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Effects on 8th Grade Advanced Placement English Class High-Stakes Test Achievement Using Extended Time Blocks

Douglas M. Corbett
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Douglas Corbett

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Walden University
2011

Abstract

Effects on 8th Grade Advanced Placement English Class High-Stakes Test Achievement

Using Extended Time Blocks

by

Douglas M. Corbett

MA, New Jersey City University, 2002

BA, Old Dominion University, 1992

Doctoral Study Submitted in Fulfillment

of the Requirements for the Degree of

Doctor of Education

Administrative Leadership for Teaching and Learning

Walden University

June 2011

Abstract

Student performance on high-stakes tests continues to be an important issue for school administrators. This quasi-experimental, quantitative study investigated the relationship between the amount of time 8th grade students spent in advanced placement English classes using an extended block schedule and their achievement on language arts sections of the New Jersey Assessment of Skills and Knowledge (NJASK) high-stakes tests. The study was based on Carroll's theory relating instructional time and student learning. The guiding research questions investigated if extended time blocks in advanced placement English would improve student achievement scores on the language arts sections of NJASK tests. The study compared NJASK mean scores between two groups of English middle school students. One group received 90 minutes of English instruction time using an extended block schedule and the other group remained in a traditional 45-minute English period. A nonequivalent, pretest–posttest design was used to investigate the research questions. NJASK scores were collected from a public middle school from 2007-2008 through 2009-2010. Frequency distributions, descriptive statistics and ANOVA tests were used to analyze the data. Results indicated that there was a statistically significant difference between the extended block and traditional groups' NJASK results from 7th to 8th grade. Further studies should explore the effects of extended blocks on high-stakes test achievement for 8th grade students in English classes that are not considered advanced placement levels. The findings of this study have positive social change implications on the way school administrators can use traditional or block schedule types to maximize student achievement on future high-stakes tests.

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Section 1: Introduction to the Study

Introduction

In the era of the No Child Left Behind (NCLB) Act of 2002, school success is often measured by student achievement on high-stakes test (Solorzano, 2008). An ongoing challenge for many school administrators involves getting all student groups to pass mandated tests (Posner, 2004). As a result, schools are dedicating more instructional time to tested subject areas in an effort to improve student test achievement (Cavanagh, 2006; McMurrer, 2008). Based on the theory that instruction time will have an impact on student learning and achievement, educators regularly accept that more time is better (Aronson, Zimmerman, & Carlos, 1999; Carroll, 1963; Fisher & Berliner, 1985; Marzano, 2003; O'Brien, 2006). However, understanding the relationship between instructional time and achievement on high-stakes tests is difficult due to limited research that usually involves single school settings (Cuban 2008; Smith, Roderick, & Degener, 2005). Many school administrators may find themselves asking a common question: Will dedicating more instruction time to tested subject areas significantly improve student achievement on high-stakes tests? This question was the focus of this study.

The effectiveness of dedicating more time toward tested subjects remains questionable and high-stakes test trends support the concern that student achievement currently remains an issue for some schools (Berliner, 2009; Cavanagh 2006; Nichols & Berliner, 2008; Popham, 2001; Petress, 2006; Phillips, 2006; Reville, 2007). According to the Nation's Report Card for 2007, achievement trends on National Assessment of Educational Progress (NAEP) tests indicated that a higher percentage of 8th grade

students were performing at or above the basic level than in previous years in the areas of reading (243–280 points out of 500) and writing (114–172 points out of 300). However, no significant changes were reported in the number of students performing at or above the proficient level for these areas of reading (281–322 out of 500) and writing (173–223 out of 300) throughout the United States (National Center for Educational Statistics, 2008). On a state level, the New Jersey Department of Education (NJDOE) uses a high-stakes test for Grades 3–8, the New Jersey Assessment of Skills and Knowledge (NJASK), to measure and report annual yearly progress (AYP) in compliance with NCLB requirements (NJDOE, 2007). Although test trend data is unavailable due to a change in the NJASK test design, the NCLB State Report (2008) for New Jersey reported that 28.2% of middle school students (Grades 6–8) were labeled as failures or partially proficient (below 200 points out of 300) on the language arts literacy portions of NJASK in 2008.

School C has been dedicating more instruction time to the tested subject of English in an effort to improve middle school student performance on the language arts sections of the NJASK. School C is a public middle school (Grades 7–8) located in a suburban area of New Jersey. School C is considered a poorer middle school based on the District Factor Group B (DFG B) rating (NJDOE, 2009). The socioeconomic status for public schools in New Jersey was calculated using the following criteria: median family income, percent of individuals in poverty, unemployment rate, occupational status, percent of adults with some college education, and percent of adults with no high school

diploma (NJDOE, 2004). The DFG scale ranges from A (poorest) to J (wealthiest) according to the NJDOE (2009).

School C has been classified as a school in need of improvement (NJDOE, 2008). As a result, it is required to increase the number of students who achieve proficient and advanced proficient scores on required language arts literacy components of the NJASK. In an effort to improve student achievement on language arts sections of the NJASK, School C expanded a scheduling reform in 2009-2010 that increased the amount of instruction time for 8th grade students enrolled in advanced placement classes of English. However, School C is not certain if the schedule reform achieved the intended goal—to improve student performance on language arts components of the NJASK. School C administrators would like to determine the effectiveness of advanced placement students spending more time each day on English.

School C provides more time toward the tested subject of English for 8th grade students using a block-type schedule. There are various types of block schedules that alter the amount of time students receive for instruction by extending the traditional 45 - to 50 - minute class periods (Lewis, Dugan, Winokur, & Cobb, 2005). Most block schedules are categorized as one of the following types: four-by-four model, A/B model, and modified block schedule (Harvey 2008; Queen, 2003). A four-by-four model uses block periods for subject areas on a semester basis (Lewis, Dugan, Winokur, & Cobb, 2005). The A/B model uses block periods every other day for subjects during an entire year (Queen, 2003). School C implemented a modified block schedule; it incorporated traditional and block scheduling approaches by adding an additional period of a selected

subject into a traditional schedule on a daily basis (Mowen, G. & Mowen, C., 2004; Harvey, 2008; Queen, 2003). School C referred to the schedule reform for 8th grade English classes as an *extended block*.

School C offers three levels of English for general education students in 8th grade using course sections 8100, 8200, and 8300. The 8100 sections are advanced placement English classes for the highest achieving students in School C. The 8200 sections are for students whose level of achievement is not as high as advanced placement students, but are still above average. The 8300 English sections are for the students with average and lower academic achievement in School C. Students classified as special education may be part of inclusion classes offered in 8300 sections, depending on their individual education plan (IEP) developed through the child study team (New Jersey Administrative Code, 2010). All English courses for general education students must follow the mandated New Jersey Core Curriculum Content Standards (NJCCCS), but the delivery may vary according to the section level.

Although there is no policy for assigning students to specific English courses, School C's guidance department is responsible for the placement of general education students based on grades, teacher recommendations, and parent/student feedback. Achievement on the previous year's NJASK may be considered when placing students in a section, but it is not a determining factor. Students eligible for placement in the 8100 English classes regularly have higher scores on the NJASK and outperform students in the 8200 and 8300 sections.

Regardless of their English placement, all 7th grade students at School C receive traditional 45-minute periods of English daily. In 2008-2009, 8th grade students enrolled in the 8200 and 8300 courses received 90-minute periods of English as a result of the extended block reform. Due to financial and personnel limitations, 8th grade students in the 8100 courses remained in a traditional English period of 45 minutes in 2008-2009. In the 2009-2010 school year, School C was able to provide extended blocks for all courses sections (8100, 8200, 8300). All 8th grade students, including those enrolled in advance placement or 8100 sections, received 90-minute periods of English daily in 2009-2010. Unlike the 8200 and 8300 sections, students in the 8100 sections were the only groups to convert from traditional periods in 2008-2009 to extended blocks of English in 2009-2010.

Many block schedule configurations do not increase the total number of instructional minutes students receive during a year (Gullat, 2006; McLeod, Fisher, & Hoover, 2003). But the extended block reform implemented by School C did increase the amount of time 8th grade students spent in English daily and for the school year. Previous research on various block scheduling configurations demonstrated its inconsistent effects on standardized test scores (Gullat, 2006; Zepeda & Mayers, 2006). Falk (2009) suggested that more research is necessary on the effects of block schedule types on high-stakes test achievement.

This study investigated the impact of the extended time block, which increased the amount of instruction time, by comparing NJASK test results for two groups of 8th grade students. Both groups were enrolled in 8100 sections or advanced placement

English classes. The group of 8100 students in 2009-2010 had extended block periods daily, but the 8100 group in 2008-2009 had traditional periods of English. Both groups of students shared similarities in terms of academic backgrounds, curriculum, and school settings overall. However, the two groups significantly differed in the amount of instruction time students received in 8th grade English classes daily and for the entire school year.

Data for this study was collected using quantitative methods in order to answer research questions about the two variables: extended blocks of instructional time and high-stakes test achievement. School report cards provided by the state of New Jersey describe test trends for public schools such as School C, but public records do not provide adequate data to analyze trends in student test achievement based on specific course sections. The findings of this study yielded information that is expected to help address the gap in research on the relationship between extended block periods and high-stakes test achievement. More detailed discussions about block schedules, instruction time, and high-stakes tests are provided in Section 2.

Problem Statement

School C administrators are uncertain about the effects of the modified or extended block schedule on high-stakes test achievement. The school implemented a schedule reform to improve NJASK language arts literacy scores from 7th to 8th grade levels. School administrators want to know if 8th grade students who received additional instruction time in advanced placement English using extended blocks outperform students in traditional periods of advanced placement English on the NJASK. By

comparing NJASK test data trends for these two groups, the findings of this study addressed the problem and determined if the schedule reform had a significant effect on student achievement.

The independent variable for this study was the amount of instruction time participants received each day in English classes under traditional and extended-block schedules. The extended block of time for English was designated as a treatment variable in this study because it was manipulated from year to year (Gravetter & Wallnau, 2008). The dependent variable in the study was participants' high-stakes test data from the language arts literacy sections of NJASK during the 2007-2008, 2008-2009, and 2009-2010 school years. This study used a nonequivalent, pretest–posttest to investigate the effects of the treatment on NJASK language arts achievement by comparing participant groups based on English course sections (traditional/extended block schedules) from year to year.

Nature of the Study

This quantitative study used a quasi-experimental approach. A quasi-experimental study “uses control and experimental groups but does not randomly assign participants to groups” (Creswell, 2003, p. 167). This quasi-experimental study used a nonequivalent, pretest–posttest design, in which both an experimental group and a control group took the same pretest and posttest, but only the experimental group received a treatment (Creswell, 2003). The nonequivalent pretest posttest design provided comparative data between groups which helped determine if the extended blocks of time had an effect on student achievement for the language art literacy sections of the NJASK.

Students enrolled in 8100 English courses in 2009-2010 were designated as the experimental group because they received the extended block of English. Students in the 8100 courses in 2008-2009 were designated as the control group because they did not receive this treatment or schedule reform.

To investigate the impact of extended blocks, student performance on the NJASK from 7th to 8th grade was used. All 7th and 8th grade students are required to take the NJASK annually, and the design and administration processes mandated by the state of New Jersey ensure that the NJASK provides a valid and reliable pretest and posttest for the purposes of this study (NJDOE, 2008). The NJASK scores in language arts from 7th grade provided the pretest or baseline data for both the control and experimental groups; the NJASK scores in language arts from 8th grade provided the posttest data for both the control and experimental group. Test achievement for participants in the extended block was compared with those in the traditional periods. Test data collected for this study was limited to results from 2008, 2009, and 2010 due to significant design changes in the 7th and 8th grade NJASK and the time line for School C's implementation of schedule reform (NJDOE, 2008).

Purposeful sampling was used to identify the different participant groups that naturally formed within School C's student population (Creswell, 2003). Participants were not actively recruited. The sampled groups were established by School C's English course sections rather than by researcher design. Students enrolled in School C's 8100 English courses in 2009-2010 formed the experimental group; those enrolled in the 8100

English sections in 2008-2009 formed the control group. Both groups were sampled from a single student population attending School C.

Sampling from a single school population and following the same participants over time eliminates the risk of systematic differences from comparison groups (Gravetter & Wallnau, 2008). Sampling participants only from School C ensured that they would share common educational experiences, available resources, teacher quality, administrative leadership, and socioeconomic backgrounds (Cuban, 2008). The scope of the study was restricted to using students from advanced placement (8100) English sections, and participants shared similar academic abilities, expectations, and experiences. The sampling method made it possible to investigate the effects of the extended-block treatment on NJASK achievement for students and avoid systematic differences that can influence NJASK test results when comparison groups are drawn from different backgrounds.

The rationale for the quasi-experimental design was to isolate the effects of the extended time treatment by investigating whether 8th grade student achievement on the NJASK improved compared to previous 7th grade achievement levels. If the experimental group's 8th grade scores increased from previous 7th grade levels, but the control group's scores remained constant or decreased, then the treatment would be considered effective. If the control group's scores increased but the experimental group's scores remained constant or decreased, then the treatment would be considered effective. If both group's scores remained constant or had equal increases or decreases, then the

effects of the treatment would remain questionable. Section 3 further explains the study's research methods.

Research Questions and Hypotheses

The investigation of the described variables and the comparisons of subgroups within the sample were guided by research questions.

1. What effects did traditional English courses have on 8th grade student achievement on language arts literacy portions of the NJASK in the 2008-2009 school year compared with their 7th grade test results from the 2007-2008 school year?

H_0^1 : The 8th grade students enrolled in traditional English course sections (8100) had no significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule.

H_1^1 : The 8th grade students enrolled in traditional English course sections (8100) had a significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule.

2. What effects did 8th grade students enrolled in extended block English courses have on achievement for the language arts literacy portions of the NJASK in the 2009-2010 school year compared to their 7th grade test results in the 2008-2009 school year?

H_0^2 : The 8th grade students enrolled in extended English course sections (8100) had no significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule.

