factors that can be manipulated in a broad spectrum, it is an essential component of the student experience for the principal to consider. Block scheduling is a modification of the traditional six-hour school day of 57-minute class periods. While many variations exist, the general goal of block schedules is to allocate longer periods for instruction in core subjects (English, mathematics, science, and social studies), leading to longer, but fewer, class periods per day. One type of block schedule is the 4X4 block, which has 90-minute class periods, with four classes taken every day for a semester. Another form is the A/B schedule or alternate day schedule, where three or four 90-minute classes are offered on alternating days, with classes lasting for the duration of the whole year (Canady & Retting, 1995). A third form is the trimester, where the school year is divided into three trimesters (60 days per term), each of which includes four or five academic periods (Stanley, Spradlin & Plucker, 2007). The block schedule has been demonstrated to have a plateau effect on the general student population, but

when addressing the needs of the remedial student population, data up to this point have been scarce and relatively inconclusive. Druian (1987) proposed that pacing in core classes would assist the remedial student population, implying that an implementation of the modified A/B block schedule could adequately serve the needs of both the general and the at-risk population.

Implementation of the block schedule is principally relevant in terms of student performance in core subjects, particularly mathematics and English. Passing grades, both in the classroom and on standardized tests are essential for progress to graduation from high school. The question that educators must ask, then, is whether implementation of block scheduling is benefiting those students most in need of academic support- students in need of remediation. However, researchers remain divided on whether block scheduling helps these students.

In summation, the movement towards block scheduling has been an effective approach for improving the academic success. But closer examination of the research reveals that not all students benefit. Indeed, some research suggests that block scheduling may not be helping those students who still are at-risk and/or in need of remediation to obtain a high school diploma. Thus, teachers and administrators must be aware of the importance of examining the outcomes of block scheduling in their individual schools, especially as it impacts the academic success of students in need of remediation.

CHAPTER 3

METHOD

Introduction

Educators faced with the challenge of finding ways to improve students' standardized test scores are constantly seeking innovative ways of addressing the academic needs of students. In the high school setting, many school systems converted to the 4x4 block schedule, which afforded teachers additional instructional time per day (Canady & Retting, 1995). However, classes were no longer scheduled for the duration of the entire school year, as they had been in the traditional schedule, but for only one semester. Although the 4x4 block schedule has received reviews that are positive some studies have, in fact, concluded that the scheduling format imposed by the block schedule has a slightly negative impact on low-achieving students (Macpherson & Lawrence, 2000). To address this concern, the researcher conducted a case study. The purpose of this case study was to explore the impact of a scheduling intervention on the standardized achievement test scores of students identified as in need of remediation in the content areas of English and mathematics, paired with the perception of this scheduling model from key informants in the study.

This case study was divided into quantitative and qualitative sections: the quantitative portion of the study charted the test scores of intervention block schedule students who had been identified as in need of remediation's performance on the GHSGT in English and mathematics; the qualitative portion of the study documented student and teacher perception of the modified schedule in a school that has operated exclusively on a 4x4 schedule for over a decade. This chapter will discuss research methodology, design and methods, procedures, and data analysis.

Research Questions

The following overarching research question guided this study: What is the impact of a modified block schedule as an intervention tool to increase achievement of students on the English and mathematics portion of the Georgia High School Graduation Test (GHSGT)? The researcher used the following questions to assess perception of the modified block.

1. How have students identified as being in need of remediation performed on the GHSGT using the intervention scheduling model?
2. What are students' perceptions of the modified block scheduling model?
3. What are teachers' perceptions of the modified block scheduling model?

Research Design

The design of this study was a case study. Yin and Moore (1987) defined the case study model as “empirical inquiry that investigates a contemporary phenomenon within its real life context (p.23).” In order to collect, explore, and examine the personal reflections and narrative of participants experiencing certain situations, the researcher must understand their respective perceptions (Creswell, 1998). Conducting case studies is the most appropriate way to explore and generate understanding about the experiences of a specific group (Lincoln & Guba, 1985). Additionally, case studies are grounded by place and time (Yin, 1988). Stake (1995) asserted that using case studies are more effective for qualitative research involving human participants because other types of studies and analysis methods are known to camouflage or disregard important details. Thus, case studies are designed to help eliminate assumptions and confusion by bringing out the details from the viewpoints of the participants by using more personalized

data. Interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can pursue in-depth information around the topic. Interviews further investigate participant responses by allowing researchers to get more intimate and realistic observations (McNamara, 1999).

A case study approach allowed the researcher to holistically examine Schedule Two (intervention block schedule) teacher and student perceptions. Schedule One and Schedule Two content teachers in English and mathematics and Schedule Two students who were involved in the program provided insight into the actual implementation and effectiveness of the Schedule Two format. The researcher collected quantitative data to develop a profile of Schedule Two students' achievement based on their assessment scores. Qualitative data that was collected from Schedule One and Schedule Two teachers and Schedule Two student participants via interviews, combined these data, allowed the researcher to determine how the program was perceived.

Setting

The county in which this study was conducted has a population of approximately 130,000. The county was predominately Caucasian (75% of population). African Americans comprised approximately 20% of the population. The remaining 5% represented other minorities. The average household income was approximately \$52,706 with approximately 10% living below the poverty line (quickfact.census.gov, 2011). The county is considered one of the fastest growing counties in the state. The population has grown approximately 40% over the past decade (quickfact.census.gov, 2011).

School system enrollment was between approximately 21,000 and 24,000 students during the three years of the study. There are approximately 20 elementary schools, seven middle and three high schools. This study was conducted in one of the three high schools in the school system. Of the approximately 24,000 students, 66% were Caucasian, 22.6 % were African American, and 11.4% were members of other races (www.gadoe.org, 2011).

The school involved in the study had a student population of approximately 2,400 and was located in a mid-sized metropolitan city (www.gadoe.org, 2011). The school has operated on a 4x4 block scheduling model since 1999 and was Southern Association of Schools and Colleges (SACS) accredited. The school had been recognized three times as a School of Excellence. The school has an academic program which included advanced placement for students who qualify to take college level classes, oftentimes leading to admission to four-year colleges throughout the state and the country.

As the county demographics changed and the school population increased, the number of students passing standardized tests decreased based upon the declining performances of certain demographics of students. This was true for all three of the high schools in the county. The school in this study once boasted of high test scores and passing rates of students on all standardized tests, but was in jeopardy of not meeting No Child Left Behind (NCLB) Annual Year Performance (AYP) expectations (Georgia Department of Education, 2010). Due to changes in demographics of the school, the school now qualifies as a Title I school. This status was given to the school in 2009. Several intervention programs have been instituted to prepare struggling high school students for success on the English and mathematics GHSGT achievement tests; one of which was the modified block schedule. The modified block schedule

class operated at the school between the 2008-2011 school years. It served a very small population of the student body with the main focus of providing identified students with year-long instruction in the content areas of English and mathematics in an effort to enhance their chances of passing the GHSGT English and mathematics achievement tests the first time assessed. This study included data from all three years that this modified block schedule was in operation.

The traditional schedule followed by the school was the 4x4 block (90-minute class blocks with four classes taken every day for one semester). At the completion of the semester, students enrolled in four different 90-minute classes with four blocks taken every day for the duration of the semester. This study refers to this schedule as Schedule One. The scheduling model used by the students participating in the modified block schedule varies from this schedule in one major way: the students were scheduled into a mathematics and English content class during the third block, which alternates each day. Therefore, the students have both mathematics and English instruction on a year-long basis as opposed to a semester-long time period, hereafter referred to as Schedule Two.

Participants and Sampling

The participants for this study were six students who followed Schedule Two for the 2010-2011 school year, the mathematics teacher who taught the Schedule Two classes, the English teacher who taught the Schedule Two classes, three English teachers and three Schedule One mathematics teachers. All students and teachers were selected using purposeful sampling.

Purposeful sampling affords the researcher a non-random method of selecting participants in order to gain a more in-depth perspective (Patton, 2001). Consequently, purposeful sampling is frequently utilized in qualitative studies in order to identify potential participants with specific characteristics. Merriam (1988) posited that purposeful sampling requires the researcher to select participants that are able to provide the most proficient insights, thus maximizing information. A criteria was established, the aim of which was to obtain a representative sample of gender and races to be included in the study. A representative sample is an unbiased, indicative subset of a population which accurately reflects the members of the population as a whole (Lohr, 1999).

In the 2010-2011 school year, 43 students were enrolled in Schedule Two. Student participants were selected from the 43 students who were enrolled in Schedule Two based upon gender and race. Seventeen of the 43 students were Caucasian (approximately 40%). The remaining 26 students were African American. Twenty-four of the 43 students were male (approximately 55%). The remaining 19 students were female. Thirty of the 43 students who participated in the year-long class for the 2010-11 school year had reached the age of 18. This was approximately 70% of the entire population of the Schedule Two class. Twelve of the 30 students were Caucasian (approximately 40%). The remaining 18 students were African American. Sixteen of the 30 students were male (approximately 55%). The remaining 14 students were female. The sample of 30 was used, given they were representative of the Schedule Two student population.

These 30 students had their names entered on slips of paper. These slips of paper were divided into four groups and placed into envelopes; Caucasian male (CM), African American

male (AAM), Caucasian female (CF), and African American female (AAF). One participant was selected from each envelope. The two largest groups were AAM and CM; the other two additional names (for a total of six) were selected from envelopes labeled AAM and CM. The selected students were asked if they were willing to participate in an interview over the next few weeks concerning their participation in the 2010-2011 Schedule Two class. After the six students selected agreed to participate, they were given letters of informed consent to be returned within three school days.

The six English and mathematics teacher interviews of Schedule One teachers (three each) were selected using purposeful sampling based on gender and race. Fifteen certified English teachers did not teach on Schedule Two. The English faculty consisted of two African American females, 12 Caucasian females, and one Caucasian male. Nineteen certified mathematics teachers did not teach Schedule Two. There were three African American females, two Caucasian males, and 14 Caucasian females.

There were only three groups of English teachers when classified using race and gender: Caucasian male, Caucasian female and African American female. There was only one Caucasian male English teacher; he was automatically asked to participate in the study. There was only one African American English teacher other than the modified block teacher, she was automatically asked to interview. The researcher placed each of the Caucasian female teachers' names in an envelope marked English. One name was randomly selected from the envelope.

There were only three groups of mathematics teachers when classified using race and gender: Caucasian male, Caucasian female and African American female. The researcher placed

the Caucasian male, Caucasian female and African American female teachers in separate envelopes. One name was randomly selected from each envelope.

Instrumentation

Two forms of instrumentation were used in this investigation: The Georgia High School Graduation Test and interviews. English and mathematics Georgia High School Graduation Test (GHSGT) scores were used to document student achievement. The mathematics and English tests contain 80 multiple-choice test questions. Test scores range from 100 to 300. A minimal passing score is 200. The scaled score is calculated based on number of items answered correctly out of 80.

GHSGT reliability and validity is determined using federal guidelines. In order to meet federal validity compliance standards, all sections of the GHSGT are reviewed by a panel of external experts in each corresponding field of assessment. Each team is convened by the U.S. Department of Education and the test is evaluated using the following criteria: inclusion, scoring and reporting, technical quality, and content and academic standards. Additionally, Georgia educators, which include highly qualified curriculum specialists and principal and county-recommended high school teachers, select the knowledge and skills assessed on the graduation tests. GHSGT reliability information is not available (www.doe.k12.ga.us).

Interview protocols were developed for interviewing both teachers and students. The interview questions were based upon findings from the review of literature. Content validity for the study questions (Appendix G) was achieved through charting a breakdown of the references and resources from which questions were derived.

Piloting of Interview Protocols

Student and teacher interviews were created by the researcher and tested for validity by students and teachers not in the study respectively. Six certified teachers were asked to read potential Schedule One and Schedule Two teacher interview questions. All six confirmed that they understood what each question was asking. To ensure that they would not be eligible to be study participants, the researcher used science, social studies and special education teachers.

In order to ensure content validity for the students, an elective credit recovery class consisting of 14 students was asked to read the Schedule Two student interview questions that had been written for the study. Eleven of the 14 students understood all of the questions as asked. Three students asked the meaning of the phrase “modified block schedule.” Once this term was explained, all 14 students in grades 10-12 affirmed that they understood the meaning of each of the questions asked. Out of this recovery class, two of the students were students who had participated in the modified block schedule. These students were told that they would not be used to read questions because of their participation in the modified block schedule.

Procedure

Both quantitative and qualitative data were collected for the study.

Quantitative Data.

After receiving IRB approval, along with as permission from the school board, the researcher obtained the 2008-2009 (n= 24), 2009-2010 (n=19), and 2010-2011(n=43) GHSGT English and mathematics scores for all of the Schedule Two students. This numerical data were retrieved from the county’s website and evaluated for descriptive purposes. The researcher

denoted the number and percentage of students who passed the English and mathematics sections of the GHSGT for each of the three years. Schedule Two students' scores were entered into a Microsoft Excel spreadsheet and charts were created. Charts were descriptively analyzed for data trends

Qualitative Data.

After receiving IRB approval, interviews were given to 14 teachers and students at the school. The researcher first obtained permission to conduct the study by submitting a research application through the county's school board (APPENDIX B). Once consent was given by the Student Support Teams (SST) coordinator, the researcher was able to proceed with the qualitative portion of the study. Six students and eight students were interviewed.

Student interviews.

Six students were interviewed for this study. Once participants were selected and the appropriate assent forms were returned (APPENDIX H), the researcher made interview arrangements with each individual participant. The researcher determined the block in which the students' electives were scheduled. All interviews were then scheduled at the convenience of each individual student during his or her respective block period, with permission from the teacher. During the agreed upon schedule date, the researcher met the student at his or her classroom, and escorted him or her to the researcher's office, which was a small, quiet room located on the campus, near other classes and office spaces.

Each student was seated in a desk facing the researcher, who sat at a small table with an identical set of interview questions (APPENDIX E) and a tape recorder. After the student was comfortably seated, the researcher started the audio recording. Before each interview began, the

researcher read a statement of consent. The purpose of this was to validate the information from the assent form. After ensuring the student was still willing to participate, the researcher then explained the interview procedures, reminding the student not to name specific names and encouraging him or her to respond freely about their experiences in the Schedule Two class. The student was then asked permission to officially begin the interview. Throughout the interview, the researcher attempted to maintain a comfortable, relaxed atmosphere, free from unnecessary distractions. Although each of the six students was asked the same six questions using a semi-structured interview protocol, students were not discouraged from elaborating on related topics. Each interview lasted approximately 20 minutes. After the questions had been answered, the researcher thanked each student for his or her willingness to participate. Each student was offered a blank copy of the assent form that they had previously signed, detailing information about the study, including the IRB study number, and the contact information for the researcher. Finally, each student was given a pass to return to class if they were scheduled for instructional time. Interviews were transcribed at the conclusion of the interviews.

Teacher interviews.

Eight teachers were interviewed for the study. Once participants were selected and the appropriate assent forms were returned (APPENDIX I), the researcher made interview arrangements with each individual participant. Each participant was e-mailed a background information form (APPENDIX J), the purpose of which was to collect basic background information that might be useful to the study. After the participants were selected, the researcher scheduled the interviews individually, according to the teachers' planning block. Once arrangements were made, the interviewer went to each teacher's classroom, to conduct the

interview. The researcher sat in a desk facing the teacher, with an identical set of interview questions and a tape recorder. Schedule One teachers were asked the same five questions (APPENDIX D) using a semi-structured interview protocol in separate interviews. Schedule Two teachers were asked the same six questions (APPENDIX C) using a semi-structured interview protocol and a tape recorder. After the researcher was comfortably seated, she started the audio recording. Before each interview began, the researcher read a statement of assent. The purpose of this was to validate the information from the assent form. After ensuring the teacher was still willing to participate, the researcher then explained the interview procedures, reminding the teacher not to name specific names and encouraging him or her to respond freely about their experiences/knowledge about the operations of the Schedule Two class. The teacher was then asked permission to begin officially begin the interview. Throughout the interview, the researcher attempted to maintain a casual atmosphere. Although each of the teachers was asked the same five or six questions (depending upon their teaching schedule), because the researcher used a semi-structured interview protocol, teachers were not discouraged from elaborating on related topics. Each interview lasted approximately 20 minutes. After the questions had been answered, the researcher thanked each teacher for his or her willingness to participate. Each teacher was offered a blank copy of the assent form that they had previously signed, detailing information about the study, including the IRB study number, and the contact information for the researcher. The interview process was then complete. Interviews were transcribed at the conclusion of all the interviews.

Data Analysis

Quantitative. For Question One, a profile of the Schedule Two students' achievement was created in the form of charts and graphs based upon the GHSGT results. Charts and tables were derived from test scores indicating the number and percentage of students who passed the GHSGT in English and mathematics for the three years of the study (2008-2009, 2009-2010, 2010-2011).

Qualitative. The qualitative analysis was for questions two and three. The researcher listened to each auto tape multiple times to ensure accuracy of each statement transcribed. Once all 14 interviews were examined for accuracy, the researcher then began to make a list of statements from each transcription. To reduce the text, the researcher highlighted passages of importance and interest. From this list of raw data, the researcher began to extract significant sentences, phrases and or words from the transcription then examined the data for repetition and created a table. The raw data were formulated into meaningful statements and a primary list of meaningful formulation of statements by students and teachers was created (Ge, Lubin, & Zhang, 2010)

The preliminary meaningful statements were then reexamined to form deeper levels of meanings (Ge, Lubin, & Zhang, 2010; Strauss & Corbin, 1990). The researcher then engaged in the process of selective coding, in which the researcher grouped themes into like categories, and identified a classification title for each group of dominant perceptions extracted from the data.

In the next level of analysis, the meaningful themes were clustered to help exam the relationships between them. Charts and diagrams were used to help visualize and understand the

meaning of the data. The researcher continued to return to original data to ensure that the essence of the interviews was captured in the final level of analysis.

Summary

The purpose of this study was to explore the impact of a modified block schedule (Schedule Two) as an intervention tool to increase achievement of students on the English and mathematics portion of the Georgia High School Graduation Test (GHS GT). Using a case study methodology, the researcher began to collect data from a school which had a modified block schedule put into place to assist students in need of remediation with obtaining passing scores on the GHS GT. Participants in the study included a purposeful sampling of students that had participated in the modified block schedule (Schedule Two) during the 2010-2011 school year, as well as teachers from both the school's 4x4 block (Schedule One), and the modified block scheduling format. Quantitative data were obtained in the form of the results from GHS GT assessments that were categorized by subject (English or mathematics) to give a snap shot of student's performance over the three year period of the intervention. Interviews were checked for content validity by piloting the questions with teachers and students not directly involved in the study. Next, the researcher interviewed six students and eight teachers to obtain their perceptions of the modified block scheduling program. The qualitative data collection was in the form of interviews, from which raw data were extracted to compile dominant emerging themes. The major concepts or themes identified in the study are presented in Chapter 4 of this dissertation in an effort to promote future studies on the subject.

CHAPTER 4

REPORT OF DATA

Introduction

The purpose of this study was to explore the impact of a modified block schedule (Schedule Two) as an intervention tool to increase achievement of students in need of remediation on the English and mathematics portion of the Georgia High School Graduation Test (GHSGT). This chapter will present findings obtained from the analysis of the students' quantitative standardized test scores and perceptions that emerged from the qualitative data collected through the transcribed interviews with the teachers and students. These analyses form the framework of the exploration in efforts to answer the overarching research question (1) What is the impact of a modified block schedule as an intervention tool to increase achievement of students in need of remediation on the English and mathematics portion of the Georgia High School Graduation Test (GHSGT)? along with the sub-questions (a) How have students identified as being in need of remediation performed on the GHSGT using the intervention scheduling model? (b) What are students' perceptions of the modified block scheduling model? (c) What are teachers' perceptions of the modified block scheduling model? This chapter presents findings by research sub-question.

How have students identified as being in need of remediation performed on the GHSGT using the intervention scheduling model?

Quantitative results.

To answer question one, the researcher retrieved GHSGT English and mathematics assessment test scores for Schedule Two students for the 2008-2011 school years. Excel

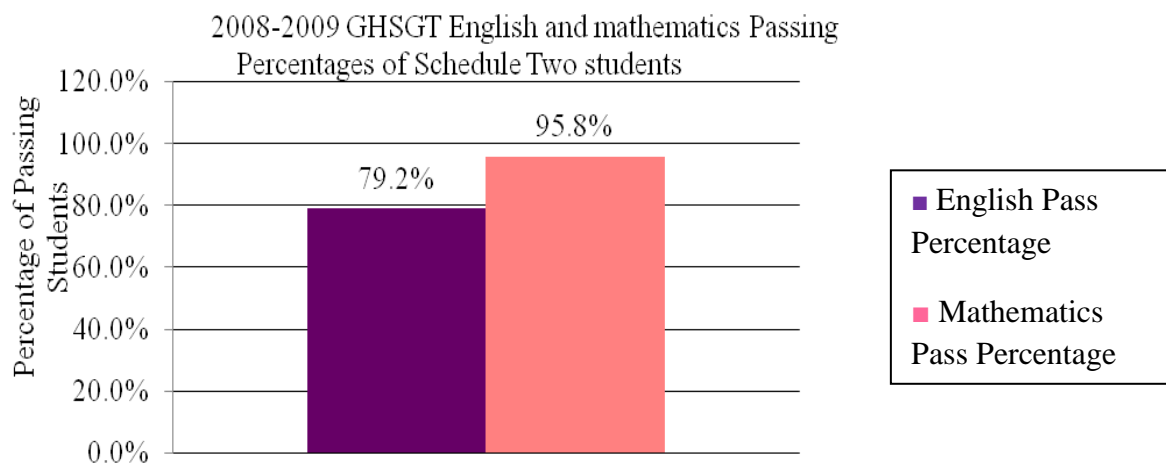
spreadsheets were created for each school year: 2008-2009, 2009-2010, and 2010-2011. A final chart was compiled recording the overall passing percentages throughout the three year time frame. The researcher listed each Schedule Two student's name for each of the three years of the study, and used the school's database in order to retrieve scores for each student. The scores were labeled by year and charts were creating by categorizing Schedule Two student progress during the three years Schedule Two operated at the school. The charts were created by the researcher to provide a snapshot of how students identified as being in need of remediation in content areas of English and mathematics performed on the standardized GHSGT after being placed into a year-long, Schedule Two environment.

The 2008-09 school year was the first year Schedule Two operated at the school. Twenty-four students participated in the year-long English and mathematics class. Nineteen of the 24 students passed the English Portion of the GHSGT (79.2%). In mathematics, 23 of the 24 students passed (98.8 %). Figures 1 and 2 provide both the number and percentage of students who passed English and mathematics for this school year, respectively.



Note: N=24 students taking the modified block schedule

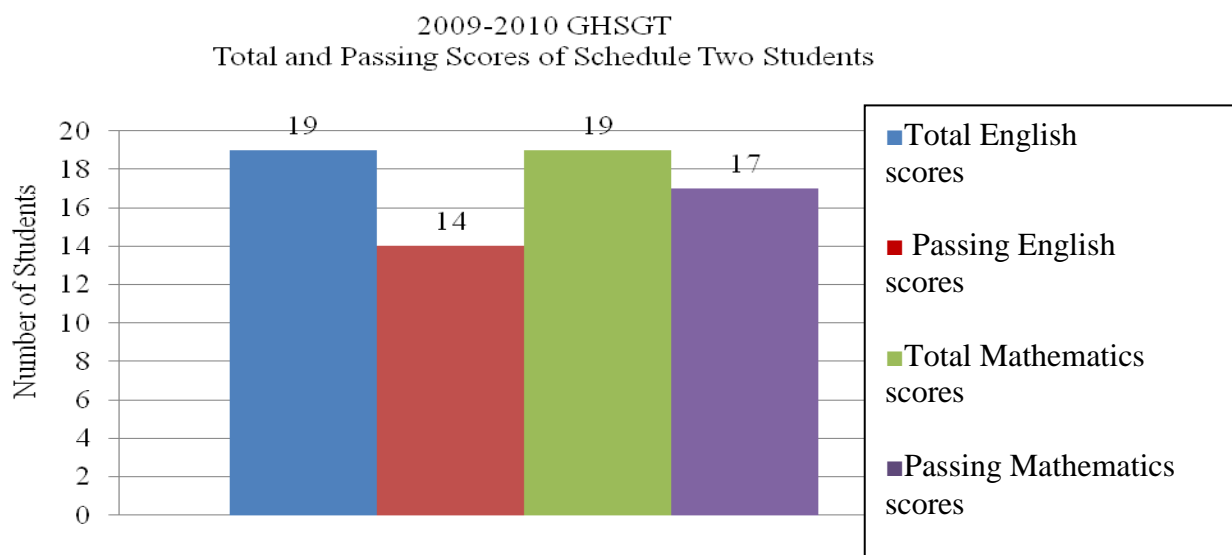
Figure 1. Total and Passing Schedule Two English and Mathematics GHSGT Scores for the 2008-2009 School Year