H_1^2 : The 8th grade students enrolled in extended English course sections (8100) had a significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule.

3. What were the differences on literacy achievement for language arts portions of the NJASK between 8th grade students enrolled in traditional English periods in 2008-2009 and 8th grade students in extended blocks in the 2009-2010 school year?

H_0^3 : The 8th grade students enrolled in extended block English courses in 2009-2010 school year had no significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009.

H_1^3 : The 8th grade students enrolled in extended block English courses in 2009-2010 school year have significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009.

The study investigated the effects of extended block treatment on NJASK scores by testing hypotheses. The statistical procedures of this study used frequency

distributions, descriptive statistics, and analysis of variance (ANOVA) tests. A detailed discussion of the research method is provided in Section 3.

Purpose of the Study

The purpose of this quasi-experimental study was to investigate whether there is a significant relationship between extended blocks, which increases the amount of instruction time, and student achievement on high-stakes tests. The study attempted to determine whether providing 8th grade students an extended block period of advanced placement English could be an effective scheduling practice for increasing their achievement on the language arts portions of the NJASK. The findings of the study can contribute to professional thinking in areas of instructional time, block scheduling, and student achievement on high-stakes tests. The information yielded from the study can assist school administrators in deciding if extended block schedules can be an effective reform, that is, if it helps improve student achievement on the language arts sections of high-stakes tests and helps meet the testing demands frequently associated with NCLB.

Theoretical Base

The underlying theory for this study was that the amount of time dedicated for instruction has an impact on student learning and achievement. Carroll (1963) explored the relationship between learning and time, and developed a formula for the degree of learning based on time. Carroll (1963) described learning as a function of the ratio between the amounts of time spent on learning over time needed, and Carroll's findings helped to establish that a correlation existed between amounts of instructional time and student achievement. Since Carroll's work, other researchers have continued to explore

the relationship between amounts of instructional time and student learning and achievement. Gettinger (1985) tested Carroll's formula in an experimental study, and reported that providing less time than needed to learn had a negative impact on student achievement, as predicted by Carroll's research. A common belief in education has been that more time will help to improve student learning and achievement (Aronson, Zimmerman, & Carlos, 1999; Fisher & Berliner, 1985; Marzano, 2003). "There is a relationship between the amount of time invested in learning and the quantity and quality of learning that occurs for any given group of students... one way to increase student achievement is to manipulate time" (Gandara, 1999, p. 3). This study builds on Carroll's theory by investigating whether converting a standard 45-minute class into a 90-minute class had a significant impact on high-stakes test achievement for middle school students.

School C initially implemented the extended block period of English in 2008-2009 based on the rationale that the extra time allotted by this schedule reform would improve student achievement on the language arts literacy sections of the NJASK. The 2008 NCLB Report for School C aggregated the 2007-2008 NJASK language arts literacy scores for 7th and 8th grades, and these combined averages indicated 19.2% of School C's student population failed the language arts sections (NJDOE, 2008). The NCLB Report for the state of New Jersey (2008) indicated that 28.7% of the middle school span (Grades 6-8) failed the language arts literacy of NJASK in 2007-2008. Based on the available test trend data, School C seemed to perform better than New Jersey State averages on the language arts sections for the NJASK in 2007-2008. However, School C was classified as a district in need of improvement for not making

adequate progress according to the school's 2008 NCLB Report (NJDOE, 2008).

Available public information and aggregated averages failed to provide test trend data for 7th and 8th grade students enrolled in School C based on schedule types.

School C was not alone in focusing more time on tested subjects, and the accountability measures associated with NCLB made dedicating more time toward tests a common phenomenon in schools throughout the United States (McMurrer 2008; Petress, 2006). Since 6 hours of instruction per day for 180 days has remained the norm for schools throughout the nation (National Center for Educational Statistics, 2008), additional instruction time has been regularly dedicated to tested subjects by reducing amount of time students spend in nontested subjects (Amstrong, 2006; Petress, 2006; Phillips, 2006; Reville, 2007). Even though schools throughout the nation have been dedicating more time toward tested subjects since the enactment of NCLB, limited evidence has supported the effectiveness of this practice on high-stakes test achievement (Nichols & Berliner, 2008; Popham, 2003). Some states have reported improvement on state-administered, high-stakes tests (Cronin, Dahlin, Adkins, & Kingsbury, 2007; Kellaghan, Greaney, & Murray 2009), but student achievement on the NAEP for writing and reading has not significantly improved according to the Nation's Report Card for 2007 (Lee, Grigg, & Donahue, 2007; Salah-Din, Persky, & Miller, 2008). Concerns surrounding limitations of current school calendars have educators and policymakers exploring strategies which use time more efficiently (O'Brien, 2006; National Center for Education Statistics, 2008). School C's decision to implement the extended block

schedule was intended to use the limited amounts of time so that students would be better prepared for the NJASK test.

Various types of block schedule configurations have been identified (Harvey 2008; Lewis, Dugan, Winokur, & Cobb, 2005; Queen 2003). The modified or extended block schedule type incorporates a single block of time for selected subjects into a traditional schedule format (Mowen, G., & Mowen, C. 2004). The block scheduling configuration implemented by School C rearranged existing allotted time for instruction without extending the length of the school day. Block scheduling types allow for uninterrupted instructional time by alternating the amount of time dedicated for instruction and extending classes beyond the traditional period of 45–50 minutes (Daniel, 2007; Lewis, Dugan, Winokur, & Cobb, 2005; Queen 2003). Although most block schedules do not increase the total amounts of instructional time for a school year (Gullat, 2006; McLeod, Fisher, & Hoover, 2003), the extended block of time implemented by School C did double the amount of instructional minutes 8th grade students received in a year for the tested subject of English. Additional periods of time in tested areas may allow teachers to better prepare students and address individual weaknesses to raise achievement (Cavanagh, 2006; Paratore & McCormack, 2007).

Previous studies in the educational literature included mixed findings about the impact of block schedules on student achievement as determined by high-stakes test results. Harvey (2008) analyzed student performance on a high-stakes test titled, 10th grade Massachusetts Comprehensive Assessment System (MCAS), from 2001 to 2005. There were no significant differences in student achievement in English between schools

using traditional and block schedules. However, Forman (2009) utilized the same high-stakes test and found that one public school in Massachusetts that had implemented a block schedule increased the number of students passing on the MCAS overall by 15% in the first 2 years. Gipson-Bruce (2008) found no significant differences in language arts literacy achievement on 4th and 6th grade NJASK test achievement for student groups that received traditional schedules compared to those who received block schedules. Schott (2009) found that the same group of students under a block schedule format scored significantly higher on reading portions of the Texas Assessment of Knowledge and Skills (TAKS) as 9th graders compared to when this same group was instructed the following year as 10th graders under a traditional schedule. The New Jersey Principals and Supervisors Association (NJPSA) conducted a third biannual survey since 1998, and the results from those surveys confirmed that schools using block or flexible block schedules continually reported improvement in standardized test scores (NJPSA, 2009). Although block scheduling types impact the nature of instruction and learning by increasing class length (Danielson, 2002; McLeod, Fisher, & Hoover, 2003), the evidence is not clear about the consequences of block schedules on test achievement regardless of the methodology used to determine the effectiveness (Gullat, 2008; Zepeda & Mayers, 2006).

The extended block schedule configuration lacked foundational, theoretical, and methodological support in the literature, and the effects of the extended block type on high-stakes test achievement was even more limited. While the lack of evidence supported the need for this study, establishing a theoretical base on the subject of

extended time block was hindered due to a gap in the literature. The variables of instruction time, high-stakes tests, and block scheduling were investigated further and in more detail to develop a better understanding about the nature of the relationship between extended blocks of time and high-stakes test achievement. Detailed discussions about previous research appear in section 2.

Definition of Terms

Academic learning time: the amount of time students are engaged and working on tasks at the appropriate level for them (Rangel, 2007).

Advance placement English: English course sections 8100 are dedicated for the highest achieving or top performing students in School C. The guidance department of School C places students based on grades, teacher recommendation, and parent/student feedback. Previous performance on high-stakes tests (NJASK) is considered, but it is not a determining factor.

Allotted or allocated time: total amount of time dedicated for class instruction and learning (McLeod, Fisher, & Hoover, 2003).

Alternate or A/B block schedule: classes have an assigned block period every other day for certain subjects during an entire year (Queen, 2003).

Block scheduling: uses a block of time for approximately 90 minutes, and students may take these courses on a semester basis rather than an entire school year (Ravitch, 2007).

Extended or modified blocks of time: a schedule format that combines block and traditional scheduling by adding an additional class period of time to a specific content area on a regular basis (Queen, 2003).

Four-by-four block: students take a block period of four subjects for a semester rather than entire year of eight subjects (Lewis, Dugan, Winokur, & Cobb, 2005)

High-stakes tests: standardized tests that carry serious consequences based on student performance. These tests are typically given in reading, writing, and math (Horn, 2004).

NJASK: acronym for the New Jersey Assessment of Skills and Knowledge measures student achievement in the knowledge and critical thinking skills defined by the NJ Core Curriculum Content Standards in language arts literacy, math, and science for grade levels three through eight (NJDOE, 2005).

Traditional schedule: organizes a school day into usually six to eight periods of 40 to 50 minutes that students take for an entire school year (McCleod, Fisher, & Hoover, 2003; Ravitch, 2007).

Assumptions

An assumption of this study was that the extended block period, which provided additional amounts of instruction in 8th grade English, are being used effectively. Teachers in School C have received ongoing professional development which focuses on using extended blocks for meaningful teaching strategies and learning outcomes.

It was assumed the staff at School C adhered to all NJASK test administration procedures in accordance required state mandates to ensure the validity and reliability of

this high-stakes test (NJDOE, 2001). Like other public schools in New Jersey, School C must train the staff on proctoring the test and the testing regulations to avoid potential punitive actions and financial penalties (NJDOE, 2001).

The 8100 English course sections are considered advanced placement classes, and it was assumed the students were placed properly according to School C's criteria. English courses under a traditional or extended block schedule must adhere to the same curriculum and instruction standards which align with the CCCS for English in the state of New Jersey. Therefore, it was assumed that School C adhered to the state standards when providing English instruction to advance placement students.

Limitations

The first limitation was the study used NJASK test data from 2007-2008, 2008-2009, and 2009-2010 to answer the following research questions: (a) What effects did traditional English courses have on 8th grade student achievement on language arts literacy portions of the NJASK in 2008-2009 compared to their 7th grade test results in 2007-2008? (b) What effects did students enrolled in extended block English courses have on language arts literacy achievement for 2009-2010 NJASK compared to their 7th grade test results in 2008-2009? (c) What were the differences between 8th grade students enrolled in the English courses with extended blocks compared to 8th grade students enrolled in traditional English periods on language arts literacy achievement for NJASK in 2008-2009 and 2009-2010? This study was limited to answering research questions by comparing NJASK test results between traditional and extended student groups as they move from 7th to 8th grade.

A second limitation was that this study investigated the effects of the extended block schedule reform on student performance on high-stakes tests. This study did not examine other potential variables that may influence student achievement such as ethnicity, teacher quality, or administrative leadership.

The third limitation was that this study did not investigate if high-stakes testing is an effective means for holding schools accountable and measuring student achievement in the subject area of English. This study was limited to using the established NJASK proficiency levels as a measurement for student achievement on the language arts sections of this test to accurately and fairly measure student mastery of the English core curriculum content standards (NJDOE, 2009).

Scope

This study used participants and collected data from School C for the 2007-2008, 2008-2009, and 2009-2010 school years. However, not all the middle school students (grades 7–8) enrolled in School C were used for the purposes of this study. Participants were comprised of only those middle school students enrolled in 8100 English sections scheduled through School C during the 2008-2009 and 2009-2010 school years. Student placement in these courses was determined by criteria and requirements established by School C rather than by the design of the researcher.

Delimitations

In this study, all participants were selected from one middle school (School C), which resulted in the contraction of the generalization of the findings. School C is considered a District Factor Group B (DFG B) middle school according to the

socioeconomic classification criteria, ranging from the poorest as A and the wealthiest as J (NJDOE, 2004). Participants were sampled from a school population that falls on the lower end of the DFG socioeconomic spectrum.

A second boundary was that all participants were purposely selected from the 8100 English sections, because these sections changed from a traditional period in 2008-2009 to an extended block in 2009-2010. Since students enrolled in other English course sections offered by School C (8200 and 8300) received extended blocks for both 2008-2009 and 2009-2010 school years, there would be a lack of comparative data between traditional and extended block schedule types for those other student groups. Students enrolled in 8100 English sections are considered the top performers in School C. The exclusion of students in 8200 and 8300 English sections, and students classified as special education, limited the generalizability of the findings.

Significance of the Study

It is expected the findings of this study can add to the existing research on the relationship between extended blocks and student achievement on high-stakes tests. School C implemented a schedule reform that extended the amount of instructional time students received in English daily for the purpose of increasing student achievement on high-stakes tests. In this study, I examined the effectiveness of this schedule reform for School C and sought answers regarding the impact of extended instruction time on student test performance. It is anticipated data obtained from the study can yield information to assist School C leaders and other school administrators in reevaluating how increases in instruction time can influence student achievement on high-stakes tests.

The National Commission on Excellence released the Nation at Risk in 1984 which expressed important concerns relating to effective use of instructional time in American schools (Gullatt, 2006). Today, more than 25 years later, the emphasis on high-stake test scores in the field of education requires schools to utilize time for purposeful and efficient teaching and learning practices (Masci, 2008). According to Kelly and Monczunski (2007), schools and students are being labeled failures as result of test based accountability systems. The information gathered by this study may be used to determine if an extended block schedule in English can be a purposeful and efficient reform for schools. The legislation behind accountability mandates should not only identify and reward successful programs, but provide evidence about which programs need to be altered or eliminated (Hoffman & Nottis, 2008). The results from this study can provide school administrators with evidence on whether the extended block type of schedule reform is effective use of time by helping students pass required tests.

Summary and Transition

Many school administrators may readily accept the theory that more time will improve student achievement. Yet, there is limited evidence to substantiate that block schedule models' impact on instruction time increases student scores on high-stakes tests. This study investigated whether School C's extended block schedule reform, which increased the instruction time that 8th grade students spend in English class, had a significant impact on achievement on for the language arts portions of the NJASK. The findings of this study can be used to determine if students who spend more time in

English under extended blocks improve more on tests than those who receive less instructional time (a traditional period).

A nonequivalent, pretest and posttest design was used. The study collected data from a single school setting (School C); purposeful sampling was used to group participants based on their class schedule in English. The research question asked whether extended blocks of time in English classes affect student language arts literacy achievement on the NJASK.

The study was limited to analyzing the effects of extended English blocks (independent variable) on achievement in the language arts sections of the NJASK (dependent variable) for 8th grade students. The study assumed extended English blocks are being used for quality teaching and meaningful learning purposes. Given that NCLB requirements have made passing high-stakes test a priority for schools, the results of this study can help School C and other school leaders determine how increases in instruction time can influence student achievement on high-stakes tests (Nichols & Berliner, 2008).

Section 2 provides a comprehensive review of the current literature on block schedules, instructional time, and high-stakes tests. Section 3 provides a discussion of the methodology used for the study. The research design, participants, data collection process, and analysis procedures are described in section 3. The presentation and analysis of the findings for this study are discussed in Section 4. Section 5 interprets the results, comments on their social implications, and makes recommendations for action and further studies.

Section 2: Literature Review

Introduction

The purpose of this quasi-experimental study was to investigate whether a significant relationship exists between extended blocks of 8th grade English and student achievement on high-stakes tests. The purpose of the literature review was to provide a thorough analysis about the impact block schedules and increased amounts of instruction time have on student performance on high-stakes tests. The philosophical and historical basis of block scheduling was reviewed. The theory that a relationship exists between instruction time and student achievement was explored.

The research strategy for the literature review was guided by the main and subsequent research questions. The keywords used for this search were *instruction time*, *student achievement*, *block schedule*, and *high-stakes tests*. The following databases were used: ERIC, Teacher Reference Center, and ProQuest Dissertations and Theses.

The literature review yielded information on school use of instruction time, block scheduling, impacts of high-stakes tests, and achievement trends. I selected bibliographies of reviewed literature to expand the scope of evidence. This research strategy yielded additional resources and data about the benefits and barriers of block scheduling on student achievement trends on high-stakes tests.

Theoretical Base: Instruction Time Affects Achievement

Previous studies have drawn conclusions that a relationship exists between the amount of instruction time and student learning and achievement. Carroll (1963) developed a model of school learning, based on time, using the following formula: The

degree of learning is expressed as a function of the ratio between the amounts of time spent on learning and the time needed (degree of learning = time spent/time needed). Carroll's research helped to establish that there is a relationship between amount of instructional time and student achievement (Fisher & Berliner, 1985; Gettinger, 1985; Smith & Degener, 2006; Wiley & Harnishfeger, 1974). Fisher and Berliner (1985) credited Carroll's theory for converting the measurement of learning and achievement from the more difficult factor of aptitude or intelligence to the simpler variable of time. Previous studies about Carroll's theory investigated and substantiated the theory that providing students with more time to learn has positive effects on their learning and achievement (Fisher & Berliner, 1985; Marzano, 2003; O'Brien, 2006).

Quantitative research methods have been used to investigate the theory that the amount of instruction time impacts student achievement. In a study by Wiley and Harnishfeger (1974), schooling amounts were quantified for 40 schools by averaging the daily attendance by the total hours of instruction available in a year for a particular school. Students who received 24% more schooling in a year demonstrated increases in achievement on reading comprehension by two-thirds. "A pupil can not learn a task to which no time is allocated...can only partially learn a task when allocated less time than needed...the time allocated for learning must have a forceful impact on achievement" (Wiley & Harnishfeger, 1974, p. 10). The Wiley and Harnishfeger study was credited as one of the first to build on Carroll's theory about the connection between learning and time (Gettinger, 1985). The findings of the Wiley and Harnishfeger study (1974) suggested that more instruction time improves student achievement.

Gettinger (1985) built on Carroll's research by examining the relationship between amounts of time and student achievement on experimental reading tasks. The experimental reading tasks consisted of school-related reading passages, and student had to answer 10 multiple-choice questions on these readings. Initially, 4th and 5th grade participants (87 girls and 84 boys) were allocated as much time as they needed to achieve 100% mastery. Based on previous achievement levels, the amount of time was reduced for participants to correctly answer all questions. The findings concluded that reading achievement decreased when less time was allocated than students needed to learn a task (Gettinger, 1985). This evidence supports the theory that a relationship exists between learning and achievement, and additional time could be an influential factor for improving student performance in a particular content area.

In a study focused more on learner rather than school use of time, Witkow (2009) found that high achieving 9th graders spent more time studying and less time with their friends than lower achieving students. Participants (350 males and 352 female) completed a diary containing an activity checklist every night for 2 weeks. Each day they had to indicate amounts of time spent with friends or doing homework outside of school. Quantitative methods were used to measure the effects of daily study time and time with friends on student grade point averages. Students with higher grade point averages spent less time with friends during the week and were more predictable in the amount of time spent studying based on demands of the school workload. This study provides evidence to support Carroll's theory by suggesting students who dedicate more time toward learning increased achievement outcomes.

Qualitative studies have been conducted to investigate the underlying theory, which often consider how teachers and students utilized allocated time quantities (Rangel, 2007). A historical study or historiography collects and analyzes past data from secondary and primary sources (Hatch, 2002). The historiography by Aronson, Zimmerman, and Carlos (1999) conducted a review of previous studies involving time and student achievement. Their analysis concluded instructional time must be well utilized for substantial gains in student achievement to occur, and the allocation of time alone does not improve student results. These findings substantiate the underlying theory, but both quantity and quality of the instruction time may affect student achievement.

Smith, Roderick, and Degener (2005) examined the impact of a reform known as Lighthouse on high-stakes test achievement using a mixed-method approach. The Lighthouse program provided extended learning time after school for public elementary and middle school students in Chicago. A survey was administered to Chicago Public Schools (CPS) in 2000 that asked principals to report the enrollment in the academic hour of Lighthouse. Out of 521 schools surveyed, 352 elementary principals responded, and 257 offered the additional academic hour during 1999-2000 school year. Data collection included classroom site visits for 3rd and 6th grades by trained observers during morning language and math lessons and after school Lighthouse instruction. Student academic and administrative records were analyzed with the management of the Consortium of Chicago School Research. The findings indicated elementary students enrolled in the Lighthouse program improved on Iowa Test of Basic Skills (ITBS), but the effects were

not significant on middle grades (6–8). The relationship between providing additional learning time and achievement were most powerful for schools serving disadvantaged and low-performing students (Smith et al., 2005). While this study provides evidence to support the underlying theory, the effects of allocating more instruction time at the middle school level was not substantiated.

Based on syntheses of 2,572 studies, Walberg (1988) identified nine factors that consistently influence achievement: student ability, development by age/maturation, motivation, amount of time, quality of instruction, home, morale of classroom, peer group, and minimum leisure time spent viewing television (Walberg, 1988). “If these variables were all constant, time alone would appear to be a powerful determinant of learning” (Walberg, 1988, p. 84). Unlike other variables, amounts of time and quality of instruction can be directly altered or influenced by schools (Walberg, 1988). Although this qualitative study described other influential variables may have potential effects on student achievement besides time, Walberg’s findings supported Carroll’s theory that a relationship exists between time and achievement.

Gandara (1999) described how instructional time can be a powerful school reform for improving student achievement. “In terms of Carroll’s model, current reform efforts pertaining to time generally focus on increasing students’ opportunity to learn.... Block scheduling increases the amount of time allocated to a specific subject matter during a given day” (Gandara, 1999, p. 17). Time is related to learning, and more time spent learning specific content increases achievement (Gandara, 1999). All block schedule

models significantly impact how schools use instructional time (Danielson, 2002; Queen, 2003).

A frequently accepted belief in education is more time for instruction yields increases in student learning and achievement (Berliner, 2009; Goodman, 1990; Marzano, 2006). O'Brien (2006) summarized the relationship between instructional time and student achievement with the following statement, "common sense suggests that the more time spent on learning, the more in fact students will learn" (p. 1). According to Baines (2007), the current standards based movement in education inherently assumes that more time and more high-stakes tests will produce better students.

School Use of Time and Achievement

According to 2005-2006 data from the National Center for Education Statistics (2008), annually the average public school in the United States provided approximately 6 hours of instructional time for 180 days. The amount of instruction time offered by public schools over the past 50 years has only increased 2 days from the 178-day average in 1960 (National Center for Education Statistics, 2008). A subject of ongoing educational debate is whether 180 6-hour days allow for adequate amounts of time for effective instruction and learning.

The National Commission on Excellence released the *Nation at Risk* (1983) which drew national attention by expressing concerns about instructional time and calling for reforms related to time in the educational system. The National Commission on Time and Learning (1994) described public schools as prisoners of time due to constraints of time in the school year. This report warned that American school children would

continually fall behind other nations as a result. One of the recommendations for fixing the design flaws of school time was to abandon traditional periods. The National Commission on Time and Learning (1994) suggested schools should provide block schedules of two or more periods for extended exploration of topics and learning opportunities.

Concerns about the confines involving existing school calendars have educational leaders and policymakers exploring strategies that use time more effectively in schools (National Center for Education Statistics, 2007; O'Brien 2006). One of the intentions of The Time for Innovation Matters in Education Act (2009) focused on increasing student achievement by offering additional amounts of instruction time. Expanding learning time should be offered to provide 300 or more hours during the school year. Schools should use extended days or weeks for improving proficiency in core academic subjects.

Some researchers have investigated how schools are using limited time resources to increase student achievement. Smith (2000) used qualitative methods to examine how instructional time was delivered in urban schools in Chicago. The purpose of the study was to determine how much time was spent on instruction of programmed curriculum. "Noninstructional time" was described as transition between classes, time spent on classroom management, and time spent "waiting to do nothing" (Smith, 2000, p. 658). Observations were conducted on grades 2, 5, and 8 from 1994–1996. Data was documented for more than 70 teachers and 300 periods of language arts, math, and social studies. Findings indicated Chicago schools delivered 40% to 60% (540 hours at best) of

the district mandated goal of 900 annual instruction hours. “The quantity of instructional time can have direct, positive effects on student achievement and school leaders; administrator and partners can do much to strengthen and restore it” (Smith, 2000, p. 676).

Some schools have increased instruction time amounts through initiatives that expanded the school day daily or add days to the school calendar. The National Education Commission on Time and Learning (NCTL) defined expanded time schools as those that add at least 300 additional school hours to a school year. From the winter of 2008 to spring 2009, the NCTL developed a database for expanded time schools that contained 655 schools across 36 states serving approximately 300,000 students (Farbman, 2009). Expanded time schools offered 25% more instructional time than national norm. A majority of these schools were public charter schools, but 25% were standard district public schools. Approximately 66% of the student populations in expanded time schools were classified as poor. Based on state tests scores for one year, “a correlation analysis found a statistically significant ($p < .01$) moderate association between the number of minutes per day and student performance for grades 7 in English Language Arts” (Farbman, 2009, p. 3). Students in the expanded time schools outperformed students under the normal 6-hour school day.

The Massachusetts Department of Education funded and implemented the Expanded Learning Time Initiative (ELT) which increased academic learning time. The ELT expanded the school schedule in the form of longer days or additional days by a minimum of 300 hours for the school year. According to the Massachusetts ELT 2008

Annual Report, middle school level students in ELT schools increased achievement on the English components of the Massachusetts Comprehensive Assessment System (MCAS) from 2007-2008. These findings were based on quantitative analyses of test results. The ELT schools' achievement levels from 2006-2007 were compared to previous achievement levels from 2002-2006. After two years of implementation, the proficiency rate for language arts was 40% at the middle school level, but it increased to 46% for the same 10 schools that expanded their school day. In a separate analysis, five out of the seven ELT schools narrowed the student achievement gap in language arts sections of the MCAS tests for grades 6–8.

Both the Farbam Report (2009) and Massachusetts ELT 2008 Annual Report collected data about schedule reforms which provide more time in core subjects. These two reports specifically analyzed the impact that additional amount of time had on high-stakes test achievement. Evidence from both the Farbam Report and Massachusetts ELT 2008 Annual Report substantiated the underlying theory that there is a connection between instructional amounts and student achievement.

High-Stakes Tests

Historically, in education, tests have been used to assess student understanding and effectiveness of teachings (Popham, 2001). The purpose of standardized tests is to measure student ability, provide feedback on instructional effectiveness, and compare or rank students and schools (Horn, 2004; Huebert, 1999). Statewide tests measure academic content standards of facts, knowledge, and concepts students should know at specific grade levels (Grissmer, 2001; Hamilton, Stecher, & Klein, 2002; Horn, 2004;

Huebert, 1999). However, high-stakes tests are different than other forms of standardized and statewide assessments. High-stakes tests are standardized tests that carry serious consequences based on student performance (Horn, 2004). High-stakes tests are typically given in core content areas of English and math to determine student and school progress in mastering established curriculum content or skills (Horn, 2004; Hamilton, Stecher, & Klein, 2002; Popham, 2001).

Soloranzo (2008) described how the accountability demands of NCLB rely on the extended use of high-stakes test as barometers of achievement. Schools are required to make adequate yearly progress (AYP) towards all students being proficient in reading and math (Armstrong, 2006). High-stakes accountability approaches under NCLB gave states the authority to impose financial penalties on local school districts that failed to achieve benchmark scores on high-stakes tests (Hamilton, Stecher, & Klein, 2002; Peterson & West, 2003; Turner, 2009). Accountability systems forced school leadership to refocus time and energy on raising test scores in addition to managing all other school responsibilities (Gentiluccio & Muto, 2007). School administrators must ensure instruction time was being used for purposeful teaching and learning strategies, and high-stakes tests are being used to measure the effectiveness of those strategies (Masci, 2008).