Note: N=24 students taking the modified block schedule

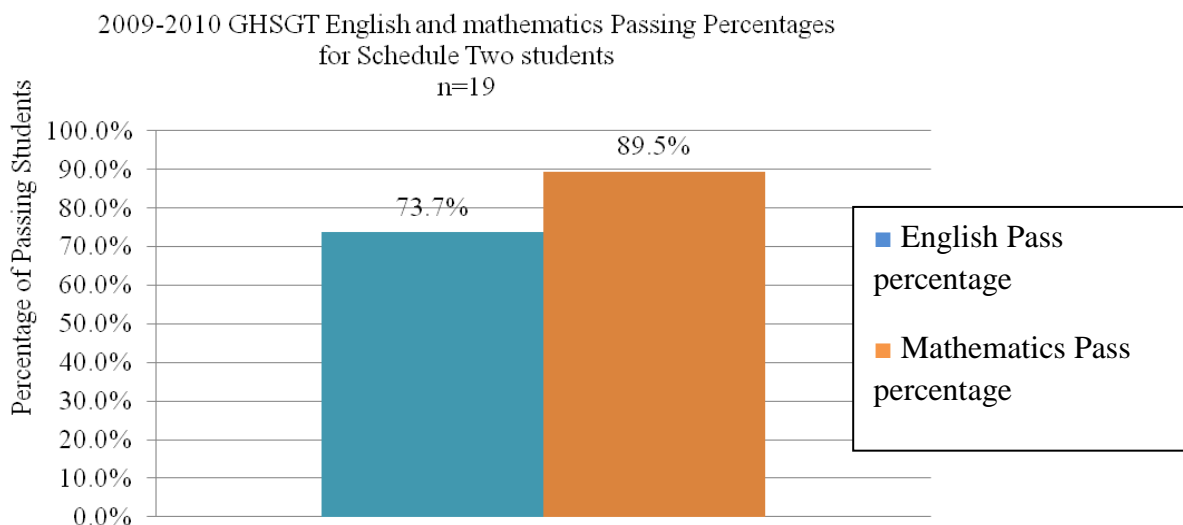
Figure 2. Schedule Two English and Mathematics GHSGT Passing Percentages for the 2008-2009 School Year

Figures 3 and 4 show that the Schedule Two classes had a total of 19 first time test participants, of which 14 made a passing score in English (72.7%). Seventeen of 19 students passed in mathematics (89.5%).



Note: N=19 students taking the modified block schedule

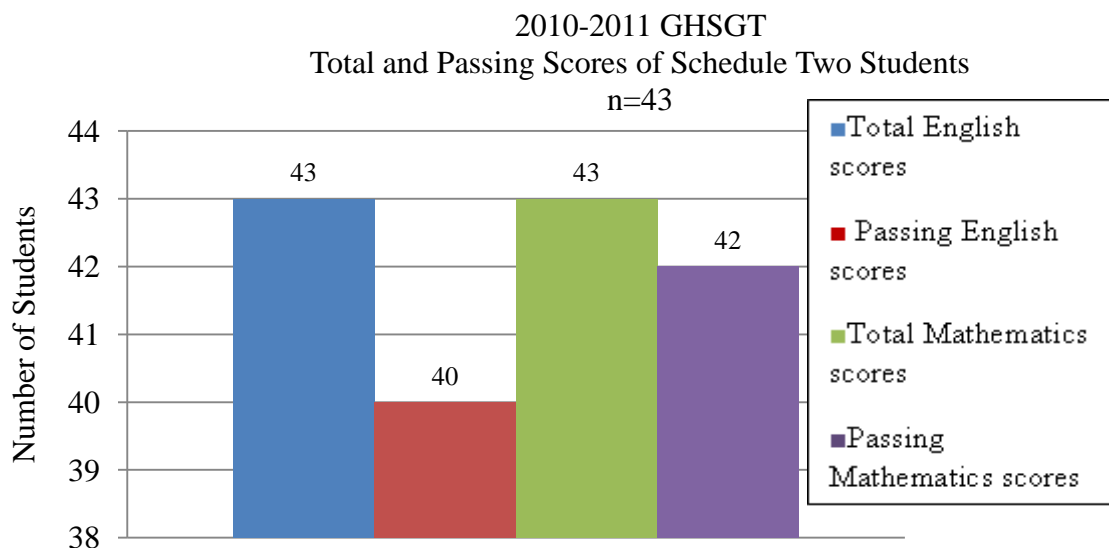
Figure 3. Total and Passing Schedule Two English and Mathematics GHS GT scores for the 2009-2010 School Year



Note: N=19 students taking the modified block schedule

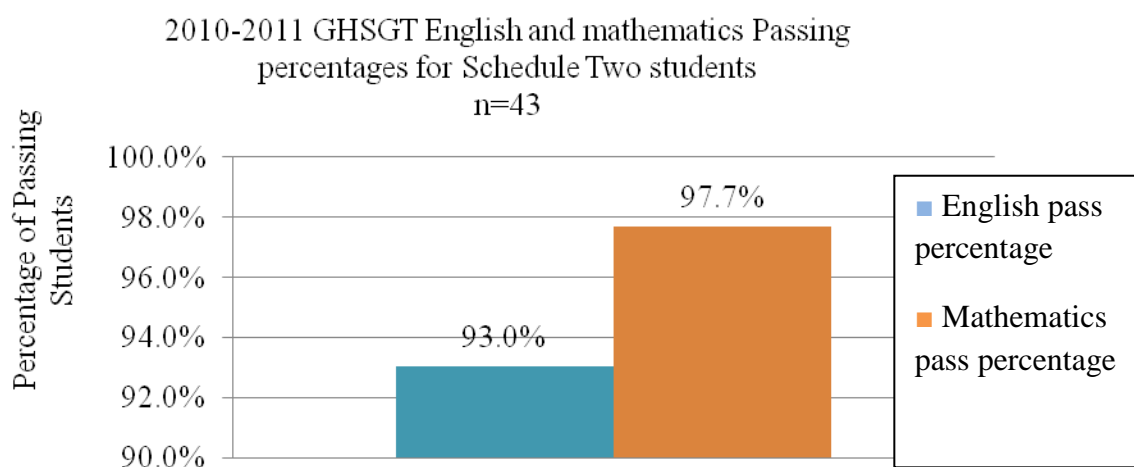
Figure 4. Schedule Two English and Mathematics GHS GT Passing Percentages for the 2009-2010 School Year

The school year 2010-2011 was the last year data were collected and analyzed for the quantitative section of this study. This was the last year of program implementation. As indicated in Figures 6 and 7, in the Schedule Two class, there were 43 participants. Forty of the 43 students passed English 93% , and in the area of mathematics 42 of the 43 students passed the mathematics portion of the GHS GT (97.7 %).



Note: N=43 students taking the modified block schedule

Figure 5. Total and Passing Schedule Two English and Mathematics GHSGT scores for the 2010-2011 School Year



Note: N=43 students taking the modified block schedule

Figure 6. Schedule Two English and mathematics GHSGT passing percentages for the 2010-2011 year

Numerical data to answer question one were derived from the results of the GHSGT for the years, subject areas, and the participants identified in the study. Results are compiled in the summary of this chapter.

Participant profiles.

Participants were selected using purposeful sampling to ensure a representative sampling of both student and teacher participants in the year-long schedule Two program. According to Sandelowski (1995), sample sizes in qualitative research should not be so small as to make it difficult to achieve data saturation, theoretical saturation, or informational redundancy. At the same time, the sample should not be so large that it is difficult to undertake a comprehensive, case-oriented analysis. Therefore, the sample for this study included six 2010-2011 Schedule Two students, six Schedule One teachers, and two Schedule Two teachers. This included enough students and teachers to obtain a sample, but not enough to congest the findings.

The interviews averaged from 20-30 minutes, they were audio taped and transcribed by the researcher to ensure accuracy of information. Findings were derived from transcription and created to indicate dominate themes and patterns among interviewees.

Participants meeting the criteria of the study were selected through the process fully described in Chapter Three and approached for participation until the required 14 participants were selected to participate. The participants of this study included six former Schedule Two students, one English teacher and one mathematics teacher who taught the modified block schedule, and three English teachers and mathematics teachers who taught on Schedule One. Information on the student participants was derived from school intranet information system.

What are students' perceptions of the intervention block scheduling model?

Question two asked, "What are students' perceptions of the intervention block scheduling model?" In order to answer this question, six students were interviewed. The qualitative data from the study were obtained from the evaluation of interviews with six students. Students were labeled S1-S-6. Table 1 details student participant demographics.

Table 1

Student Participant Demographics

Participant Number	Gender	Race
Student #1	Male	African American
Student #2	Female	African American
Student #3	Male	Caucasian
Student #4	Male	Caucasian
Student #5	Male	African American
Student #6	Female	Caucasian

Table 2 lists the primary formulated meanings of significant statements from the students.

Table 2

Preliminary Formulated Meanings of Significant Statements- Students

- *I participated in this class because I wanted to pass my graduation test, and I thought my grades would not be sufficient enough to graduate without taking this course.*
- *I appreciated the fact that teachers start out teaching slower.*
- *I felt as though this schedule would help me with the English part and the math part of the graduation test.*
- *I was chosen because of my grades, and they wanted me to do better on the graduation test.*
- *Coming back from the break was confusing...Not knowing where to go was a major problem.*
- *I felt like [the modified block schedule] gave me longer to prepare me for the graduation test and not try to cram anything into one semester... This schedule afforded us the opportunity to pick up what we needed to pick up over time.*

- *I was chosen because administrators thought it would help me.*
- *The main benefit was having it all year to prepare for the two tests and not having to cram everything into one semester.*
- *There was confusion about which days students were expected to report to certain classes-Alternating schedules after a long week was difficult.*
- *Both the students and the teachers seemed confused and disoriented with the schedule.*
- *The schedule was a tremendous help/benefit...After taking this class, I met and/or exceeded standards in the content areas of mathematics and English.*
- *The pace in which materials were covered was much slower and easier to follow in this class.*
- *Immaturity was a frequent problem in the modified block schedule.*
- *Some of the other students that I found myself in class with were distracting and unfocused.*
- *There were several conflicting personalities in my class.*
- *Math has consistently been a problem for me throughout my high school career.*
- *There was some apprehension about my ability to pass the GHSGT.*

The preliminary meaningful statements from Table 2 were then re-examined to form deeper levels of meanings (Ge, Lubin, & Zhang, 2010; Strauss & Corbin, 1990). The researcher then engaged in the process of selective coding, in which the researcher grouped themes into like categories, and identified a classification title for each group of dominant perceptions extracted from the data. Table 3 represents deeper level themes common across participants for students (Ge, Lubin, & Zhang, 2010).

Table 3

Second Level of Formulated Meanings of Significant Statements- Students

Three Main Categories	Perceptions gleaned from Interview Transcriptions
Confusion with the A/B Schedule	<ul style="list-style-type: none"> ● <i>Coming back from the break was confusing; Not knowing where to go was a major problem</i> ● <i>There was confusion about which days students were expected to report to certain classes- alternating schedules after a long week was difficult</i> ● <i>Both the students and the teachers seemed disoriented about the schedule</i>

Behavior/Immaturity Issues	<ul style="list-style-type: none"> ● <i>Immaturity was a frequent problem in the modified block schedule</i> ● <i>Students were often distracting and unfocused</i> ● <i>Several conflicting personalities in classes</i>
Benefits of the Year-Long Schedule	<ul style="list-style-type: none"> ● <i>The pace was slower and easier to follow</i> ● <i>Class was beneficial because content was spread out throughout the school year</i> ● <i>Felt as though the schedule would help me with the English and mathematics part of the GHSGT. Did not have to cram everything into one semester.</i> ● <i>Schedule afforded students the opportunity to learn skills over time.</i>

The third level of analysis involved synthesizing the data to find prevalent themes amongst the student participants. Responding to this question, the researcher reported findings on (a) how students found the modified block schedule confusing and/or difficult to follow, (b) how students felt as though the behavioral issues in the modified block class were problematic, and (c) how students believed that the schedule was beneficial in helping them achieve passing scores on the GHSGT. Specific comments related to each theme follows.

Confusing Scheduling Format.

Although the general consensus about the modified block schedule was deemed positive, there were a couple of issues that were mentioned as primary complaints from student participants. The first major concern revolved around the disjointed scheduling format of the modified 4x4 block. Because of the alternating nature of the schedule, it became difficult for some of the students to determine which class he or she needed to be attending, especially after a period where there had been an extended length of time when school had not been in session. According to Student Two, “We had to go to a different class every day, and sometimes I got confused, like when we came back from break.” Student Three agreed with the general confusion

promoted by the A/B schedule, stating, “There weren’t really any problems with [the modified block schedule], except you would get confused about what days you were supposed to go to what class.” Student Five added additional information about the stressful nature of the alternating schedule, “...the first week when we started, and especially around the holidays... you were supposed to go to room A on Monday, but if we had a pep rally or something... now go to room B, and then back to B again on Tuesday, or something.” Finally, Student Six gave a realistic depiction of the students’ frustration with the logistics of the schedule and the lack of assistance given by other staff members, who were not familiar with the intricacies of the schedule:

After a weekend, it was really tough finding where to go, and no one that I was with knew where to go. Sometimes I ran to English in the 400 building, only to find that it was my math day on the other side of the campus in the ninth grade building. There were times when teachers didn’t know either. They had to look up the assistant principal and look up where to go, if they had an “A” day or a “B” day. It would have been better if “A” day met on a certain day and “B” day did as well.

Based upon the perceptions of the students interviewed, there was a clear indication of frustration with the logistics of the schedule from the Schedule Two students.

Behavior/Immaturity Issues

The second issue of concern given by the student participants was high probability of behavior issues and conflicts from the Schedule Two student population. Some of the students interviewed felt as though the immaturity of some of their fellow Schedule Two participants was greater than that of the general student population. Student Four explained that there was “A lot of immaturity” in his class, explaining that “most of the people were ok... there were just some that I preferred not to be around.” Student Five elaborated on the issues with the caliber of students in the Schedule Two class: “I didn’t really like the students in the class. But you’re

always going to have somebody in the class that you don't like." Student Six also felt as though the Schedule Two class presented a conflict, but the issue with Student Six lay in the fact that she disliked being taught by the same instructor for the duration of entire year: "What I did not like was being stuck in class all year with a teacher you didn't like." Interpersonal conflict, with both student and teachers, seemed to be a concern expressed by the Schedule Two students that were interviewed.

Student Achievement.

Besides negative associations with Schedule Two, many students maintained perceptions of a positive impact of the modified block schedule on their scholastic achievement. Student One remarked about his learning experiences in his Schedule Two class, "...instead of learning one subject for a long time, it's just versatile in that one thing, you actually just learn different amounts of things in that same time." Student Two was more specific in the content areas in which the Schedule Two class was beneficial: "I got better in math... And in English, I learned to write essays." Student Three explained how having the class helped him to attain the skill set that he required to master concepts: "I actually exceeded [standards] in one of them, and met standards in the other... They were two of my best subjects." Student Five felt a great benefit from Schedule Two, asserting that when he "struggled with some of his math stuff," that he was able to "go into my math strategies class and know I could get help all year-round." He added that, after taking the Schedule Two class, he was able to "help learn what [he] didn't know from the first semester, "ultimately allowing him to successfully pass his math class during his next attempt. From the interview data, it seemed obvious that the students felt as though they obtained significant academic gains from their participation in the Schedule Two block.

What are teachers' perceptions of the invention block scheduling model?

Question three asked, "What are teachers' perceptions of the intervention block scheduling model?" In order to answer this question, eight teachers were interviewed for the study. Two were Schedule Two teachers, one in content area of English, the other in mathematics. Among the other six teachers, three from each of the aforementioned content areas were participants in the study. Teachers were labeled T1-T-8. Information on the teacher participants was derived from a small, informal survey created by the researcher (Appendix J). Information about the teachers is as follows:

Teacher One is a Caucasian female English teacher in her mid 50s. She has over 20 years of experience teaching English and has been at her current school for seven years.

Teacher Two is a Caucasian male teacher in his late 50s. He retired with 30 years of experience from a private sector. He became certified through the Teach for America program and has taught English at the school in the study for the past five years.

Teacher Three is an African American female teacher in her early 30s. She has 7 years of teaching experience, five of which were at the school in the study.

Teacher Four is an African American female English teacher in her early 60s. She has 25 years of teaching experience, six of which were at the school in the study. This teacher has taught on both Schedule One and Schedule Two format.

Teacher Five is an African American mathematics teacher in her early 60s. For than 20 years, she worked in the business industry. She has taught mathematics for the last 15 years, the last five years of which have been at the school in the study. She has taught primarily on the Schedule One format for the past decade.

Teacher Six is a Caucasian male mathematics teacher in his mid 30s. He has been employed with at the school in the study for eight years, and has taught solely at this school and on the Schedule One format.

Teacher Seven is a Caucasian female mathematics teacher in her mid 30s. She has had eight years of teaching experience, all of which have been at the school in the study. She has taught solely on the Schedule One format.

Teacher Eight is a Caucasian female mathematics teacher. She is in her late 50s and has had over 20 years of experience teaching mathematics. This teacher transferred from teaching middle school eight years ago and has remained at the school in the study for the duration of that time. This teacher has taught on both Schedule One and Schedule Two format. Table 4 details teacher participant demographics.

Table 4

Teacher Participant Demographics

Participant Number	Gender	Race	Content area	Years of Teaching Experience	Schedule format
Teacher #1	Female	Caucasian	English	20+	Schedule One
Teacher #2	Male	Caucasian	English	5	Schedule One
Teacher #3	Female	African American	English	7	Schedule One
Teacher #4	Female	African American	English	25+	Schedule Two
Teacher #5	Female	African American	mathematics	15+	Schedule One
Teacher #6	Male	Caucasian	mathematics	8	Schedule One
Teacher #7	Female	Caucasian	mathematics	8	Schedule One
Teacher #8	Female	Caucasian	mathematics	20+	Schedule Two

Table 5 represents the preliminary list of meaningful formulations from teachers (Ge, Lubin, & Zhang, 2010).

Table 5

Preliminary Formulated Meanings of Significant Statements- Teachers

- *The program appears to have been successful.*
- *I much prefer the year-long schedule.*
- *I think that the modified block was a big advantage*
- *The modified block is a little difficult for the kids to keep up with*
- *Probably the time frame is bad. You can't work hard all that time*
- *the data I've looked at, show that block schedule is not the cure-all*
- *I was told students would be selected, students who were at-risk for not passing the graduation test, that were workers*
- *Behavior was a serious problem for the students*
- *I even had some kids, by the way, who obtained "exceeded" on their test scores*
- *I was very, very impressed by the results*
- *But I do think the year-long was good for them. Because they had time for it to sink in, and come back and review. And, I think that was very good*
- *I would volunteer to teach this schedule again, if asked, especially if some of the behavior problems were eradicated*
- *Other teachers were "impressed and amazed" with the results, saying how an overwhelming majority of those students were successful on their graduation test*
- *Students were exposed to the material longer, and for some of them, for a second time.*
- *I think that the traditional schedule would help students the most because they get information every day. Or every other day with the A/B*
- *Because these students are remedial, they the ones that are at-risk. A disadvantage was the every other day schedule. The students were confused whenever there was a break.*
- *I think the lower performing students do better if they are put in class with high achieving students from whom they can model their behavior*
- *I can imagine that the first couple of weeks are confusing,*
- *A class like this breaks up the pattern for them and they might be able to grasp more that way.*
- *I personally believe that the content has gotten a lot more vigorous, and most of the students are having problems with math, and this change has given us an opportunity to spend not only days on a topic*
- *This schedule allows the teacher to spend more time going over particular concepts that are difficult for the students.*

The preliminary meaningful statements from Table 5 were then re-examined to form deeper levels of meanings (Ge, Lubin, & Zhang, 2010; Strauss & Corbin, 1990). The researcher then engaged in the process of selective coding, in which the researcher grouped themes into like categories, and identified a classification title for each group of dominant perceptions extracted from the data. Table 6 represents deeper level themes common across participants for both teachers (Ge, Lubin, & Zhang, 2010).

Table 6

Second Level of Formulated Meanings of Significant Statements- Teachers

Four Main Categories	Perceptions gleaned from Interview Transcriptions
Scheduling Confusion	<ul style="list-style-type: none"> ● <i>The schedule is difficult for students to keep up with</i> ● <i>Remedial, at-risk students faced confusion about where they should be</i> ● <i>Coming back after a break was confusing</i>
Selection Process	<ul style="list-style-type: none"> ● <i>The students selected were not exactly the ones I might have chosen</i> ● <i>The administrators had a heavy hand in choosing the students</i> ● <i>Some of the students did not want to be in this class, and simply caused a disruption</i> ● <i>Participants should have been chosen in a different manner</i>
Behavior Issues	<ul style="list-style-type: none"> ● <i>Lower performing students need the influence of higher performing students, from whom to model their behavior</i> ● <i>Would volunteer to teach the class again, if some of the behavior problems were eradicated</i> ● <i>Behavior was a serious problem for many of the students</i>
Benefits of the year-long classes for students in need of remediation	<ul style="list-style-type: none"> ● <i>I prefer the year-long schedule</i> ● <i>Block is difficult for teachers with students who are low-achievers</i> ● <i>Modified block was a big advantage</i> ● <i>Some of the children scored “exceeded”</i> ● <i>Other teachers were “amazed and impressed” with the results,</i> ● <i>Traditional and A/B schedule help students receive information daily</i> ● <i>More vigorous content has lead to problems... this schedule gives students the ability to spend more time tackling difficult concepts</i>

The third level of analysis involved synthesizing the data to find prevalent themes amongst the teacher participants. Responding to this question, the researcher reported findings on (a) teachers found that modified block schedule confusing and/or difficult to follow, (b) most teachers thought that the student selection process should have been more multifaceted, (c) teachers found behavioral problems amongst Schedule Two students to be problematic, and (d) the year-long schedule appeared to provide benefits for students in need of remediation. Although Schedule One and Schedule Two teachers had varying levels of awareness and participation with the modified block schedule, because of the proximity of the individual departments throughout the school (All English teachers were assigned classrooms in one central building, all mathematics teachers were assigned classrooms in another central building) many shared perceptions emerged from the transcriptions. Specific comments related to each theme follows.

Scheduling Confusion

The perceptions of the teachers regarding Schedule Two contained similar components of the students' interviews. One of the primary concerns about the Schedule Two block format rested in the confusion of the block schedule. Teacher Four felt as though the schedule operation was a distinct disadvantage:

Definitely a disadvantage was the every other day schedule. The students were confused whenever there was a break. We, as the teachers, had to deal with a lot of drama. The students were confused, and [the math teacher and I] had no idea which day the students would be in our classes, so it was tough to prepare. It wasn't so bad, like, during week to week, but over Labor Day break, or a Winter break, it was a very confusing thing as to what class was coming. And a lot of times, you wouldn't find out until the students were already in that class.

Teacher Seven also felt that the students suffered a sense of isolation and discordance with the schedule, stating that the schedule was “confusing” and that students were facing situations where “all their friends are doing what they’ve done in the past few years... and then they would have a different schedule because they have [different] needs.” Lastly, Teacher Eight lamented on the “logistical” issues of the schedule, emphasizing how these issues caused distractions and disturbances with the Schedule Two students: “[Logistics] was a major issue, and they would play that to the hilt.” Thus, the participants were clear that there were issues in the scheduling format, some of which led to other problems.

Selection Process

Next, several participants commented on the inadequate nature of the selection process for Schedule Two students. Many of teachers felt as though the process by which the administrators used to select the students contributed to some of the problems within the program. For example, although Teacher One felt as though EOCT scores were “traditionally good indicators of student ability and performance,” she did assert that there were some elements that also needed consideration when selecting a student for a program like the Schedule Two format, such as the input of “individual teachers.” Teacher felt as though student effort should be taken into consideration: “If they’re good in English, but not doing very good work, then it’s a waste of time to [try and help them].”

Teacher Three corroborated with Teacher Ones’ perceptions, contending that additional measures, such as “teacher recommendations, attendance and previous test scores” should all be factors in selecting candidates. Most of the teachers, including Teacher Two, Teacher Three, Teacher Four, and Teacher Seven felt as though recommendations should be one of the primary

selection methods. Teacher Three also considered student “behavior” to be an important factor, but was not certain how that particular variant should best be used. Teacher Three believed that the students should have some autonomy in their participation, with the administration taking cares to “make sure that the selected students agreed” to take the class.