High-stakes Tests Influence on School Instructional Time

Since the passage of NCLB, schools have been dedicating more time for high-stakes test preparation (Nichols & Berliner, 2008). The phenomenon of teaching to the test is one of the concerns frequently raised about the impact of high-stakes test on school use of instruction time (Posner, 2004). Marzano (2006) expressed concerns regarding the

amount of time necessary to implement all required standards and benchmarks derived from the NCLB movement. Marzano (2006) stated, “71% more instructional time than is now available would be required to address the mandated content in the standards documents...schools would have to extend from kindergarten to grade 21 or 22 to accommodate all benchmarks” (p. 13). Marzano (2006) used data gathered by researchers through Mid-continent Research for Education and Learning to derive at his conclusion about the amount of time students need in school.

Some public schools are providing more instruction time to help student achieve standards by expanding the school day or week as evident by the ELT reform initiated and supported in the state of Massachusetts. However, the typical length of a school day has remained the same for a majority of public school districts since the enactment of NCLB in 2001 (National Center for Education Statistics, 2008). As a result, a majority of public schools are faced with the challenge of trying to prepare students and meet all accountability standards mandated by NCLB within the confines of a 6-hour, 180-day school schedule.

Based on a survey conducted by the Center on Education Policy (CEP), 349 representative school districts across the nation reported an increase in the amount of time students spend in core tested subjects such as English since the enactment of NCLB (McMurrer, 2008). A random sample of 491 school districts was surveyed in which 349 schools responded from November 2006 and February 2007. District case studies were conducted for 43 schools, and more in depth work was done in 13 of these schools due to their improvement to curricula or instruction time. A majority of the elementary schools

that reported an increase in time for English also indicated a reduction in time for other subject areas by at least 75 minutes a week (McMurrer, 2008). Middle schools dedicated more instructional time toward English than any other subject with an average of 331 minutes per week devoted to English instruction in 2006-2007. Extra instructional time for tested subjects is provided by eliminating elective course offerings at the middle school level (McMurrer, 2008).

Cavanagh (2006) described the Tiger Academy that doubled the amount of time high school students in the Mount Pleasant district spent in core subjects by eliminating electives. The purpose of this program was to prepare for the Texas Assessment of Knowledge of Skills (TAKS) by eliminating electives. Cavanagh (2006) reported Mount Pleasant was not alone in initiating programs that increase time in tested subjects. However, the findings did not substantiate the effectiveness of the Tiger Academy on student performance on the TAKS.

A quantitative study by Knuchel (2010) investigated the effect of increased period lengths in tested subjects. The Ramp-Up program extended time and modified instructional strategies for 9th grade students identified as deficient in literacy skills. Extended time provided students with 90 minutes of language instruction daily. Modified instruction strategies considered comprehension, fluency, motivation, and word recognition. Data was collected from a high school near Atlanta, Georgia, from 2004 to 2008. Comparisons were made between 9th graders in the Ramp-Up program and those classified as deficient who remained in a standard literature program. Knuchel (2010) found students who received the extended periods of 90 minutes and modified

instructional strategies outperformed those who remained in standard literature classes on the End of Course Tests (EOCT).

The studies by Cavanagh and Knuchel indicated that schools are dedicating more time toward tested subjects in an effort to improve student achievement. The quantitative study by Knuchel (2010) supported the theory about the connection between time and achievement, although other influential variables involving instruction were acknowledged.

Evidence from previous studies substantiated that schools and teachers are spending more time for test preparation. According to Berliner (2009), high-stakes testing demands of NCLB have led to “Much Curriculum Left Behind or MCLB” (p. 284). Hamilton et al. (2007) conducted the Implementing Standard Based Accountability (ISBA) study which gathered data longitudinally for three years across selected states, districts, schools, and teachers. The ISBA study found schools focused more instruction time on reading and low performing students received additional amounts of time for learning opportunities (Hamilton et al., 2007).

Wantabe (2007) conducted ethnographic studies in 2001-2002 for two separate middle school classrooms located in North Carolina which utilized a traditional schedule. This qualitative study included six separate interviews with the teachers of these two classrooms and interviews with 11 other language arts teachers from other middle schools within the district. Triangulated data analysis revealed that teachers are spending more instructional time preparing students for high-stakes test. Wantabe concluded testing

demands narrow the curriculum because students have less time to appreciate and enjoy literature and participate in creative writing activities.

Based on a review of the literature, schools have been dedicating more instructional time to English as a result of NCLB, but schools have not been increasing the length of the school day. Even though schools have been dedicating more time towards tested subjects, the question is whether evidence supports that additional time amounts improve student achievement.

Trends in High-stakes Test Achievement for Middle School Students

The National Assessment of Educational Progress (NAEP) tests collected information from representative schools in the United States regarding student achievement in the English content areas of reading and writing (Lee, Grigg, and Donahue, 2007). The NAEP assessments were by definition high-stakes tests, and the NAEP provided student achievement information across the nation unlike other forms high-stakes tests independently administered by individual states (Perie, 2008). According to the Nation's Report Card for Reading in 2007, "the average 8th grade reading score was 263 in 2007 which increased 1 point from 2005 and 3 points higher than in 1992...but students only improved in one of the three reading contexts, reading for information" (Lee, Grigg, and Donahue, 2007, p. 33). This report also indicated that the percentage of 8th grade students performing at or above the basic level score of 243 increased from 73% in 2005 to 74% in 2007, but there were no changes in the number of students performing at a proficient level score (281 to 323).

There were no gains on reading achievement in 2007 for lower income students on the NAEP (Lee, Grigg, & Donahue, 2007). Eighth grade students not identified as lower income status had an average score of 271 in 2007 which was approximately 15 to 25 points higher than average scores of students classified as lower-income based on eligibility for reduced or free lunch (Lee, Grigg, & Donahue, 2007). Writing scores for 8th grade students on the NAEP increased in 2007 (Slahu-Din, Persky, & Miller, 2008). Similar to the reading, a higher percentage of 8th grade students achieved a basic level but not at the proficient or advanced levels (Slahu-Din, Persky, & Miller, 2008). Lower income students, as identified by free and reduced lunch, scored approximately 15 to 25 points lower than other 8th graders (Slahu-Din, Persky, & Miller, 2008).

NAEP achievement trends could be mapped for New Jersey 8th grade students. Reading achievement for the total 8th grade student population in New Jersey maintained an approximate scale score of 270 from 2005 until 2007 (United States Department of Education, 2008). The NAEP average reading score for New Jersey 8th graders was approximately 7 points higher than the national average of 263 (United States Department of Education, 2008). The lack of increased reading achievement demonstrated by New Jersey 8th graders from 2005 until 2007 was consistent with the lack of improvement found across the nation (United States Department of Education, 2008).

Nichols and Berliner (2008) have criticized NCLB mandates and the time spent focused on high-stakes tests because no significant gains have been shown in student achievement on high-stakes measures such as NAEP. Student scores on the NAEP have

not increased since the enactment of NCLB mandates, yet states have frequently reported improvement in student achievement on state administered high-stakes tests (Cronin, Dahlin, Adkins, & Kingsbury, 2007; Kellaghan, Greaney, & Murray 2009; Nichols & Berliner, 2008).

Student Achievement Trends on NJASK

According to the NCLB State Report (2008), the NJDOE reported 61.2 % of the total student population in the middle school grade span (Grades 6–8) were proficient, 28.2% partially proficient, and 10.1% advanced proficient on language arts literacy portions of NJASK. When the 8th grade achievement was calculated without factoring in or including 6th and 7th grade scores, 69.7% of total student population were proficient and 11.4% advanced proficient on language arts literacy in 2008 (NJDOE, 2008). When the 7th grade achievement was calculated without the other grades, 55.7% of all students were proficient and 14.7% advanced proficient on language arts literacy in 2008 (NJDOE, 2008). Based on this data, the overall 8th grade student population achieved higher than the overall 7th grade population on the NJASK language arts literacy in 2008. However, there were two separate student populations that took two separate NJASK tests. Making comparisons between two separate and different groups should be done with caution (Popham, 2001).

Middle school student achievement for NJASK seemed to follow similar trends as the NAEP in terms of socioeconomic status. Middle school students identified as economically disadvantage based on free and reduced lunch eligibility achieved 46.7% proficient, 2.4% advanced proficient, and 50.9% partially proficient or failing on

language arts literacy (NJDOE, 2008). The achievement of economically disadvantaged middle school students on the NJASK language arts literacy was comparatively lower than the total student population. The NJASK achievement trends emulated the findings indicated in the NAEP test results for this subgroup.

Scheduling Blocks of Time

The Carnegie Unit was established in the early 1900s as a system to standardize high school credits by assigning one unit of value to a subject taught one hour a day, five days a week, for one school year (DiMartino & Clarke, 2008). The traditional schedule derived from the Carnegie Unit, and block scheduling types resulted from criticisms that a class periods less than an hour were insufficient in meeting modern learner needs (McLeod, Fisher, & Hoover, 2003). A traditional schedule divides a school day into 7 or 8 periods that run approximately 50 minutes in length, while a block scheduling approach has four or five class periods that run double or approximately 90 minutes each (Murray, 2008). Block scheduling uses block of times for approximately 90 minutes, but students may not take these courses for an entire school year (Ravitch, 2007). Approximately 34.5 % of public schools in the United States reported utilizing some type of block scheduling (National Center for Educational Statistics, 2004).

Although there are different variations of block scheduling, all block schedule types alternate the amount of time dedicated for instruction by extending classes beyond the traditional 45- to 50-minute class period (Lewis, Dugan, Winokur, & Cobb, 2005). One of the most prevalent block models used by schools is the four-by-four block schedule (Harvey 2008; Lewis, Dugan, Winokur, & Cobb, 2005). The four-by-four

block format consists of approximately 90-minute periods a day, but the additional time means courses hours are completed in one semester rather than over the course of an entire school year (Queen, 2003). Another variation is the alternate day block, also known as the A/B block, which has students and teachers meet for extended time periods in assigned subject areas 2 or 3 days a week throughout the year (McLeod, Fisher, & Hoover, 2003; Queen 2003). Modified block schedule formats combine block and traditional scheduling elements by adding an additional class period of time to a specific content area on a regular basis (Queen, 2003). Multiple configurations of the modified block exist, and students take six to eight courses a year in a wide range of traditional length or block periods (Harvey, 2008; Queen, 2003). Various block scheduling configurations can influence the way instruction time is used, teaching practices, and learning outcomes (Danielson, 2002; McLeod, Fisher, & Hoover, 2003).

Block schedules provide more instruction time for teaching and learning opportunities. According to the middle school philosophy suggested by Danielson (2002), “time should be scheduled and instruction provided in long blocks, permitting teacher the maximum degree of flexibility to meet student needs” (p. 47). Time increases due to block schedules should effect student achievement based on Carroll’s theory about the relationship between time and learning. A focus of the literature review was to determine if block schedule types improved student achievement on high-stakes tests.

Block Scheduling Effects on Student Achievement

The evidence from the literature does not clearly support the effectiveness of block scheduling on student achievement (Gullat, 2008; Zepeda and Mayers, 2006).

Gullat (2008) summarized the findings of other previous studies on block-schedule types in high schools. Gullat's study used a qualitative approach, but it did not describe the criteria or process for selecting pertinent research. A conclusion of the review stated, "Regardless of the methodology utilized to determine the success of alternate scheduling, the outcome has been mixed in many areas of the country" (Gullat, 2008, p. 250).

Student achievement on high-stakes tests was one of the methods used to determine the effectiveness of block scheduling for the study by Gullat.

Zepeda and Mayers (2006) conducted an analysis for 58 empirically based studies about block schedule reforms. A 45 page matrix was developed to organize each study according to methodology, research questions, findings, and limitations. The analysis categorized those 58 quantitative and qualitative types of studies into one of the following types: teacher perception of blocks, change and block scheduling, effects of implementing blocks, effects of blocks on schedules and learning, and student perception. Based on the analysis of those pooled studies, one of the conclusions drawn about blocks and learning was that block scheduling has inconsistent effects on high-stakes test achievement (Zepeda & Mayers, 2006).

In a mixed method study by Wright (2010), findings suggested block schedules improved achievement SAT scores. However, the same study indicated more traditional scheduled students passed the Basic Skills Assessment Program (BSAP) which later was replaced by the High School Assessment Program (HSAP). Tenth grade students must be proficient in BSAP and HSAP for language, math, and writing sections to receive a diploma in South Carolina. The Wright study (2010) collected data from a single high

school which utilized a traditional schedule for 10 years (1983–1994), an A/B block schedule for 5 years (1994–1998), and a modified four-by-four block schedule for 10 years (1998–2008). Achievement comparisons were made between the modified block and traditional scheduled students. The average SAT total score of 1012 in math and verbal for modified block students (1998–2008) was 20 points higher than traditional students (1983–1994) scores of 992. A two-sample portion Z test was used to compare the BSAP/HSAP test results of traditional and block students. Students under a traditional schedule had a statistically significant higher rate of passing the BSAP/HSAP. This single study confirmed the contradictions regularly found in the evidence regarding the effects of block scheduling on high-stakes test achievement.

Some researchers have investigated the impact of school scheduling reforms on high-stakes test achievement by making comparisons between student groups taught under block schedules and traditional schedules. Lewis, Dugan, Winokur, and Cobb (2005) compared four different schools in a city located in northern Colorado. One school in the study used a traditional schedule, one school used a four-by-four block, and two schools used an alternating or A/B block schedule. The purpose of the study was to investigate student achievement using two high-stakes tests, the Level tests at 9th and American College Testing (ACT) exams at 11th grade. Lewis et al. (2005) found greater high-stakes achievement gains on reading between 9th and 11th grade for students who received the four-by-four blocks than those in the A/B block or traditional schedule.