Teacher Seven commented on the inefficiency of the selection process, suggesting that amendment to the existing process would make the student selection more balanced. She stated that they were “given a list with the kids that were thought might benefit. And we’d go through the name and generate our list, and then they would take that list and match it up with the schedules and see if it was feasible to place students like that.” Based upon the interviews, it appears that the selection process was one of the problems with which the teachers had concerns based upon its level of inconsistency.

Behavior Issues

It was mentioned earlier that some of the students had a problem with the behaviors of some of their classmates in the Schedule Two class. Several of the Teacher participants also identified behavior as one of the largest challenges of the Schedule Two class. Teacher Five observed that the intentional scheduling of students in need of remedial instruction was a major disadvantage to the teacher based upon the “disciplinary and behavioral concerns” that oftentimes accompany these students. Unlike a typical 4x4 class, in which students are primarily selected randomly by computer, this class was put together based upon academic needs, which she felt made it automatically predisposed to contain a multitude of students with a vast variety of behavioral issues. Additionally, she contended that the number of students that were

eventually placed in the classes became a hindrance to the ultimate goal of the educator, thus reducing the proficiency and purpose of the class.

Teacher Eight affirmed the behavioral issues encountered by Schedule Two teachers: “Knowing that I had to see some of these students all year long... again, it’s that behavior. Just the idea that I had to deal with some of those.” She added that she believed that the number of students placed in the Schedule Two class was a catalyst to the behavior issues, stating, “I think 20 or 25 would be absolute max... I think if you’ve got kids that need that much help [they need additional personnel].” Finally, Teacher Seven elaborated on the types of behavioral issues encountered by Schedule Two students: “Some just won’t do homework, some are just unorganized. Some students just sleep in class sometimes.” Although she did confirm that these behaviors were encountered in the general student population as well, Teacher Seven believed these issues to be more detrimental to the Schedule Two student population. The participants were clear about their consensus regarding the behavioral issues from the Schedule Two students and the resulting impact on the effectiveness of their instruction.

Benefits of the year-long class for students in need of remediation

The final prevalent theme that was observed amongst the interviewed teachers was that the Schedule Two year-long class was conducive to learning. From the interview data, it seemed obvious that a large majority of the teachers, in some aspect, stated this to be their perception, though the reasoning behind why the teachers believed this to be so varied. Teacher One found that student achievement was enhanced because of the “comfort level with the instructor” was increased by staying in the same class for the duration of an entire year which helped to “reduce anxiety.” Teacher Two elaborated on the benefits of the year-long scheduling format:

For two or three personal reasons, I much prefer the year-long schedule. One is, it takes a long time to understand the kids, find out what their problems are, and see what I have to work with. Two, it helps me sort out behavior problems from educational problems. It gives me a chance to make important decisions about what I need to do in the best interest of the students. Another reason is that it gives me a better chance to get to know the children themselves. A block schedule has so much more material to cover- you're working for an hour and a half, and I know people think its quality time, and you can cover a lot, but sometimes these kids are not able to cover everything, and you've got different levels of ability- differentiation. Some kids can pick up material orally, or they can read it. They need a combination of activities. And yes, the [traditional] block gives you a lot of time, but you're also covering so much ground, so quickly. When you're looking at poor performing students, if you foul up the first nine weeks, they kind of give up, and there's no coming back from that.

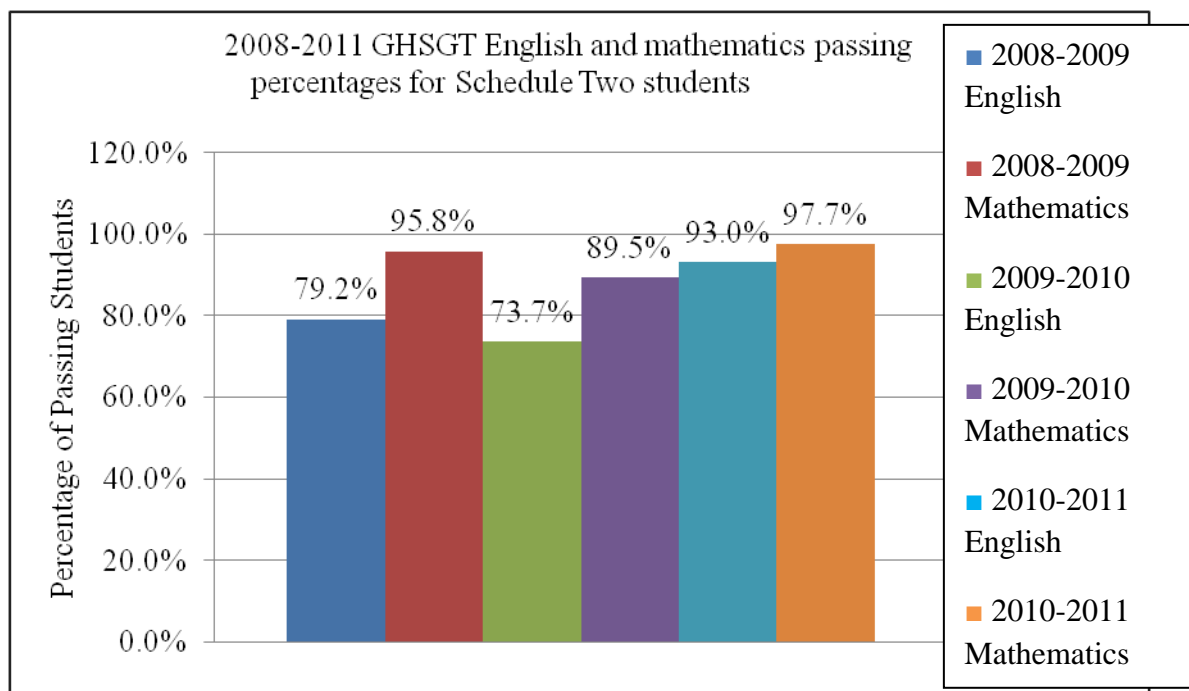
Teacher Three and Teacher Four both supported the year-long scheduling format as well, determining that the “additional time to prepare” provided by Schedule Two to be advantageous. Additionally of interest, most teachers interviewed expressed that sense of accomplishment and satisfaction achieved by both teachers and students on Schedule Two. Teacher Eight asserted that usually about half of her students fail to pass their standardized tests, but that “the class made a huge impact, especially with the math.” Teacher Three corroborated, insisting that “an overwhelming majority of [the Schedule Two] students were successful on their graduation test.” From the data collected from the teachers, the researcher concluded that though there were some problems with the function and logistics of the schedule, the large majority of teachers were in willing to overlook these issues in favor of the benefits that Schedule Two provided for students in need of remediation.

Quantitative Data Summary

Through the creation of this case study, the researcher sought to determine the impact of the modified schedule on the GHSGT English and mathematics scores of students in need of

remediation. Data in the form of test scores were collected to determine the performance of the students, thus addressing Question One for the three years of the study (the 2008-2009, 2009-2010, and 2010-2011 school years).

Figure 7 charts the passing rates of the Schedule Two class and presents the quantitative data from all three years upon which the year-long schedule operated.



Note: N=24 (2008-2009), N= 19 (2009-2010), N=43 (2010-2011) students taking the modified block schedule

Figure 7. Schedule Two English and Mathematics GHSGT Passing Percentages for the 2008-2011 School Years

Longitudinal data analysis revealed much about the performances of the students involved in the Schedule Two class. Students' performance on both the English and mathematics portions of their GHSGT, yielded high passing numbers and percentages on the standardized assessments. The researcher kept in mind while reviewing charts, that the students

whose information was reported on these particular charts were all deemed as likely to fail GHSGT assessments as first time test takers. The subject area of the greatest concern for students, teachers, administrators, was mathematics, yet in each academic year, the mathematics scores were very high (>89% each year). The English scores were also high (>70% each year.) Although test scores were only used to indicate performance of students, the students on the Schedule Two scheduling format performed well on standard achievement using the year-long modified block schedule. Although the passing percentages and numbers were higher than expected, the researcher does not claim that the intervention schedule was the reason for the students' performance.

Qualitative Data Summary

The qualitative data were derived from a set of open-ended interviews from 2010-2011 Schedule Two students, and content area teachers in the study. Interviews were conducted in order to determine the perceptions of this schedule. The interviews provided rich data, revealing various levels of awareness of the program- from teachers not aware of its existence, to those with intimate knowledge of details of its operations. Initially, meanings statements were extracted from the student and teachers transcriptions. The preliminary meaningful statements were then re-examined to form deeper levels of meanings (Ge, Lubin, & Zhang, 2010; Strauss & Corbin, 1990) and categorized by theme. The researcher then engaged in the process of selective coding, in which statements were placed into like groupings and identified a classification title for each group of dominant perceptions extracted from the data. Figure 8 shows common

perceptions between students and teachers.

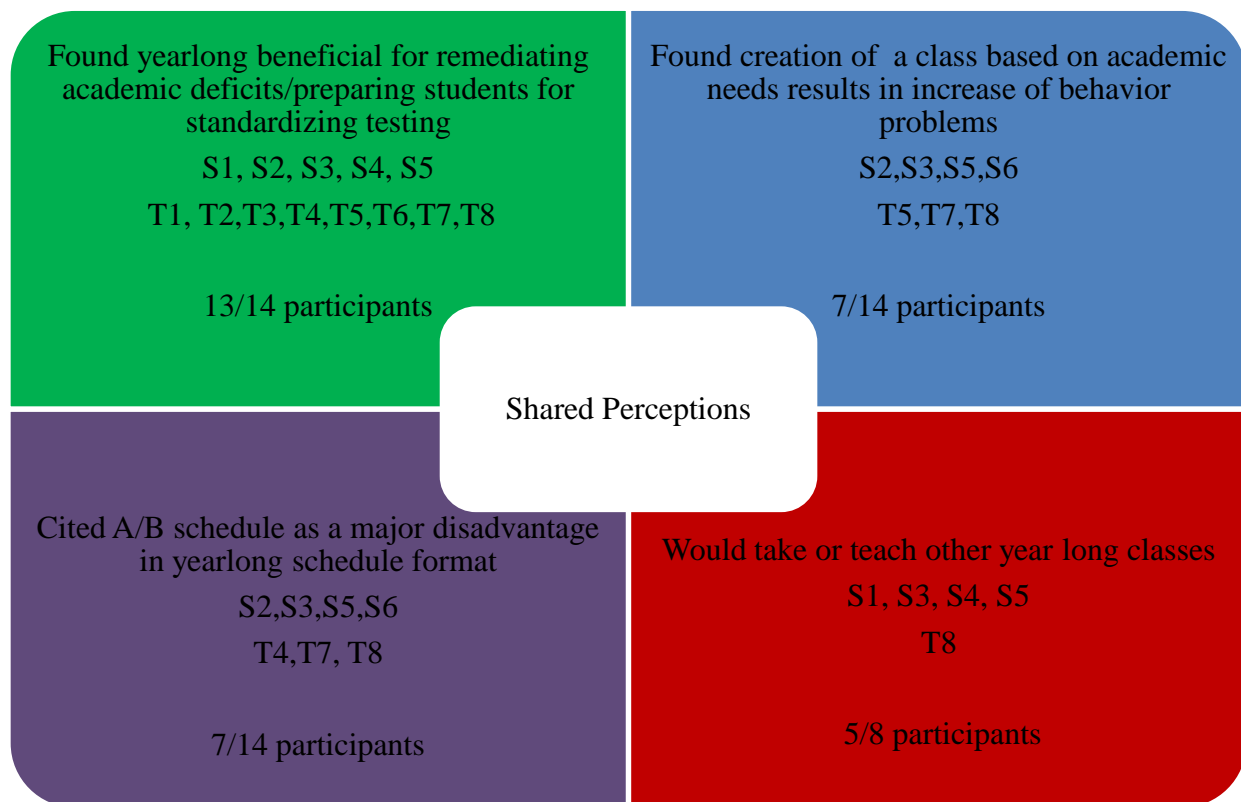


Figure 8. Shared perceptions from student and teacher interviews.

Students that were interviewed, for the most part, were very pleased with their academic progress and attributed the year-long schedule to aiding in their success in passing standardized test during their primary attempt. The majority of the students would take other such classes and or recommend that other students in need of remediation take them as a tool to remediate deficiencies. The three categories that emerged from student perceptions included: the benefits of the year-long schedule, the confusion of the A/B schedule, and the behavior and immaturity problems encountered in the Schedule Two classes. Additionally, students expressed some varied perceptions about their selection for the program.

Teachers that were interviewed, seemed, for the most part, to prefer the Schedule Two format as a way to fulfill the needs of students in need of remediation to that of the 4x4 block. Although very few of the teachers admitted to wanting to teach or continue teaching on the year-long modified block schedule, most of the teachers interviewed agreed it was an improved experience for students. The four categories that emerged from teacher perceptions included: A/B schedule confusion, Schedule Two selection process dissatisfaction, behavior and immaturity issues with the Schedule Two students, and the overall benefits of the year-long classes for students in need of remediation.

Chapter Summary

This chapter discussed data results and themes that emerged during quantitative and qualitative data analysis. The data revealed three concepts for students and four core concepts relevant to teachers regarding their perceptions of a modified block scheduling program. A table of formulated statements was provided for both students and teachers in order to provide insight regarding the origins of the concepts. The researcher felt this was necessary to accurately portray the students' and teachers' overall perceptions, a couple of which, including scheduling confusion, and behavior/immaturity issues, were very similar. The themes that were revealed by the data substantiated statements from many of the students and teachers in order to give a true sense of the experience. These findings drive the conclusions and implications that will be discussed in Chapter 5 of the study. Chapter 5 will introduce the conclusions made by the researcher and discuss implications of the findings for educational leaders in the future.

CHAPTER 5

DISCUSSION

Introduction

The purpose of this case study was to explore the impact of a scheduling intervention on the academic achievement of students identified as in need of remediation in the content areas of English and mathematics and to determine the perception of key informants about the modified schedule (Schedule Two). A review of literature found implementation of the block schedule to be both an effective method of educational reform and a relevant factor in student scheduling in English and mathematics, however, researchers are still divided on whether block scheduling helps students in need of remediation. Scores from the 2008-2011 school years on the Georgia High School Graduation Test (GHSGT) in English and mathematics were retrieved in order to determine the performance of students involved in the modified schedule. Additionally, students who followed Schedule Two and teachers who taught in the content areas involved in the study- both those directly and indirectly involved with the modified schedule- were interviewed to determine a comprehensive perception of the intervention block schedule. This chapter will examine the findings and conclusions of the study by emphasizing the central points and implications for administrators, educators, and educational reformists.

Overview of Findings

The study employed a case study design consisting of analyzing test scores for descriptive trend purposes, paired with the use of open-ended interview questions designed to elicit perception of teachers and students on the impact of the modified block schedule.

Numerical data for this study were derived from the results of the GHSGT for the 2008-2009, 2009-2010, and 2010-2011 school years, in English and mathematics, for the student participants identified in the study. The scores were analyzed to provide a snapshot of how students identified as being in need of remediation in the content areas of English and mathematics performed on the standardized GHSGT.

After synthesizing the collected data, four main concepts arose, each of which was explored in Chapter 4. The students voiced perceptions about beliefs about Schedule Two student performance scores, problems with scheduling confusion, issues resulting from student behavior/immaturity, and perceptions of student achievement. The Schedule One and Schedule Two teachers voiced perceptions about schedule confusion, the selection process, behavior issues, and the benefits of the year-long class for students in need of remediation.

Data formed the basis for the researcher's conclusions and implications. Research findings will now be discussed.

Discussion of Research Findings

The findings of this study should be evaluated with caution by readers. The findings presented merely reflect the perceptions of the six students and eight teachers who were interviewed in one public secondary school in the state of Georgia. The findings may or may not be reflective of the perceptions of modified block scheduling formats in other similar secondary schools in the country. The researcher believes that the size and isolated setting of Schedule Two may have uniquely contributed to the response rates and results. Additionally, the interviews were conducted at the end of the school year. There was a full year separating when the students

and teachers attended and/or taught Schedule Two, and when they were interviewed about their perceptions of Schedule Two. This space may have affected the outcome of the study. Also, only the 2010-2011 students were interviewed. No interviews for the 2008-2009 or the 2009-2010 Schedule Two students were conducted, due to the fact that these students had already matriculated.

Reforms are nothing new to education. The institution we know as public school has continued to evolve since its conception over 200 years ago (Knesting, 2007). What began with one room school houses, where students and teachers brought in coal to keep the room warm, which produced students well versed in Biblical studies, has evolved into to the modern day schoolrooms, which divide students between elementary, middle and high school levels. In current educational environments, even the youngest students are using some form of technology on a daily basis. Within the last fifty years, a variety of educational reforms have been geared to the improvement of American students on standardized achievement (Gardner, 2004). School systems, administrators, teachers are on a constant mission to find ways to improve test scores. On the high school level, many experiments on the operations of school have been centered on the rescheduling of instruction. In a desperate attempt to find a solution to the problem of low standardized scores, a large portion of school systems shifted from six or seven daily periods of instruction with students taking classes for the duration of an entire school year to the block scheduling format, where students take four classes for the duration of one semester each (Canady, 1995). The school in this study has operated exclusively on the 4x4 block plan for over a decade; however during the scope of this study, which included the 2008-09, 2009-2010, and

2011 school years, a modified scheduling format was in operation to meet the academic needs of students in need of remediation.

Schedule Two Student Performance.

The overall performance scores obtained by Schedule Two students on their English and mathematics GHSGT were better than expected based upon prior standardized test results. The percentage of Schedule Two students passing the English and mathematics portions of the GHSGT remained over 70% for the duration of the modified block schedule. In fact, during the final year of the modified year-long block schedule, the percentage of passing students exceeded 90% on both the English and mathematics portions of the test. With the exception of an exceedingly high mathematics score (95.8%) during the initial year of the Schedule Two class, the passing rates of the students taking the class grew steadily up to over 90%. These data indicated that the students were successful in achieving their goals- achievement and academic success on the GHSGT. Considering that these students were classified for placement in the Schedule Two class based upon failure to pass previous standardized tests, this level of personal and group achievement is noteworthy.

Scheduling Confusion.

Several students felt that one of the advantages of a year-long schedule was that it allowed instruction to be delivered at a pace that allowed re-teaching and reinforcement of critical concepts and skills. Students perceived they were able to better handle academic course loads based upon pacing, along with other non-academic responsibilities by not having to meet

with their English or mathematics course each day (Canady & Retting, 1995). Dividing the course load allowed for the students to be given additional time to dwell upon and digest content. The Schedule Two format, however, was not always noted advantageous. The disadvantage to this scheduling format that was most frequently cited was that of the confusion of the logistics of the schedule. Students complained that they faced several situations where their uncertainty over which class they were supposed to be attending led to them being late to class, or be forced to quickly transverse the immense campus, due to arriving at the wrong class.

Teachers seemed to be disgruntled with the inconveniences of the scheduling format as well, citing that classroom preparation time was affected due to confusion about which class they would be teaching. By and large, most of the students and teachers found some fault with some aspect related to the mechanics of the scheduling format. Canady and Retting (1995) also found that one of the major complaints about the adoption of the block schedule revolved around difficulty and confusion mastering the mechanics of the block schedule.

Although seeming to enjoy the flexibility in planning created by the modified schedule, many teachers expressed frustration about the lack of knowledge, dissemination, and direction on the part of the administration. Schedule Two teachers cited that they felt lost and oftentimes isolated regarding questions of where their students should be and what class they would face on a given day. Not only were they uncertain about the schedule, but there were very few co-workers with whom they could confer or who could commiserate, due to a general lack of awareness of the nuisances of the Schedule Two format. This problem was especially prevalent after a long weekend or holiday break, when answers were hard to come by, due to general forgetfulness of previous scheduling accommodations.

Student Selection Process.

The student selection process was an issue with which the Schedule One and Schedule Two teachers perceived as being incomplete. The interviews provided rich data scores, revealing various levels of awareness of the program, from teachers not aware of its existence to those who maintained intimate knowledge of details of its operations. Although there was a severe dichotomy in the level of awareness and involvement with the program, there was a general consensus amongst the teachers regarding the process in which students should be selected to participate in the Schedule Two format.

The format for student selection included a recommendation from former teachers based upon previous standard test scores. In the majority of cases, the teachers that had previously taught the target students were issued a list entailing possible candidates and asked to make suggestions based upon the submissions of the counseling and administrative staff. Although the majority of the teachers interviewed agreed that this was a proficient way in which to recognize students at an initial level, many felt that this system of selection and choice excluded many factors which occurred inside the classroom and were equally crucial to student success. A majority of the teachers interviewed felt as though student behavior and class performance should be considerations in the student selection process. Choosing students solely based upon standardized test scores seemed to isolate students who could be aided by attendance in the Schedule Two format by disregarding factors critical to student success. This corroborates with the study by McInerney, Cheng, Mok, and Lam (2012) which found a positive correlation between student accountability and academic achievement.

Behavior and Immaturity Issues.

An issue that was stressed amongst Schedule Two students was the concern about the conflicting personalities encountered in the classes. Additionally, a large majority of the students interviewed felt as though being placed in year-long classes with the same “trouble-making” students was a disadvantage to taking the year-long modified block schedule. Studies by Sutherland and Singh (2007), Kroeger and Kouche (2006), and Lee (2006), affirm these perceptions, positing that an explanation for the disruptive behaviors of these students lies in the fact that their histories of repeated failures lead them to form negative beliefs about their abilities. These negative beliefs can lead them to a self-fulfilling prophecy that becomes a cyclical, troublesome force in the classroom (Poncy, Skinner, & Axtell, 2010; Kirchner, Sweller, & Clark, 2006). The purported widespread behavior issues amongst the Schedule Two students appeared to alter the learning environment, making it more difficult for students to remain focused. The perceptions attained by students and teachers on the Schedule Two format concur with research performed by Kauffman, Lloyd, and McGee (1989), which concluded that students categorized as being in need of remediation are more prone to have disruptive, oppositional, defiant, or aggressive behaviors, all of which make them lack the ability to consistently comply with the teacher’s rules, follow classroom directives, or carry out even basic instructions explicitly. This is precisely the type of classroom environment which the students noted in interviews was created by the Schedule Two format.

The prevalence of maladaptive behaviors was not solely a concern that was addressed by the students, but also by both of the Schedule Two teachers that were interviewed. The aforementioned classroom environment created a challenge on the part of the educator in terms

of facilitating standard classroom instruction and cementing the formation of positive social relationships. Amongst the Schedule Two teachers, there was a consensus about the difficulties incurred by the disruptive behaviors that were witnessed in the class, along with a sense of frustration about the limited range of legitimate disciplinary techniques with which the teachers were able to equip in a class filled with students with such a wide range of potentially disruptive behaviors. Behavioral issues remained a major concern and disadvantage for both groups interviewed. The behavior of the Schedule Two students was perceived by the students as being similar to the behaviors of other students in need of remediation in the study conducted by Poncy, Skinner, and Axtell(2010).

Perceptions of Achievement.

Students interviewed, for the most part, were exceptionally content with their academic progress and attributed the year-long schedule to aiding in their success in passing the GHSGT the first time taken. In fact, many of the Schedule Two students performed so successfully on their standardized tests that they expressed an interest in taking more modified block schedules which combined other content areas. Because the students would be matriculating, many expressed willingness that recommend that other students in need of remediation take class which followed a modified block schedule as a tool to remediate deficiencies.

Likewise, both Schedule One and Schedule Two teachers expressed positive perceptions about the overall accomplishments of the Schedule Two class. Even those teachers with a very limited working knowledge of the Schedule Two format sensed an atmosphere of pride and achievement regarding the feats performed by the Schedule Two classes. Many of the teachers

that were not directly involved had witnessed Schedule Two teachers sharing positive commentary and/or results. Those that were unsure of the successes and/or passing percentages of the students expressed interest in learning about the accomplishments of the class, even across content areas.

Conclusions

Quantitative and demographic data for the study were presented in Chapter 4. Based on the data presented, several conclusions were drawn about the performance of Schedule Two. First, the study found that Schedule Two students performed better on their GHSGT in English and mathematics test they had been expected to perform, based upon previous standardized testing scores. The results from the quantitative data suggest that the Schedule Two students obtained scholastic benefits after being involved in the modified block schedule. This data affirmed research by Lawrence and MacPherson (2000), which found that “better scheduling alternatives that more adequately meet the needs of students and teachers [need to be promoted] because the block schedule does not meet all desired outcomes” (p.182).

Second, the results from qualitative data revealed that the impact of the Schedule Two class, though only conducted on a small scale, was primarily perceived as positive. An additional significant conclusion revealed by the qualitative data was that the Schedule One and Schedule Two teachers interviewed found the student selection process for the modified block schedule to be incomplete. Most of the teachers were perceived to believe that the selection process should be more multi-faceted, taking behavior and other factors into account as opposed to strictly relying upon test scores. Suggestions for reconciling this problem are detailed in the recommendations section of this chapter.