Austin (2008) compared student high-stakes achievement on the Standards of Learning (SOLs) assessment between 65 secondary schools using four-by-four block

schedules and schools using the traditional schedules in the state of Virginia. The study used quantitative method to evaluate SOL assessment data from 1997-1998 to 2007-2008. A regression analysis was used to measure the change in student performance for each of the 12 secondary core content areas for English, math, science, and social studies. Austin (2008) found schools using the block schedule increased student achievement levels on 11 of the 12 areas of the SOLs at a more significant rate than the rest of the schools in Virginia. Students in block outperformed students in traditional schedules in the SOL assessment English areas of writing and reading (Austin, 2008).

Schott (2008) followed a group of students from metropolitan areas in Texas from 2003-2004 to 2004-2005. The group received A/B block schedules as 9th graders. The same group then had a traditional schedule in grade 10 when the school converted its schedule model. Schott (2008) found students scored significantly higher on reading portions of the Texas Assessment of Knowledge and Skills (TAKS) under the A/B block than when they were under traditional schedules. One of the subgroups analyzed in this quantitative study were low socioeconomic students. A paired sample t-test indicated a statistically significant difference on TAKS achievement for that subgroup based on traditional and block schedule types. Students classified as low socioeconomic status achieved higher test results under a block schedule (Schott, 2008).

The evidence from the reviewed studies suggested block schedule formats improve student language arts achievement levels on high-stakes tests. However, the literature also revealed evidence that block scheduling types may have little or no influence on test achievement.

Rosenburg (2005) measured the effects of traditional and four-by-four block scheduling on 9th grade student achievement on the South Carolina's High School Assessment Program (HSAP) test. The population for the study used 52 high schools, of which 31 had a four-by-four block and 21 had traditional schedules. The study analyzed achievement on the English language arts (ELA) portions of the HSAP for the overall student population and low socioeconomic subgroups based on free and reduced lunch. Rosenburg (2005) found no significant differences in ELA scores between traditional or block scheduling types for the overall student population, nor were significant differences found for the defined low socioeconomic subgroup.

Martin-Carreras (2006) compared two separate groups of students from two different urban high school districts in Florida. One group of students was taught under traditional schedules and one group of students was taught under an alternate day block schedule. Collected data used to analyze student achievement included student performance on the Florida Comprehensive Assessment Test Sunshine State Standards (FCAT-SSS) for 9th and 10th grade. ANOVA tests were used to measure differences between the two sampled groups' 9th and 10th grade test results. Based on the findings, high-stakes test achievement was not significantly different between traditional and block students.

Brown-Edwards (2007) made comparisons between traditional and four-by-four block students' performance on the Georgia High School Graduation Test (GHS GT). Data was collected from 172 high schools in Georgia in 2003-2004. Schools were categorized as urban, suburban, or rural. A MANOVA test was used to determine that

there were no significant differences between traditional and four-by-four student achievement on the GHSGT. Findings indicated there were no significant effects between type of schools (urban, suburban, and rural) and types of schedules on GHSGT results.

Further, the modified block schedule differs from the four-by-four or alternating block scheduling approach. Schools may use various configurations for scheduling that add additional class time to a specific subject area on a daily, weekly, or semester basis (Harvey 2008; Lewis, Dugan, Winokur, & Cobb, 2005; Queen, 2003).

Harvey (2008) compared the results of high-stakes achievement tests for students taught under traditional schedules, alternating block schedules, four-by-four blocks, and modified block scheduling types for 259 Massachusetts public high schools. The study used data from the Massachusetts Comprehensive Assessment System (MCAS) from 2001–2005 to make comparisons of students under different block schedule types. The study controlled for influential variables and used an analysis of covariance test (ANCOVA) to measure the effect of schedule types on test results. The study found no significant differences for 10th grade student achievement overall on the MCAS between traditional or block scheduling types. However, students taught under a modified block schedule achieved significantly higher in the language arts sections of the MCAS than students taught in the four-by-four or semester blocks. The mean score for modified block schools was two points higher (86.5) on the language sections of the MCAS than semester blocks (84.32) and alternating blocks (84.48). Harvey (2008) did not specify how these schools incorporated the modified block schedule in different content areas;

rather he classified the multiple variations of extended block periods as modified blocks. These findings did not provide specific data which would clearly support the effectiveness of modified or extended block type which allocates more time to a tested subject area.

Block Schedule and NJASK Achievement

Some studies have investigated the impact of scheduling reforms on high-stakes tests mandated by the state of New Jersey. In a study by Gipson-Bruce (2008), 4th and 6th grade NJASK scores were compared for two urban schools within the same district. One school taught in a traditional and the other a block schedule. Although no significant achievement gains or differences were found from 4th to 6th grade between block and traditional groups, socioeconomic status was a significant predictor in language arts literacy achievement. Students classified as higher socioeconomic status improved and outperformed poorer or free lunch students (Gipson-Bruce, 2008).

Falk (2009) investigated language arts achievement for 8th grade students before and after block scheduling was introduced in a suburban, more affluent (DFG: GH) school district in New Jersey. Language arts scores were significantly lower after the implementation of the block schedule for the total student population. Falk (2009) concluded the decrease resulted from the A/B block schedule reform reducing the overall amount of instructional minutes students received in English during school year. The findings by Falk (2009) suggested overall increases or decreases in instructional time could have an impact on high-stakes test achievement for English.

Qualitative Approaches: Block Schedules and Achievement

Most research about block schedules and high-stakes test achievement used quantitative more often than qualitative methodologies. Qualitative studies regularly focused on teacher perceptions about the effectiveness of block scheduling.

Crowe (2006) conducted a qualitative study about teacher perceptions of block scheduling at a high school in central New Jersey. The study collected data from teachers in a district factor group D/E high school. The participating teachers had taught before and after the sample high school implemented a block schedule reform in 1997-1998. Interview questions were designed to gather in depth data about teachers' perceptions of block scheduling. Based on findings, teachers felt "pleased" about block schedules, and "increased time allowed them to accomplish more activities thoroughly and efficiently" (Crowe, 2006, p. 66). Teachers believed block schedules helped the school improve student achievement on Scholastic Aptitude Tests (SAT).

In a mixed-method design, Todd (2008) investigated the relationship between teacher perceptions of block schedules and student achievement. Middle and high school level teachers from a school district in Atlanta completed a survey with 24 questions. Two focus groups were conducted which contained seven middle school teachers and 12 high school teachers. Todd (2008) found middle and high school teachers preferred block scheduling. Middle school teachers believed block schedules helped improve student achievement because it provided extra instruction time. In this same study by Todd (2008), quantitative methods were used to compare student achievement on high-stakes tests based on traditional and block schedules. The findings indicated block

schedules had no effect on high school student achievement on the Georgian High School Graduation Test (GHS GT), but middle school students under a traditional schedule outperformed block students on the Georgian Criterion Referenced Test or GCRT (Todd, 2008). Based on the quantitative evidence, the performance of middle school students on high-stakes tests did not support teachers' perceptions that block schedules improved student achievement as a result of additional time.

Literature Gap on Extended Block Scheduling

Although studies reviewed utilized variables which were similar to the design of this quasi-experimental study, none involved a modified block scheduling type which extended English time daily. A review of the literature did not reveal studies that substantiated the effectiveness of providing extended block of English on improving language arts NJASK results for middle school students.

Many block scheduling formats alter instructional time from 45- to 90-minute periods, but time amounts for the school year totaled the same as traditional schedules (Gullat, 2006; McLeod, Fisher, & Hoover, 2003). Gullat (2006) summarized research on block scheduling approaches implemented since the late 1990s, "more often than not, instructional time was not increased dramatically as a result of block scheduling" (p. 256). Although modified block configurations can vary in individual school settings, a common outcome of modified blocks is that students receive increased amounts of time in a chosen subject for the year (Queen, 2003).

A gap was identified in the research involving the impact of modified block scheduling reforms on high-stakes test achievement. Falk (2009) summarized the need

for additional studies involving this topic by stating “little research on the impact of block scheduling on middle school standardized test scores currently exists” (p. 1). Although Falk (2009) made reference to all block scheduling types with his statement, a review of the literature confirmed a lack of research regarding modified or extended block scheduling reforms. Studies were not found that specifically focused on the variables of extended English blocks and high-stakes test achievement at the middle school level. Although the literature review did not confirm if extended blocks affected student achievement for language arts portions of high-stakes tests, a lack of substantial evidence did support the need for a study regarding these variables.

Research Methodology

A quantitative approach was chosen for this study. “Certain types of social problems call for specific approaches...if the problem is identifying factors that influence an outcome then a quantitative approach is best” (Creswell, 2003, p. 21). A primary focus of this study was to determine if blocks schedules were a factor that influences test performance of middle school students. A quantitative approach was best for answering research questions about the relationship between block schedules and high-stakes test achievement. Previous studies about block scheduling types and high-stakes tests utilize quantitative methods more often than qualitative approaches.

A qualitative method would not have been an appropriate research method for this study. Qualitative methods are more appropriate when the variables are unknown and the purpose of the study is to gain understanding about concepts (Creswell, 2003). Block schedules, high-stakes tests, student achievement, and instruction time are not new

phenomenon or variables in the area education. Qualitative methods frequently try to gain meaning and understanding through participant perspective and researchers gathering data in a natural setting (Hatch, 2002). The purpose of this study was to investigate the effect of a schedule reform on test achievement rather than to explore the perspectives of students and teachers impacted by the extended block schedule reform.

The quasi-experimental design best describes the quantitative method of this study. This design allows comparisons to be made between groups, usually a control and experimental group (Creswell, 2003). This study investigated whether traditional scheduled student outperformed block schedule student on tests. The quasi-experimental design provided an appropriate research method for comparing student test performance based on schedule types.

Summary and Transition

Previous research has explored the educational assumption that increased amounts of instructional time will improve student achievement (Baines, 2007; Marzano, 2003). The requirements of NCLB have forced many schools to dedicate more instructional time toward subject areas that are tested (Nichols & Berliner, 2008). Research has been limited on the impacts of increasing instructional time on student achievement as measured by student performance on high-stakes tests (Cuban, 2008; Smith, Roderick, & Degener, 2005). School reforms which extended the amount instructional time students receive have shown promise in increasing high-stakes test achievement (Farbman, 2009; Massachusetts 2020, 2008). However, language arts achievement gaps have remained since NCLB initiated an era of standard-based accountability, and students from higher

socioeconomic school settings consistently outperformed students in less affluent districts on national and state versions of high-stake testing (Lee, Grigg, & Donahue, 2007; Slahudin, Persky, & Miller, 2008).

According to the National Center for Educational Statistics (2004), 34.5 % of public schools in the United States and 25.3 % of public New Jersey schools reported using some type of block scheduling. There were various types of block scheduling, and all block schedule models alternated the amount of time dedicated for instruction by extending classes beyond the traditional class period of 45 to 50 minutes (Lewis, Dugan, Winokur, & Cobb, 2005). Block scheduling formats had mixed effects on high-stake test achievement (Gullat, 2008; Zepeda & Mayers 2006), and studies frequently compared student test scores between traditional schedules and four-by-four or alternating block scheduling types. Thus, further investigation is needed on the effects of block-scheduling types on high-stakes test achievement for middle school students (Falk, 2009). Although studies have explored the impact block scheduling has had on instructional time and student achievement, no study exclusively focused on a block schedule that extended English instructional periods daily and 8th grade student performance on language arts sections of the NJASK.

Section 3 provides detailed description of the research design, questions and hypothesis, variables, participants, data collection and analysis, and threats to validity.

Section 3: Research Method

Introduction

The purpose of this quasi-experimental study was to investigate whether a significant relationship exists between extended blocks of 8th grade English and student achievement on high-stakes tests. Section 3 provides a description of the research methodology used for this study. The section discusses the research design, research questions and hypothesis, and setting and sample. A description is provided about variables, instrumentation and materials, and the role of the researcher. Subsections describe this study's data collection and analysis methods, protection of human subjects, and threats to validity.

The study used a nonequivalent, pretest–posttest design to compare two middle school groups in the same school setting. Both groups were selected from advanced placement or 8100 English sections. The one group received treatment in the form of an extended block of English in 8th grade while the other group continued to have a traditional period of 45 minutes in English. This study investigated whether the extended block had an effect on NJASK language arts literacy achievement from 7th grade to 8th grade.

Research Design

This study used a nonequivalent, pretest–posttest design to determine whether extended blocks of instructional time increased student achievement on high-stakes tests. In a nonequivalent, pretest–posttest design, the experimental and control groups take the

same pretest and posttest, but only the experimental group receives the treatment (Creswell, 2003).

Since both the control and experimental groups were selected from School C, both groups shared common influential variables, such as socioeconomic backgrounds, available resources, and educational quality (Cuban, 2008; Popham, 2003). The 8th grade students who received a traditional period of 45 minutes in advance placement English in 2008-2009 constituted the control group. The experimental group was constituted by those 8th grade students who received a treatment in the form of an extended block class or 90-minute advanced placement English period daily in 2009-2010. As 7th graders, students in both the experimental and control groups had a traditional period of 45 minutes in their English course sections. Their 7th grade English classes were also considered to be at advanced placement levels.

The language arts literacy sections of NJASK served as the pretest and posttest measure for this study. The NJASK is a high-stakes test mandated by the state of New Jersey that public school children in Grades 3–8 are required to take annually in April (NJDOE, 2007). For both the experimental and control groups, the 7th grade level NJASK provided the pretest data, and the 8th grade level NJASK provided the posttest data.

The design of this study compared two groups of participants as they moved from 7th to 8th grade to determine whether extended time treatments significantly affected NJASK achievement. The design is illustrated in Table 1. “O represents a measurement recorded on an instrument...X represents as exposure of a group to an experimental

variable or event, the effects of which are to be measured” (Creswell, 2003, p. 167). The 7th grade NJASK test data was the pretest measurement (O), and one group was exposed to the extended block of English (X). The 8th grade NJASK test data provided a posttest measurement (O), and comparisons of the 7th and 8th grade NJASK test results were made between the experimental and control groups.

Table 1

Research Design

Group	Pretest	Treatment	Posttest
Group A 2010 class (Experimental)	O NJASK 2009 (Level 7)	X Extended block (Grade 8 English)	O NJASK 2010 (Level 8)
Group B 2009 class (Control)	O NJASK 2008 (Level 7)	(Traditional English)	O NJASK 2009 (Level 8)

The rationale for the chosen design of this study was to determine if a relationship exists between specific variables (schedule type and NJASK achievement) by collecting information with predetermined instruments that yield statistical data (Creswell, 2003). The study’s design provided information about the effects of the extended time blocks on high-stakes test achievement. The design enabled me to isolate the effects of the treatment on student test achievement and account for systematic differences which potentially influence test results.

Research Questions and Hypotheses

The guiding research question for the study was: What effect does extended blocks of time in English have on 8th grade student achievement for the language arts portion of NJASK compared to high stakes test results under traditional English schedules? The focus of the research was on three specific research questions and their hypotheses.

1. What effects did traditional English courses have on 8th grade student achievement on language arts literacy portions of the NJASK in the 2008-2009 school year compared with their 7th grade test results from the 2007-2008 school year?

H_0^1 : The 8th grade students enrolled in traditional English course sections (8100) had no significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule.

H_1^1 : The 8th grade students enrolled in traditional English course sections (8100) had a significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule.

2. What effects did 8th grade students enrolled in extended block English courses have on achievement for the language arts literacy portions of the NJASK in the 2009-2010 school year compared to their 7th grade test results in the 2008-2009 school year?

H_0^2 : The 8th grade students enrolled in extended English course sections (8100) had no significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule.

H_1^2 : The 8th grade students enrolled in extended English course sections (8100) had a significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule.

3. What were the differences on literacy achievement for language arts portions of the NJASK between 8th grade students enrolled in traditional English periods in 2008-2009 and 8th grade students in extended blocks in the 2009-2010 school year?

H_0^3 : The 8th grade students enrolled in extended block English courses in 2009-2010 school year had no significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009.

H_1^3 : The 8th grade students enrolled in extended block English courses in 2009-2010 school year have significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009.

Setting and Sample

The population selected for this study included 7th and 8th grade students from School C. A purposeful sampling method was used to establish a control group and an experimental group. The control group was selected from the 2008-2009 class in School C which had a total enrollment of 320 students (NJDOE, 2009). The experimental group was selected from the 2009-2010 class in School C which had a total student population of 336 students (NJDOE, 2009). Due to enrollment changes throughout the year, these population counts can slightly vary from the actual total number of students taking the NJASK test in the spring of a specified year. For the School C's 2008-2009 class, 333 7th grade students were tested on the language arts literacy sections of NJASK in 2007-2008, and this same student group had 330 tested in 2008-2009 as 8th graders (NJDOE, 2009). For School C's 2009-2010 class, 344 7th graders were tested on the language arts literacy sections of the NJASK in 2008-2009 (NJDOE, 2009). Available public data did not reveal the total number students for this same class or group that had participated as 8th graders on the language arts literacy sections of the NJASK in 2009-2010.

Purposeful sampling was used to select participants for this study from the overall student population based on English course sections offered by School C. The study used only the students enrolled in the advanced placement or 8100 English courses sections because these sections changed from a traditional periods of English in 2008-2009 to extended block periods of English in 2009-2010. Participants for the control group included 42 8th grade students enrolled in the 2008-2009 traditional 8100 English

classes. Participants in the experimental group included 49 8th grade students in 2009-2010 enrolled in 8100 English classes which were converted to extended blocks.

Unlike the 8100 English sections, the 8200 and 8300 courses were not converted from traditional to extended block schedules in 2009-2010. Students enrolled in the 8200 and 8300 English courses would have received blocks of time in both 2008-2009 and 2009-2010 school years. The 8200 and 8300 courses were offered as extended block periods prior to the time scope for this study. Sampling from 8200 and 8300 groups would have failed to provide any comparative data between schedule types. The purposeful sampling from only 8100 English courses helped to isolate the effects of the treatment or extended block schedule for English.

Participants in the 8100 sections were considered the highest achieving students in School C. The remaining population of School C was excluded for the purposes of this research. A majority of the students excluded from the study were those enrolled 8200 or 8300 English offered by School C. The 8200 English sections were dedicated for students who do not perform as well as advance placement students, but their academic achievement is still considered above average, while 8300 English sections were for those with average and lower academic achievement. However, the students excluded from the study were based on schedule reforms, not academic ability or classification. Specifically, students excluded from this study were those classified or enrolled in special education courses. Students in special education classes had altered instruction and time allowed for instruction in English based on individual education plans (IEPs). As a result, the amount of time dedicated to English instruction varied on

an individual basis. Although 47 students from the special education group participated in the 2008-2009 NJASK, they were not included in this study because the variations of time spent in English.

The rationale for using purposeful sampling for this study was that all participants share the common school experiences. All participants were sampled from the same school, School C, which helped to eliminate risks when sampling from different school settings (Gravetter & Wallnau, 2008). Since all these participants were selected from the 8100 English course sections, students were more likely to have common educational experiences, available resources, teacher quality, administrative leadership, and socioeconomic backgrounds (Cuban, 2008; Popham, 2001). Both traditional and extended block English courses must adhere to the same curriculum standards in accordance with the NJCCCS for English. Differences in school settings, curriculum, and teacher instruction in are influential variables that may impact student achievement on high-stakes tests (Armstrong, 2006; Grissmer, 2001; Popham 2001). However, selecting students from a single school (School C) and English course levels (8100) ensured these types of influential variables (school settings, curriculum, and teacher instruction) were similar for all participants. The major difference between the experimental group and control group was the amount of time students received in advance placement English as 8th graders. The purposeful sampling method enabled this study to isolate and determine the effects of the treatment on NJASK achievement.

Student enrollment or placement in a specific English section was determined by criteria set forth by School C rather than by the design of the researcher. Even though

School C has no officially adopted policy, the guidance department uses student grades, teacher recommendations, and parent feedback when scheduling courses. Student performance on the NJASK is a consideration when placing students in the 8100 English sections, but these test results are not a determining factor. Students in 8100 English sections usually achieve above average on the NJASK and outperform those placed in 8200 and 8300 sections. Previous academic performance overall is considered when guidance counselors, students, and parents decide an appropriate English course placement. I did not actively recruit participants for the purposes of this study.

Variables

The variables identified for this study were schedule types (independent variables) and student achievement on language arts sections of the NJASK (dependent variable). Comparisons between described traditional and extended block student groups helped determine the effectiveness of providing 8th graders additional instructional time in English.

The traditional and extended English courses sections may be considered quasi-independent variables because they are not being manipulated by the researcher but they are being used to define groups of scores (Graveteer & Wallnau, 2008). Traditional periods were measured or defined by 45 minutes of instruction time in English daily. Extended block periods were measured or defined by 90 minutes of instruction time in English daily.

The dependent variable of the study was the NJASK language arts literacy test data. All 7th and 8th graders enrolled in New Jersey public schools are required to take

this high-stakes test annually in April (NJDOE, 2007). In accordance with state regulations, all NJASK tests are submitted and scored through the NJDOE. The writing tasks are scored using a 0–6 point rubric, and the open-ended responses for the reading passages use a 0–4 point rubric (NJDOE, 2009). After students take tests in the spring, individual schools such as School C usually have test results by September of the following year.

The dependent variable for calculating student scores or proficiency levels on the language arts literacy sections of the NJASK was not by researcher design. The NJASK uses a 0 to 300-point scale for determining passing and failing on the language art literacy section. Based on state design, any student who scores 200 or below is considered partially proficient or failing (NJDOE, 2009). Students who score in the range of 200 to 249 are considered proficient or passing, and those who have a 250 to 300 are advanced proficient. This study used those ranges of numbers or scores when conducting statistical procedures.

Instrumentation and Materials

The primary data source for this study was student scores from language arts literacy sections of the NJASK. The NJDOE contracts Measure Incorporated (MI) to oversee all aspects of the NJASK testing program. The language arts literacy section measures student mastery of grade level core curriculum content standards (CCCS) established by the NJDOE for English at the appropriate grade or level (NJDOE, 2008). The language arts literacy portion of the NJASK consists of reading passages, multiple-choice items, and writing tasks (NJDOE, 2009). The NJASK is a timed test which allows

195 minutes to complete the language arts literacy portion of the test over a two day period.

Middle school students are tested on writing and reading in the language arts literacy portion of the NJASK. The test design for Grades 6–8 contains one persuasive writing prompt and either a speculative or explanatory writing prompt for a total of two writing tasks (NJDOE, 2009). The persuasive writing elicits a student’s point of view on a given topic, the speculative task provides a brief story or scenario as a spring board for a student story, and the explanatory prompt provides a familiar quote or adage for students to create an original essay. There are four reading passages that contain literature selections and informational types of reading for Grades 6–8. Students have to respond to 36 multiple-choice items and four open-ended questions regarding the four reading passages.

Administration of the NJASK is guided by the state to ensure all students have an equal opportunity to succeed regardless of the location of the test (NJDOE, 2008). The state has established test security procedures, and school districts must treat the NJASK booklets as secure materials that students only view on appropriate test day designated by the state. School districts receive testing materials about two weeks prior to the test administration annually. School districts must guarantee NJASK test materials are kept in secure locations, properly accounted for when distributed and returned for testing purposes, and any type of discrepancies filed with the state. The state provides necessary forms for reporting any issues and accounting for all testing materials, and the state handles the distribution and pick up of all test booklets and answer keys. The site test

coordinator for the school is responsible for the overall testing procedures, and they must make sure proctors and test examiners receive training and abide all testing procedures. New Jersey public schools face financial penalties or withdraw of state funding and teachers face tenure charges for not adhering to the test security measures.

Reliability and Validity

New Jersey is required by federal law to ensure the reliability and validity of all instruments measuring student achievement (NJDOE, 2009). The NJASK 2008 Technical Report for Grades 5–8 summarizes the reliability and validity of the NJASK test scores.

Guiding theory and scoring methods ensure the reliability of the NJASK scores. The design of the NJASK relies on the assumptions of Classic Test Theory (CTT) which builds on the notion of an error free or true measurement score (NJDOE, 2009).

Any observed measurement, such as test score X , is defined as a composite of true score T and its associated error ($X = T + \text{Error}$)...Estimating the size of the measurement error in associated with the true score is key to estimating the reliability. (NJDOE, 2009, p. 117)

Multiple-choice items are scored electronically, and testing procedures minimize errors due to unwanted marks on scanned response sheets (NJDOE, 2009). All writing prompts are scored by two scorers using established rubrics for scoring the open-ended responses, and scorers are trained and tested for consistency by MI to minimize errors due to differences among raters. Coefficient alphas are used to measure internal consistency of student raw and true scores for all NJASK test questions (NJDOE, 2009).

The reliability of specific open-ended and closed-ended test questions is assessed using a stratified Cronbach's alpha (NJDOE, 2009).

Content and curricular validity, construct validity, and criterion-related validity issues related to the NJASK are detailed in the NJASK 2009 Technical Report.

“Adequate representation of the content domains defined in the CCCS is assured through the use of a test blue print and a responsible test construction process” (NJDOE, 2009, p. 143). The NJASK scores are scaled by raw score points, Item Response Theory (IRT), and performance standard level based on scale score cuts to ensure construct validity (NJDOE, 2009). The validity of NJASK test score data is associated with the technical quality of the test and the described testing procedures implemented by the state (NJDOE, 2009).

Data Collection

Data for this study was collected from School C. Methods for collecting the data were retrospective. The overall NJASK test results for a specific school district are available public information. All data was obtained from available district records which contribute in part to annual, required state reporting and documentation for School C. However, the state report system purposely maintains the confidentiality of individual student scores. Since individual student scores are considered confidential, access to this type of student information is safeguarded through the guidance department of School C.

After receipt of the necessary approval to conduct research from the IRB, I obtained copies of student schedules for purposes of identifying participants and defining groups. School C and the guidance department maintain records and schedules using a

student data system called realtime. The realtime software or program was used during the data collection process to determine student placement in a specific English course. I identified those students enrolled in the 8100 courses during the 2008-2009 and 2009-2010 school years in order to assign participants to the control or experimental group.

Once these groups were identified, I cross referenced the names of participants with their respective NJASK test results. For the control group, I collected language arts NJASK data from 7th grade (2007-2008) and 8th grade (2008-2009). For the experimental group, I collected language arts NJASK data from 7th grade (2008-2009) and 8th grade (2009-2010).

The data collection process required accessing student records regarding class schedules and NJASK test results. The 8330-Pupil Records policy (2005) provides a detailed guide for acceptable access of student records in School C. The intent of district's Pupil Records policy is to protect the privacy rights of students. School C's policy on pupil records adheres with New Jersey Administrative Code 6A:32-7.1 which requires school districts to establish written procedures to assure security of all records (New Jersey Administrative Code, 2010). The data collection approaches described in this study were permitted under the guidelines which allow school personnel to access student records in the educational interest of the student. However, I obtained necessary permission prior to collecting data as indicated in the Data Use Agreement. I assigned codes to the students as a precaution. Participants were referenced by code to protect their identities during the data collection and analysis processes of this study. More

detailed discussion about the protection of participants during this study is described in the Measure of Ethical Protection subsection.

Data Analysis

This study used the SPSS Career Starter Program for Windows, version 16.0, which provides a comprehensive data analysis package for research (Kirkpatrick & Feeney, 2007). The SPSS program allowed me to perform statistical procedures that compared sets of scores. The SPSS program provided frequency statistics and descriptive statistics about collected data. The SPSS program was used to test hypotheses and perform the single-factor repeated-measures analysis of variance (ANOVA) tests. The alpha level for this research was .05, $\alpha = .05$. The SPSS program provided statistical data that was used to test hypotheses and answer research questions about the relationship between extended time blocks and high-stakes test achievement.