Despite indications that there were problems with the systemization of the Schedule Two class, both students and teachers found the year-long schedule to be conducive to student achievement for students in need of remediation. A majority of the students and teachers interviewed (93%) found that the year-long schedule was beneficial for remediating academic deficits and preparing students for standardized testing. The findings of this study support the Stanley, Spradlin, and Plucker (2007) and Trenta and Newman (2006) studies which found that for high school students who perform on a remedial level, the 4x4 block schedule resulted in a higher failure rate on standardized tests than those on other scheduling formats.

Third, when considering the percent of students and teachers who maintained unfavorable perceptions about the behavioral issues maintained by the students selected for Schedule Two (approximately 50%), a conclusion derived was that Schedule Two format and instructional procedures should be explored further to investigate how teachers can maximize instructional time by eliminating or reducing behavioral problems through classroom management techniques. The impact of these behavior problems might be more far-reaching than originally anticipated. According to several studies, existence of behavioral issues in the classroom affects task-mastery, creativity, altruism, overt cooperation, and problem-solving in the classroom, especially in remedial students (Geisthardt, Brotherson, & Cook, 2002; Orsmond, Krauss, & Seltzer, 2004; Freeman & Kasari, 1998; Buysse, Goldman, & Skinner, 2002). Thus, an average of 10% of the general student population suffers from behavioral symptoms which are prevalent enough to cause problems in the classroom, (not significant enough to be labeled as behavior disorder) while still requiring interventions outside of the classroom environment (Adelman & Taylor, 2002). The Schedule Two class was perceived to be an unbalanced mixture of students who

needed more individualized attention than the Schedule Two teacher could give, especially when faced with a plethora of students who were equally in need of support.

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Fourth, secondary school administrators should continue considering ways in which to improve upon the selection and logistics of Schedule Two. Furthermore, they should ensure that all stakeholders—students, teachers, parents, administrators, and community organizations—are involved in investigating, planning, designing, implementing, evaluating, and supporting the alternative scheduling formats, particularly for students identified as being in need of remediation. This conclusion was based upon the overall perceptions of the modified block schedule by 2010-2011 Schedule Two students, Schedule One teachers, and Schedule Two teachers.

Implications

The implications of this case study have implications for principals, superintendents, and boards of education. Throughout the case study, the research sought to determine the impact of a

modified schedule on the standardized achievement of students identified in the study and to examine the perception of students and teachers of the operation of the schedule. The perceptions surrounding the Schedule Two classes were, for the most part, positive and instructive. Those teachers and students that made suggestions for adjustments to the format of the class did so with the intention of improving the current format as opposed to attempting to overhaul and refurbish the program. One of the major elements of dissatisfaction revolved around the physical schedule of the class.

Scheduling of classes is one aspect of the educational system that can be easily manipulated. This is very important as educators and school systems are being placed on a constant vigil to ensure that each child makes at least minimal passing scores on standardized tests. Although much research has been conducted on the effects of block scheduling on students, very little research, if any, has been conducted on variations of the block scheduling format on the performance of students in need of remedial instruction. The open-ended interviews from former students on Schedule Two and content area teachers in the study were important, because, their perceptions of the schedule and how it operated will be a factor in determining whether or not this scheduling format should continue to operate at the school. Based upon the conclusions that were made, further research should be pursued that expands knowledge on intervention strategies and scheduling reform that are designed to meet the needs of students identified as being in need of remediation. These efforts will ensure that the voices of students, teachers, and administrators are being considered when addressing the unique needs of the individuals being considered to undertake modified scheduling formats. This study draws attention to the fact that the criteria being used to select student participants inadequately shuns

considerations that seem to be essential indicators of student engagement and achievement. In other words, students are not being chosen for their participation in the modified block schedule in an effective and all-inclusive manner. Because there are several factors which must be considered in determining student success and achievement in the classroom, administrators cannot hope to gain a truly complete grouping of all the students that could benefit from a program simply by selecting students for alternative programs like the Schedule Two intervention class based solely upon previous standardized test scores.

On a regular 4x4 block, which is the schedule followed by the general student populace at the school in this study, these students may have or may not have been scheduled for a mathematics class at the time of the testing. Regardless as to when students were scheduled for mathematics and or English classes, on the year-long schedule they would have received 105 hours of instructional time prior to testing. On a 4x4 block, a student may have had all 132 hours before testing, but classes ended in December and the test was not even attempted until late March. If they were scheduled in the spring, students would have had the advantage of being in the content classes at time of testing, but with only 78 hours of instructional time before testing. For the general student populace, this may not play a major factor in whether or not the student is successful on a standardized achievement test. However, for students identified as in need of remediation, this is a factor that should not be ignored.

The widespread adoption of the block scheduling reform, while beneficial, still requires manipulation and differentiation in order to meet the needs of an exceptionally varied student population. Especially in the core content areas, which are prone to either culminate in or else serve as the core of standardized exams, educational reformers need to ensure that the benefits of

the traditional year-long classes are not eclipsed in an attempt to mainstream block scheduling, therefore short-sighting efforts to promote a “one-size fits all” solution to America’s educational predicament. Reformers must strive to continue to find, modify, and improve scheduling solutions that accompany results, positive perceptions, and critical acclaim from an invested public audience.

Recommendations

Based upon the findings of the study that examined students’ and teachers’ perceptions of a modified block scheduling format utilized for students in need of remediation, and the review of literature, the following recommendations are made for future researchers, school leaders, and community members.

1. Based upon the experiences reported in the student and teacher interviews, confusion about the mechanics of the year-long schedule was one of the most common disadvantages of Schedule Two. Administrators could prevent isolation and confusion experienced by participants by making this aspect of the program more widely known at the school site and including Schedule Two on the master schedule.
2. According to teacher and student transcription analysis, formation of a class based upon academic remedial need resulted in more behavioral concerns than would be found in a random computer-generated class. More stringent guidelines, with the implementation of a behavior contract, may solve some problems reported by participants.

3. Based upon performances on prior standardized test scores, it appears that Schedule Two students' GHSGT scores in English and mathematics were higher than expected. These initial findings support a need for more comprehensive study on year-long scheduling for students in need of remediation.

4. The holistic study of other intervention models is needed to enhance research on programs that may impact students who are in need of remediation.

Dissemination

This study may be useful for all individuals who are involved in supporting and enhancing education for students in need of remediation in the United States. In addition, the researcher will contribute to professional literature related to alternative scheduling formats by publishing the dissertation and writing articles about the advantages and disadvantages of modified block scheduling for students in need of remediation. The researcher plans to disseminate the findings of this study within the school district in which the study was conducted, and other venues, as found appropriate.

Concluding Thoughts

This topic has been of personal interest to me since I became employed in a school with a 4x4 block schedule in the 2004-05 school year. During the 2007-08 school year, I was part of the county's leadership academy. The focus was to find ways to help students in need of remediation improve their passing capabilities on standardized achievement tests. Focus groups were divided into elementary, middle, and high schools. Each group was to come up with a list of three of the major problem areas and plan to address needs. In high school, the three goals

were aligned with the AYP goals. One of which was to increase passing rate of first-time test takers in the areas of English and mathematics. The committee recommended more instructional time for students in need of remediation. In order to achieve this, principals were allowed to deviate from the county's traditional 4x4 block schedule for the duration of a single block each day for students with the greatest need. I was involved with this program from the ground floor and I wanted to know what the results of students performance would be using the scheduling format. The following reflections summarize my final thoughts about the performance and perceptions of that program.

In regard to the students' performance on standardized test scores, the numerical data of year-long classes yielded positive results on passing rates and percentages for the three years of the study. As a whole, these rates may appear to be expected of high school students, where only minimal basic skills are assessed; however, the students in the study were not typical high school students. These students had previously experienced failures in both content area subjects and on standardized testing. Furthermore, this group had been identified as being at-risk of failing test and perhaps even dropping out of school. Although not the focus of this study, several students enrolled on Schedule Two did drop out of school for various reasons. In the 2009-10 school year, 11 of the 30 students selected were withdrawn from school due to a host of reasons, including scenarios such as students from having to be sent to alternative schools because of behavior problems, to individuals facing incarceration, to young woman becoming unable to finish due to pregnancy. The dropout rate for Schedule Two for that year, paired with the success of the passing rate of the GHSGT, prompted school officials to double the number of students

selected for the 2010-11 school year in order to be able to justify the usage of staffing for the Schedule Two program.

Because I was an active participant in the instruction of the Schedule Two class, I was not surprised when, during the interview process, the disadvantages surrounding of the confusion of the Schedule Two operation were paramount. I was one of many educators who could offer little, if any, assistance to students when they frantically presented questions about where they were expected to report for any given day. Additionally, I was not shocked when the interviewees revealed the elements of the Schedule Two schedule of which the students and teachers perceived as being positive.

What did astonish me was the focus that both students and teachers gave to the behavioral issues encountered in the Schedule Two class. Students and teachers reported that selecting students based on academic needs, and concurrently placing these similar students in one class resulted in a greater number of students who exhibited immature behaviors. This caused a plethora of personality problems in addition, which sometimes manifested in violent situations. The resulting combination often lacked in providing the peer role model that many of the students were accustomed to, perhaps without even realizing the need. The idea that students and teachers were uncomfortable dealing with these personality conflicts lent to both groups expressing displeasure at being forced to stay with the same group of students or teachers for the duration of the school year. This perception was a disadvantage that I had not previously considered.

Another surprising result that I obtained while analyzing the interviews occurred when I determined the Schedule Two teachers' perceptions of the lack of support that they wanted or

felt that they needed from the administration. A large majority of the teachers felt as though administrators should have had a minuscule, if any, part in the selection of students for the program. There was a general consensus that choices made by the administrators would reflect the students that had severe academic needs based upon their previous standardized test scores without taking factors such as behavior, attitude, performance and motivation to achieve into consideration. These factors are primarily witnessed by being familiar with the students' internal classroom behavior, thus making selection of students by administrators not only partial, but inept.

Overall teachers and students felt the year-long schedule was an effective remediation tool. Most of the students would take other year-long classes if offered. On the other hand, although teachers thought the year-long class was overall better for students in need of remediation, only one of the eight, would volunteer to teach it. This is a testament to the success of the program, as far as in producing student achievement, while still identifying some major issues that still require attention and reform. From my analysis of this study, I feel as though administrators should continue to diligently monitor the effect of the 4x4 block schedule on the entire school population, at the same time selecting a variety of scheduling formats that individually suit the needs of their varied populations. Moreover, they should pursue alternative schedules from the beginning of the secondary level (i.e., middle school). Early measures to reach these students would prove considerably more effective.

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APPENDIX A
GSU IRB APPROVAL DOCUMENT

Georgia Southern University Office of Research Services & Sponsored Programs Institutional Review Board (IRB)	
Phone: 912-478-0843	Veazey Hall 2021
Fax: 912-478-0719	P.O. Box 8005
IRB@GeorgiaSouthern.edu	Statesboro, GA 30460

To: Dora Harvey
Dr. Gregory Chamblee

cc: Charles E. Patterson
Vice President for Research and Dean of the Graduate College

From: Office of Research Services and Sponsored Programs
Administrative Support Office for Research Oversight Committees
(IACUC/IBC/IRB)

Date: 01/08/13

Initial Approval Date: 05/09/12

Expiration Date: 12/31/13

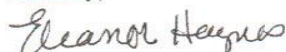
Subject: Status of Extension Request for Approval to Utilize Human Subjects in Research

After a review of your Extension Request for research project numbered H12436 and titled "A Case Study of the Impact of an Intervention Scheduling Model on Academic Achievement in English and Mathematics by Students in Need of Remediation." it appears that (1) the research subjects are at minimal risk, (2) appropriate safeguards are planned, and (3) the research activities involve only procedures which are allowable.

Therefore, as authorized in the Federal Policy for the Protection of Human Subjects, I am pleased to notify you that the Institutional Review Board has approved your extension.

If you wish to continue the project after 3 years you must reapply to the IRB as a new project. In the interim, please provide the IRB with any information concerning any significant adverse event, **whether or not it is believed to be related to the study**, within five working days of the event. In addition, if a change or modification of the approved methodology becomes necessary, you must notify the IRB Coordinator **prior** to initiating any such changes or modifications. At that time, an amended application for IRB approval may be submitted. Upon completion of your data collection, you are required to complete a *Research Study Termination* form to notify the IRB Coordinator, so your file may be closed.

Sincerely,



Eleanor Haynes
Compliance Officer

APPENDIX B

LETTER OF PERMISSION FROM COWETA COUNTY SCHOOL BOARD

Coweta County School System
Newnan, Georgia

Coweta County Schools Research Application
(Revised 05/07)

I. RESEARCHER INFORMATION

Name of researcher: Dora D. Harvey Home Phone: 678-423-1195

Address: 16 Tall Timbers Circle, Newnan, GA 30265

Employer: Coweta County Board of Education

Business Phone: 770-254-2800

College or institution sponsoring project: Georgia Southern University

Name of individual sponsoring project:

Address:

Phone number:

II. PROJECT INFORMATION

Beginning & ending dates of study: April-May, if IRB approval has been received

Synopsis of research: To explore the impact of a modified block schedule as an intervention strategy for improving remedial students' achievement in English and mathematics, as well as to ascertain the perceptions of teachers and remedial students of the modified block schedule model. The study will include data from the three years of the study, which encompasses the 2008-09, 2009-2010, and the 2010-11 school years. During each school year, one class of juniors participated in a yearlong modified block schedule for one block. In this block, students took English and mathematics on alternating days for the entire year in an effort to prepare for the GHSGT in these subject areas. Results of the GHSGT for participants will be charted in tables in order to create a description of the groups' standardized achievement performance. Interviews will include teachers and students who were participants in the modified block schedule during the 2010-2011 school year.

Coweta County Schools Research Application, page 2

III. POPULATION INFORMATION, continued

Population involved: 6 students and 8 teachers

Identify characteristics of participants:

A criteria will be established, the aim of which is to obtain a representative sample of gender and races to be included in the study.

Students were juniors who had enough credits for junior classification and who took GHSGT in the spring of 2011. Forty three juniors volunteered to participate in a modified block schedule class designed to remediate students in the content area of English and mathematics. The population of students to be interviewed will include 6 of the 43 students who volunteered to participate in the intervention class schedule. Targeted participants will be students who are 18 years of age and older, which is 70% of the population of the intervention class.

Eight teachers will also be asked to participate in study through interviews. Two of which were the teachers assigned to the modified block schedule block and three other teachers from each of the two content areas in the study, which were English and mathematics, for a total of 8 teachers.

Specify amount of time needed: The interview questions consist of 4-7 questions and should take between 15-20 minutes to conduct. All interviews should be completed in less than 2 weeks using elective classes with permission from teachers for students, and non instructional time for teacher interviews. If any additional scheduling is required, it will be done before and/or after school.

Schools: Newnan High School

Will you need access to students' permanent records? No, most all of the information used is public record and as I am employee of Coweta County, I have access to IC. No names of participants, school name ever used in the study.

Coweta County Schools Research Application, page 3

I understand that no individual participant(s) or school(s) will be identifiable through this research project. I recognize that the research is not complete until a copy of the results is sent to the Director of Testing and Research for the Coweta County School System.

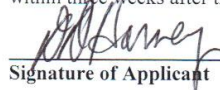
Due to the system's comprehensive academic program, research activities will be conducted during the following months unless special arrangements have been made:

October-November AND January-March

Please attach a copy of all correspondence (cover letter, questionnaires(s), etc. that you intend to send to Coweta County School System staff.)

Will students be surveyed as a part of this study? ___YES ___NO
If "YES", please attach a copy of your proposed survey instrument.

I realize that I will be notified in writing concerning the status of this research project within three weeks after the application has been received.



Signature of Applicant



Date

Please send this completed application with requested materials to:

**Ms. Maria Carroll
Lead Psychologist/SST Coord.
Coweta County School System
P.O. Box 280
Newnan, Georgia 30264**

COWETA COUNTY SCHOOL SYSTEM
DEPARTMENT OF PSYCHOLOGICAL SERVICES
NEWNAN, GEORGIA
770-254-2810

March 27, 2012

To Whom It May Concern (Georgia Southern IRB Committee):

Although the form states that interviews are to be conducted by the end of March, this deadline is to protect the testing schedule of younger students. This study does not include that population and thus, the March deadline is not a concern. The majority of the students are 18 years and older and do not require parental consent. Thus, as far as the school is concerned, they can be interviewed up to the last day of class, which is May 25, 2012.

Sincerely,



Maria S. Carroll, Ed S., NCSP
Lead Psychologist

APPENDIX C

INTERVIEW QUESTIONS FOR TEACHERS OF SCHEDULE TWO

1. For the past three years, a small number of selected juniors at your school agreed to participate in a modified block schedule for one of their four blocks of instruction. Describe for me what, if anything, you know, about the operation of this intervention at your school.
2. Students identified to be selected to volunteer based on poor performance in English or mathematics classes and/or poor performance on EOCT. Do you believe that this was a proficient way in which to select participants? Why or why not? What alternate suggestions would you have to identify students for the intervention program?
3. What benefit, if any, do you think a year-long modified block schedule would afford students identified as high-risk?
4. What was your role in the modified block schedule?
5. You were selected to teach the year-long modified block schedule for one block. What did you like the most about it? What did you like the least?
6. Would you continue to volunteer to teach this year-long modified block schedule if approached to do so again?

APPENDIX D

INTERVIEW QUESTIONS FOR TEACHERS OF SCHEDULE ONE

1. For the past three years, a small number of selected juniors at your school agreed to participate in an intervention schedule for one of their four blocks of instruction. Describe for me what, if anything, you know, about the operation of this intervention at your school.
2. Students identified to be selected to volunteer based on poor performance in English or mathematics classes and/or poor performance on EOCT. Do you believe that this was a proficient way in which to select participants? Why or why not? What alternate suggestions would you have to identify students for the intervention program?
3. What benefit, if any, do you think a year-long modified block schedule would afford students identified as high-risk?
4. How did you learn of the schedule? Was it through faculty meetings, close proximity of modified block schedule class, students, etc?
5. If asked to volunteer to teach a year-long modified block schedule, would you be willing to do so? Why or why not?

APPENDIX E

INTERVIEW QUESTIONS FOR STUDENTS

1. You were selected to participate in year-long English and mathematics classes, however the decision to accept placement was your own. What factors lead you to agree to participate in this modified schedule?
2. You were one out of the approximately 60 juniors chosen to participate in this year-long block schedule. Do you know why you were selected? (b) Explain how you were informed of the reason for being selected to participate. (Remember to use only titles and not specific name if mentioning people.)
3. You mentioned (or did not mention) the GHSGT as the reason for your selection into the modified block schedule for your English and mathematics year round class. Tell me what benefit, if any, you feel the year-long scheduling of classes in these two subject areas produced for you.
4. How did you perceive the modified block schedule? Explain by telling me what you liked most about schedule. Tell me what you liked least about the schedule. Your response does not have to be about academics. Please elaborate on an issue(s) that you would like.
5. If given the choice over again, would you choose to take the year-long modified block schedule again? Explain why or why not.
6. If a younger sibling or friend asked your advice about whether or not to take the modified block schedule, what advice would give him or her? Why?

APPENDIX F
GHS GT SCALE SCORES

Table 7

Scale scores needed for passing the GHS GT (www.doe.k12.ga.us)

Content Area	Below Proficiency	Basic Proficiency	Advanced Proficiency	Honors
ELA (GPS)	Below 200	200 to 234	235 to 274	275 or above
Mathematics (GPS)	Below 200	200 to 234	235 to 284	285 or above

APPENDIX G

REFERENCES FOR QUESTIONS AND LITERATURE REVIEW

Table 8

Interview Question Formulation References

Questions for Schedule Two Teachers	#2	American children trail[ed] significantly behind other first world countries on standardized achievement The increased pace required by a block schedule is too fast and too complex for students who are in danger of school failure	(Marshall, Sears & Shubert, 2000) (King-Sears, 2008)
	#3	Educational reformers search for ways of increasing student achievement and performance on basic standardized tests	Veal & Schriber (1990)
	#5	A teacher's reach, more than ever, extends outside the classroom and new factors must be assessed regarding a child's chances to succeed.	Brophy (1996)
Questions for Schedule One Teachers	#1	Reforms have brought about more stringent government controls, higher performance standards, and more punitive testing measures for students	Smyth (2006)
	#2	Block scheduling is a highly effective way in which to provide high impact instruction, specifically to the at-risk population,	Canady & Hotchkiss (1985)

		during the school day where time is focused on student learning and quality instructional time	
	#5	Students for whom primary and secondary interventions prove insufficient need additional support	George, White, & Schaffer (2007)
	#6	In order to develop a strong educational foundation, students need proper time and context	Schmidt (2004)
Questions for Students	#3	Class-size reduction, especially implemented within a form of parallel block scheduling, produced a large increase in academic achievement among under-achievers, especially socioeconomically disadvantaged students	(Leithwood et al., 2004)

APPENDIX H

STUDENT INFORMED ASSENT



**College of Education
Department of Leadership and Educational Administration**

Dear Student,

You volunteered to participate in a modified block schedule with English and mathematics on alternating days for an entire school year during your junior year of high school. The purpose of the modified block schedule was to prepare you for taking the GHSGT. This study is designed to explore your perception of that experience.

If you give permission, you will have the opportunity to participate in a 15-20 minute interview session. The interview will be held during your elective class, with teacher permission. An audio recording of your interview will be taken, simply for the purpose of transcription and destroyed at the completion of the study.

Your participation in this study is completely voluntary. You may stop participating at any time without any penalty. You may choose to not answer any question(s) you do not wish to for any reason. In order to protect your confidentiality, a number and not your name will appear on all of the information recorded during the experiment. All information pertaining to the study will be kept in a locked filing cabinet at the investigator's private residence. No one at your school will see the information recorded about you.

If you have any questions or concerns regarding this study at any time, please feel free to contact me, Dee Harvey, at dee.harvey@att.net, or Dr. Gregory Chamblee, my advisor, at gchamblee@georgiasouthern.edu. To contact the Office of Research Services and Sponsored Programs for answers to questions about the rights of research participants please email IRB@georgiasouthern.edu or call (912) 478-0843.

If you agree to participate in the study, please sign the form below and return it to Ms. Harvey as soon as possible. Thank you very much for your time. You will be given a copy of this assent form to keep for your records.

Title of Project: A CASE STUDY OF THE IMPACT OF AN INTERVENTION
SCHEDULING MODEL ON ACADEMIC ACHIEVEMENT IN ENGLISH AND
MATHEMATICS BY STUDENTS IN NEED OF REMEDIATION

Principal Investigator: Dee Harvey

Student Signature: _____

Date: _____

Appendix I

EDUCATOR INFORMED ASSENT



**College of Education
Department of Leadership and Educational Administration**

Dear Educator,

I am an employee of Coweta County Schools, and a doctoral student at Georgia Southern University. I am conducting a study on the impact of a modified block schedule as an intervention tool to increase achievement of students on the English and mathematics portion of the Georgia High School Graduation Test (GHSGT). I would like to interview you regarding this program. There is no penalty should you decide not to participate in study H12436. However, should you decide to participate, you will provide invaluable information to researchers trying to determine the holistic impact of an intervention scheduling model on the performance of students who are slated to take standardized achievement tests. You may stop participating at any time without any penalty. You may choose to not answer any question(s) you do not wish to for any reason.

The interview will last approximately 15-20 minutes. There will be no compensation for this study. The interview will be held at a non-teaching time and location of your convenience. Interviews will be audiotaped, transcribed, and analyzed by the researcher. All information pertaining to the study will be kept either in a locked filing cabinet or on the researcher's personal computer at the investigator's private

residence for a period of 7 years. The researcher will be the sole person who will have access to the material.

If you have any questions or comments concerning this study feel free to contact me at dee.harvey@att.net or call me (678) 423- 1195. Additionally, my faculty advisor for this study is Dr. Gregory Chamblee, who can be contacted at gchamblee@georgiasouthern.edu. Any concerns that you have concerning your rights as a participant in this study should be addressed with the Internal Review Board Coordinator at the Georgia Southern Office of Research Services and sponsored Programs. The telephone number for the office is (912) 681-5465. Thank you!

By signing below I agree to be a participant in study H12436.

Name _____ Date _____

APPENDIX J

TEACHER BACKGROUND INFORMATION SHEET

Background Information Form- Schedule One and Schedule Two Teachers
Please check and/or fill the appropriate line, the purpose of which is to collect basic information for the study.

Age	25-29 _____
	30-40 _____
	40-50 _____
	50-60 _____
	60+ _____

Years of Teaching Experience	0-5 _____
	5-10 _____
	10-20 _____
	20+ _____

Years at Current School	0-5 _____
	5-10 _____
	10-20 _____
	20+ _____

Area(s) of certification _____

Work experience outside of education (Please explain)