The single-factor repeated-measures ANOVA tests can be used to evaluate mean differences when the same group participates in every treatment (Gravetter & Wallnau, 2008), and this study collected pretest and posttest data from the same participant groups. A single-factor repeated-measure ANOVA was used to test each of the hypotheses. The SPSS software was able to perform this statistical test using the one-way within-subjects ANOVA program feature. The within-subject name was labeled extended time, and there were 2 number of levels for the ANOVA tests for each hypothesis tested.

I chose to use ANOVA test based on the rationale that these statistical tests could determine the mean differences between 7th grade scores on the NJASK and eighth-grade scores on the NJASK (Gravetter & Wallnau, 2008). The repeated-measures

ANOVA removes individual differences of drawn sample to determine if differences between treatments are significantly greater than by chance alone (Gravetter & Wallnau, 2008). Participants in the experimental group received an extended block treatment, and the single-factor repeated-measures ANOVA test helped determine if this schedule reform had a significant influence on NJASK scores. However, participants in the control group did not receive a treatment. The repeated measures ANOVA tests helped determine if remaining in traditional English periods had a significant effect on NJASK scores.

Comparisons were made in this study between participant groups using information from ANOVA tests, frequency charts, and descriptive statistics. If the experimental group's 8th grade scores had increased from previous 7th grade levels but the control group's scores had remained constant or decreased, then the treatment may have been considered effective. If the control group's scores had increased but the experimental group remained constant or decreased, then the treatment may not have been considered effective. If both group's scores had remained constant by having equal increases or decreases, then the effects of the treatment would have been questionable.

Measures of Ethical Protection

I am an administrator in the same school district as School C. I obtained necessary signed approval from the superintendent of School C. Prior to collecting any data, I utilized the Data Use Agreement template available through Walden University. In accordance with HIPPA and FERPA regulations, this document clearly describes

regulations for the data recipient when collecting limited data sets (LDS). I was the only one who received and handled collected data during the study.

The independent and dependent variables were entirely by school and state design. I had no input on the schedule reform adopted by School C. I had no influence on student scheduling or placement in particular English sections in School C. Student participation in the NJASK is mandated by the state. I had no control over the testing requirements and procedures of the NJASK. All security procedures involved with the administration of the NJASK must be strictly followed by School C in accordance with state regulations. As a school administrator employed in School C, I understood accessing student records must be in accordance with school policies and state guidelines.

I had no vested interest in proving the effectiveness of block scheduling. I believed the study would have value regardless of whether the null hypotheses were accepted or rejected. The information from the study was intended to yield data that may be meaningful in considering schedule reforms. My status as a professional or student would not be impacted by study findings that substantiate or disprove extended blocks of time have a significant effect on student performance on the NJASK.

Human subjects were protected during the study by referring to the data collection site as School C. Precautions were taken to protect the identification of participants, and I removed student names or other identifiers through the data collection processes. Participants and their individual test results were referenced strictly by a letter code only identifiable by me.

A majority of the collected data was available in an electronic format. Collected data was kept secured during analysis process of the study. The realtime system has a security system, and access to student records is protected by assigned passwords. The data analysis procedures used the Excel program and the SPSS Career Starter Program 16.0 for Windows. Access to files and collected data was protected by my personalized number and letter passwords. All collected electronic information will be deleted upon completion of the study in accordance with established policies and procedures.

The NJASK test data was available in electronic formats, and individual test results were restricted. The state of New Jersey has established safeguards to protect individual student identities when releasing NJASK test result information (NJDOE, 2009). Student test results on the NJASK are forwarded to the site test coordinators in each school district in the state usually in the summer. In accordance with local and state regulations that protect pupil records, the district test coordinator must ensure that test results are handled by only authorized school personnel, and test results must be kept in appropriate, secure files. The NJASK data used for school and state reporting uses trends in achievement for student or school groupings, but identifying individual students' results from available public reports is not feasible due to security safeguards associated with NJASK tests (NJDOE, 2009).

Threats to Validity

Diffusion occurs when participants from the experimental and control group talk to each other, and this type of internal validity threat can cause problems when applying treatments (Creswell, 2003). The contact between the two groups in this study was

minimal due to the year each class was enrolled in School C. However, contact between the groups would have had no impact on the treatment regardless. Communication between participants from control or experimental groups would have had no influence on the extended block treatments which involve increasing time amounts for instruction in English.

Maturation of participants is an internal validity threat (Creswell, 2003).

However, this study controlled for the threat by collecting test data for student groups as they moved from 7th to 8th grade. The study measured differences between 7th and 8th grade NJASK scores for both traditional and extended groups.

The NJASK provided a valid and reliable instrument for collecting data about high-stakes test achievement of middle school students. The NJASK test data was collected from 7th and 8th grade. Although a different NJASK tests were provided for each grade, NJASK testing processes and test designs are intentionally similar each year. Versions of the NJASK must be aligned because test results are used to make comparisons between student and school results and determine AYP in accordance with NCLB (NJDOE, 2009).

Summary

This quasi-experimental study utilized a nonequivalent pretest posttest design and quantitative methods to determine if a significant relationship exists between extended blocks of instructional time and student achievement on high-stakes tests. The study answered research questions by testing hypotheses. Each of the hypotheses tested in the

study focused on the extended blocks of time in English (treatment) and student achievement on the NJASK (dependent variable).

Section 4 provides a detailed description of the study's results.

Section 4: Results

The purpose of this quasi-experimental study was to investigate whether a significant relationship exists between extended blocks of 8th grade English and student achievement on high-stakes tests. Section 4 provides the results of data collection and includes (a) introduction, (b) findings, (c) data analysis, and (d) conclusion.

Introduction

This quasi-experimental study from a single middle school setting, School C, used a nonequivalent, pretest-posttest design to collect data from the control group and the experimental group. The treatment was based on a school reform during the 2009-2010 school year which extended 8th grade English from 45- to 90-minute periods daily for the experimental group. The test results on language arts literacy of the NJASK were used as a pretest and posttest measurement for both the control and experimental groups.

All 7th and 8th grade students are required to take the language art literacy test sections of NJASK which assesses student skills and knowledge of NJCCCS for English (NJDOE, 2009). The NJASK tests differ for each grade every year, but the design and administration processes mandated by the state of New Jersey ensure that the NJASK provides a valid and reliable measurement from year to year (NJDOE, 2008). Student test results on the NJASK are used to measure annual progress in mastering the described NJCCCS for English on a school-wide and individual student basis (NJDOE, 2008).

Participants in this study were enrolled advance placement or 8100 English course sections and had completed the NJASK as 7th and 8th graders. Data was collected from the realtime student record system. Students enrolled in the advance placement English

sections were identified and then coded to protect their identities, which were then used to collect 7th and 8th grade NJASK test results.

The control group consisted of 43 participants. They had 45-minute English periods with a single teacher (Ms. A) in 7th grade during the 2007-2008 school year. As 8th graders during the 2008-2009 school year, they continued these 45-minute English periods with a single teacher (Ms. B). The experimental group, on the other hand, consisted of 48 participants. The experimental students had 45-minute English periods in 7th grade during the 2008-2009 school year, with the same teacher as the control group (Ms. A). As 8th graders during the 2009-2010 school year, they received extended blocks or 90-minute periods of English daily with a single teacher (Ms. C).

Three students were eliminated from the control group because the necessary pretest or NJASK results from 7th grade in 2007-2008 were not available. One student was eliminated from the experimental group because of missing pretest information necessary for the purposes of this study.

All pretest and posttest test achievement data collected from School C was scored by the test corporation (Measurement Incorporated) which had been contracted with the NJDOE. The language art literacy portion of the NJASK is scored on a 0 to 300 scale (New Jersey Department of Education, 2009). Students who score 0–199 are considered partially proficient and fail. Those who score 200–249 are proficient and pass, while those score 250–300 are considered advanced proficient (NJDOE, 2009). The data analysis methods in Section 4 used those ranges or scales for reporting student achievement.

The guiding research question in this study was: What effect does extended blocks of time in English have on 8th grade student achievement for the language arts portion of NJASK compared to high-stakes test results under traditional English schedules?

The focus of the research was on the three subsequent research questions and their hypothesis:

1. What effects did traditional English courses have on 8th grade student achievement on language arts literacy portions of the NJASK in the 2008-2009 school year compared with their 7th grade test results from the 2007-2008 school year?

H_0^1 : The 8th grade students enrolled in traditional English course sections (8100) had no significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule.

H_1^1 : The 8th grade students enrolled in traditional English course sections (8100) had a significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule.

2. What effects did 8th grade students enrolled in extended block English courses have on achievement for the language arts literacy portions of the NJASK in the 2009-2010 school year compared to their 7th grade test results in the 2008-2009 school year?

H_0^2 : The 8th grade students enrolled in extended English course sections (8100) had no significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule.

H_1^2 : The 8th grade students enrolled in extended English course sections (8100) had a significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule.

3. What were the differences on literacy achievement for language arts portions of the NJASK between 8th grade students enrolled in traditional English periods in 2008-2009 and 8th grade students in extended blocks in the 2009-2010 school year?

H_0^3 : The 8th grade students enrolled in extended block English courses in 2009-2010 school year had no significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009.

H_1^3 : The 8th grade students enrolled in extended block English courses in 2009-2010 school year have significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009.

Findings

The SPSS Career Starter Program for Windows, version 16.0, software program was used to perform statistical analysis on collected data. Participants' pretest and posttest NJASK scores were analyzed using descriptive statistics. Frequency statistics were used to describe the central tendency included the mean, median, mode, and sum of collected NJASK data. Additional descriptive statistics included dispersions which provided the standard deviation, range, minimum and maximum of the collected NJASK data. Hypotheses were tested using the single-factor repeated-measures analysis of Variance (ANOVA). The SPSS program was used to perform one-way ANOVA for comparing means of collected NJASK data for different described groups. The ANOVA tests used an alpha level of .05, ($\alpha = .05$). The null hypothesis would be rejected if the Sig. value was more than .05 acceptable levels.

The correlation coefficient, r^2 , measures the percentage of variance accounted by the effects of the treatment (Graveteer & Wallnau, 2008). The measure of effect size can only be reported using the SPSS program for two or more treatment variables (Kirkpatrick & Feeney, 2007). Since this study used a single-factor approach, the measure effect size had to be computed separately from the SPSS program. The measure of effect size equals the sum of squares (SS) for the between groups divided by the SS of the total, or $r^2 = \text{SS between} / \text{SS total}$ (Graveteer & Wallnau, 2008). Similar to other published research results, the study used n^2 rather r^2 in reporting the measure of effect size for variance (Graveteer & Wallnau, 2008).

Findings for Research Question 1

Collected NJASK data was analyzed for the control group to answer Research Question 1: What effects did traditional English courses have on 8th grade student achievement on language arts literacy portions of the NJASK in the 2008-2009 school year compared with their 7th grade test results from the 2007-2008 school year?

Table 2

Control Group: Pretest-Posttest Results

	NJASK 7 2007-2008	NJASK 8 2008-2009
Number of participants	43	43
Mean	255.0930	240.7907
Std. error of mean	2.63775	1.83378
Median	254.0000	240.0000
Mode	254.00	240.00
Std. deviation	17.29687	12.02489
Range	84.00	59.00
Minimum	216.00	212.00
Maximum	300.00	271.00

Table 2 provides descriptive statistics that compare the control group's 7th grade language arts literacy scores on the NJASK to their 8th grade test results. Participants in the control group had a mean score of 255.09 on the NJASK 7 (2007-2008). The same students had a mean score of 240.79 on the NJASK 8 (2008-2009). The mean score on the language arts portions NJASK decreased 14.3 points from 7th grade to 8th grade. The standard deviation was 17.29 points for the NJASK 7 and 12.02 points for the NJASK 8. The range from minimum to maximum test scores was 84 points for the NJASK 7 and 59 points for the NJASK 8. The standard error (std. error of mean) was

2.64 for the NJASK 7 and 1.83 for the NJASK 8. These descriptive statistics suggested there was greater variation in control group's NJASK 7 test scores than NJASK 8 test results. The control group's scores were lower in but more stable in 8th grade.

Hypothesis testing for the first guiding research question used a single-factor, independent-measures ANOVA test. The SPSS program was used to perform one-way ANOVA tests that compared the control group's means for the NJASK 7 (2007-2008) to the NJASK 8 (2008-2009). The results are indicated in Table 3.

Table 3

ANOVA Control Group: Comparison of NJASK 7 to NJASK 8 Scores

	Sum of squares	<i>df</i>	Mean square	<i>F</i>	<i>Sig.</i>
Between groups	4397.965	1	4397.965	19.820	.000
Within groups	18638.744	84	221.890		
Total	23036.709	85			

H_0^1 : The 8th grade students enrolled in traditional English course sections (8100) had no significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule.

H_1^1 : The 8th grade students enrolled in traditional English course sections (8100) had a significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule.

The null hypothesis (H_0^1) was rejected because the F -ratio was 19.8 and the significance level ($Sig.$) was less than the required .05 alpha level. The measure of effect size was 19%. The ANOVA revealed a statistically significant difference between the NJASK 7 scores (2007-2008) compared to the NJASK 8 scores (2008-2009) for the control group; $F(1, 84) = 19.82, p < .05, n^2 = .190$.

The alternate hypothesis (H_1^1) stated 8th graders enrolled in traditional English course sections (8100) have a significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their seventh-grade scores in 2007-2008 school year under a traditional schedule. However, the statistical differences between scores indicated a significant decrease on NJASK test achievement in 8th grade from 7th grade for the control group. Therefore, the alternate hypothesis was not accepted even though the null hypothesis was rejected. There was a significant difference between 7th and 8th grade years for the traditional group, but it was a statistically significant lower score.

Findings for Research Question 2

Collected NJASK data was analyzed for the experimental group to answer Research Question 2: What effects did 8th grade students enrolled in extended block English courses have on achievement for the language arts literacy portions of the NJASK in the 2009-2010 school year compared to their 7th grade test results in the 2008-2009 school year?

Table 4

Experimental Group: Pretest-Posttest Results

	NJASK 7 2008-2009	NJASK 8 2009-2010
Number of participants	48	48
Mean	252.9792	252.1667
Std. error of mean	2.44904	2.35301
Median	255.0000	252.0000
Mode	255.00	250.00
Std. deviation	16.96742	16.30211
Range	76.00	75.00
Minimum	215.00	212.00
Maximum	291.00	287.00
Sum	12143.00	12104.00

Table 4 provides descriptive statistics that compares the experimental group's 7th grade language arts literacy scores on NJASK to their 8th grade test results.

Participants in the experimental group had a mean score of 252.97 on the NJASK 7 (2008-2009). The same students had a mean score of 252.16 on the NJASK 8 (2009-2010). The mean score on the language arts portions NJASK decreased less than a point (0.81) from 7th grade to 8th grade. The standard deviation was 16.96 points for the NJASK 7 and 16.30 points for the NJASK 8. The range from minimum to maximum test scores was 76 points for the NJASK 7 and 75 points for the NJASK 8. The standard error (std. error of mean) was 2.44 for the NJASK 7 and 2.35 for the NJASK 8. These descriptive statistics suggested the experimental group's tests results were stable from 7th to 8th grade.

Hypothesis testing for the second guiding research question used a single-factor, independent-measures ANOVA test. The SPSS program was used to perform one-way ANOVA tests that compared the experimental group's means for the NJASK 7 (2008-2009) to the NJASK 8 (2009-2010). The results are indicated in Table 5.

Table 5

ANOVA Experimental Group: Comparison of NJASK 7 to NJASK 8 Scores

	Sum of squares	Df	Mean square	F	Sig.
Between groups	15.844	1	15.844	.057	.811
Within groups	26021.646	94	276.826		
Total	26037.490	95			

H_0^2 : The 8th grade students enrolled in extended English course sections (8100) had no significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule.

H_1^2 : The 8th grade students enrolled in extended English course sections (8100) had a significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule.

Fail to reject the null hypothesis (H_0^2) on the basis that the F -ratio was .057 and the significance level ($Sig.$) of .811 was more than the acceptable .05 alpha level. The measure of effect size was 0%. The ANOVA revealed no significant difference between the NJASK 7 scores (2008-2009) compared to the NJASK 8 scores (2009-2010) for the

experimental group; $F(1, 94) = .057, p < .05, n^2 = .000$. Eighth grade students enrolled in extended English course sections (8100) had no significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule. Students in the extended block schedule showed no significant increase or decrease in achievement from 7th to 8th grade, but the average scores on the NJASK remained above 250 or advanced proficient.

Findings for Research Question 3

Collected NJASK 8 data of both the control and experimental group was analyzed to answer Research Question 3: What were the differences on literacy achievement for language arts portions of the NJASK between 8th grade students enrolled in traditional English periods in 2008-2009 compared with 8th grade students in extended blocks in the 2009-2010 school year?

Table 6

Comparison of Control Group to Experimental on the Posttest

	Control NJASK 8 2008-2009	Experimental NJASK 8 2009-2010
Number of participants	43	48
Mean	240.7907	252.1667
Std. error of mean	1.83378	2.35301
Median	240.0000	252.0000
Mode	240.00	250.00
Std. deviation	12.02489	16.30211
Range	59.00	75.00
Minimum	212.00	212.00

Maximum	271.00	287.00
Sum	10354.00	12104.00

Table 6 provides descriptive statistics that compares the control group's 8th grade language arts literacy scores on the NJASK to the experimental group's 8th grade test results. Participants in the control group had a mean score of 240.79 on the NJASK 8 (2008-2009). Participants in the experimental group had a mean score of 252.16 on the NJASK 8 (2009-2010). The control group's mean score on the language arts portions of the NJASK was 11.37 points less than the experimental group's average. The standard deviation was 12.02 points for the control and 16.30 points for the experimental group. The range from minimum to maximum test scores was 59 points for the control and 75 points for the experimental group. The standard error (Std. Error of Mean) was 1.83 for the control and 2.35 for the experimental. These descriptive statistics suggested the control group's NJASK 8 scores were lower but had less variance than the experimental group's NJASK 8 test results.

Hypothesis testing for the third guiding research question used a single-factor, independent-measures ANOVA test. The SPSS program was used to perform one-way ANOVA tests that compared the control group's means for the NJASK 8 (2008-2009) to the experimental group's means for the NJASK 8 (2009-2010). The results are indicated in Table 7.

Table 7

ANOVA Comparison of Control to Experimental Group's NJASK 8 Scores

	Sum of squares	Df	Mean Square	F	Sig.
Between groups	2935.250	1	2935.250	14.072	.000
Within groups	18563.783	89	208.582		
Total	21499.033	90			

H_0^3 : The 8th grade students enrolled in extended block English courses in 2009-2010 school year had no significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009.

H_1^3 : The 8th grade students enrolled in extended block English courses in 2009-2010 school year have significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009.

The null hypothesis (H_0^3) was rejected on the basis that the F -ratio was 14.07 and the significance level ($Sig.$) was less than the required .05 alpha level. The measure of effect size was 13.6%. The ANOVA revealed a statistically significant difference between the control group's NJASK 8 (2008-2009) scores compared to the experimental group's NJASK 8 (2009-2010) scores; $F(1, 89) = 14.07, p < .05, n^2 = .136$. The alternative hypothesis (H_1^3) was accepted. Eighth grade students enrolled in extended block English courses in 2009-2010 school year had significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students

enrolled traditional English courses in 2008-2009. However, there was not a statistically significant difference between the traditional and experimental group's pretest (NJASK 7) scores.

Additional Comparisons of Student Performance on the NJASK

The mean scores on the language arts literacy portions of the NJASK decreased from 7th to 8th grade for both the control and experimental group in School C by 14.3 and 0.81 points respectively. Additional data was analyzed to determine if other school districts had similar achievement trends for their general education population. The additional analysis purposely focused on general education students because participants for this study were limited to general education students enrolled in English 8100 courses.

The data collected for the additional analysis used test results available to the public through the NJDOE. The NJASK Assessment Reports for each school year indicated the test performance of all student demographic groups which included general education, special education, limited English proficient, gender, ethnicity, economic status, and migrant status (NJDOE, 2010). The reports made available for the public provided information about student test results on a statewide basis and by socioeconomic classification or district factor groupings. However, available test results would not indicate individual student scores based on schedule type or placement in specific English levels or sections.

The rationale for the additional analysis was to compare the participant test results to similar student groups for the same testing years, 2007–2010. All data for this study

was collected from a single school setting (School C) which had been classified as a district factor group B (DFG-B) on a socioeconomic scale that ranges from (A) poorest to (J) wealthiest (NJDOE, 2009). The data analysis of NJASK test results for various demographic groups other than general education (GE) students was excluded for the purposes of this study. Comparisons were made between participants from School C to the GE students in the state and in the school districts classified as DFG-B. Data trends are indicated in Table 8.

Table 8

General Education (GE) NJASK Language Arts Literacy Mean Comparisons: School C, State, and DFG-B

GE students	NJASK 7 2007-2008	NJASK 8 2008-2009	NJASK 7 2008-2009	NJASK 8 2009-2010
School C control	255.0930	240.7907	Not applicable	Not applicable
School C experimental	Not applicable	Not applicable	252.9792	252.1667
Statewide	222.4	225.7	222.1	229.7
DFG-B	212.4	217.7	212.3	220.8

The control group had a mean of 255.09 on the NJASK 7 (2007-2008) compared to the state average of 222.4 and the DFG-B average of 212.4. The control group's mean on the NJASK 7 (2007-2008) was 32.69 points higher than GE students statewide and 42.69 points higher than DFG-B school districts. The control group had a mean of 240.79 on the NJASK 8 (2008-2009) compared to the state average of 225.7 and the DFG-B average of 217.7. The control group's mean on the NJASK (2008-2009) was

15.09 points higher than GE students statewide and 23.09 points higher than DFG-B school districts.

The experimental group had a mean of 252.97 on the NJASK 7 (2008-2009) compared to the state average of 222.1 and the DFG-B average of 212.3. The experimental group's mean on the NJASK 7 (2008-2009) was 30.87 higher than GE students statewide and 40.67 points higher than DFG-B school districts. The experimental group had a mean of 252.16 on the NJASK 8 (2009-2010) compared to state average of 229.7 and 220.8 for DFG-B schools. The experimental group's mean on the NJASK 8 (2009-2010) was 22.46 points higher than GE students statewide and 31.36 higher than DFG-B school districts.

The mean of the control group decreased 14.3 points from NJASK 7 (2007-2008) compared to the NJASK 8 (2008-2009) results. The GE students statewide and in DFG-B school districts increased 3.3 and 5.3 points respectively from 7th to 8th grade for these same school years. The mean of the experimental group slightly decreased less than a point (.81) from NJASK 7 (2008-2009) compared to the NJASK 8 (2009-2010). The GE students statewide and in DFG-B schools districts increased 7.6 and 8.5 points respectively from 7th to 8th grade for these same school years.

Conclusions

Section 4 presented the findings obtained from statistical analyses of the data gathered to investigate if a significant relationship exists between extended blocks of in English and student achievement on high-stakes tests. Comparisons were made between the experimental group and control group using the NJASK data. There were 43

participants in the control group and 48 participants in the experimental group. The control group had a mean score of 255.09 on the NJASK 7 in 2007-2008 compared to a mean score of 252.97 for the experimental group in 2008-2009. The control group had a mean score of 240.79 on the NJASK 8 in 2008-2009 compared to a mean score of 252.16 for the experimental group in 2009-2010. The mean scores indicated the control group outperformed the experimental group as 7th graders by 2.12 points. However, the experimental group outperformed the control group as 8th graders by 11.37 points.

Both the experimental and control group outperformed GE students statewide and in DFG-B school districts on the NJASK 7 and NJASK 8 from 2007-2008 through 2009-2010. However, the participants for this study were selected from 8100 English which were advance placement sections. The NJASK test results of general education students statewide and in DFG-B school districts were not restricted to advanced placement or higher level English course sections. The purposeful sampling of advanced placement students would have an impact on the data findings and comparisons between School C and other school districts.

The ANOVA test for first research question indicated a statistically significant decrease between NJASK 7 and NJASK 8 scores for the control group. The ANOVA test for the second research question indicated no statistically significant difference between NJASK 7 and NJASK 8 scores for the experimental group. The ANOVA test for the third research question indicated a statistically significant difference between the control and experimental group's test results on the NJASK 8.

Neither the control nor experimental group significantly improved from 7th to 8th grade. Unlike the experimental group, the control group's test results on the NJASK 8 did significantly decrease from their NJASK 7 achievement levels. The experimental group's test results on NJASK 8 were consistent with their NJASK 7 achievement levels. The experimental group scored significantly higher on the NJASK 8 than the control group. The findings indicated the experimental group outperformed the control group as students moved from 7th to 8th grade.

The descriptive statistics did not reveal decreases on the NJASK for GE students statewide and in DFG-B school from 7th to 8th grade. These data findings suggested the control group's significant decrease from 7th and 8th grade varied from the NJASK data trends of GE students statewide and in DFG-B school districts, 2007–2010. The experimental group's stable performance from 7th to 8th grade was consistent with the NJASK data trends of GE students statewide and in DFG-B school districts, 2007–2010.

The data findings suggested there may be a relationship between extended blocks of time in 8th grade English and student achievement on the language arts literacy portions of the NJASK. 8th graders who received the extended, 90-minute block of English daily outperformed 8th graders enrolled in the traditional 45-minute period. The extended block group had no significant decrease in test results from 7th to 8th grade unlike the traditional group. However, the data findings indicated students in the extended block had no significant increases on their NJASK scores from 7th to 8th grade.

Section 5 further explores the interpretations of the findings. Section 5 discusses conclusions and recommendations for further study.

Section 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quasi-experimental study was to investigate whether a significant relationship exists between extended blocks of 8th grade English and student achievement on high-stakes tests. This study explored the theory established by Carroll (1963) that there is a relationship between amounts of instruction time and student achievement. Section 5 discusses the effectiveness of extended time blocks in English on high-stakes test achievement as students move from 7th to 8th grade. The section includes (a) interpretation of findings, (b) implications for social change, (c) recommendations for actions, and (d) recommendations for further studies. The discussions in Section 5 focus on guiding research questions.

This study investigated whether an extended time block of English in 8th grade had a significant effect on student achievement in the language arts literacy sections of the NJASK. Most block schedules are categorized as one of the following types: four-by-four model, A/B model, and modified block (Harvey, 2008; Queen, 2003). School C implemented a modified block schedule but referred to it as an extended block. Modified block types incorporate traditional and block scheduling approaches by providing an additional period of a selected subject into a traditional schedule format on a daily basis (Mowen & Mowen, 2004; Harvey, 2008; Queen, 2003). Many block schedule configurations do not increase the total number of instructional minutes students receive overall during a year (Gullat, 2006; McLeod, Fisher, & Hoover, 2003). However, the

extended block implemented by School C did increase the amount of instruction time 8th grade students got in English daily and overall during the school year.

A nonequivalent pretest–posttest design was used to collect data from a single school setting (School C) for two groups of students as they moved from 7th to 8th grade. The control group consisted of 43 participants, and the experimental group had 48 participants. The control group received traditional, 45-minute periods of 8th grade advanced placement English daily during 2008-2009. The experimental group received 90-minute periods of 8th grade advanced placement English daily during 2009-2010. Participants in both groups had 45-minute periods of 7th grade advanced placement English daily with the same teacher (Mrs. A). Test results on the NJASK 7 and NJASK 8 were collected; they provided a valid and reliable pretest and posttest measurement.

The following main research question was considered in this study: What effect does extended blocks of time in English have on 8th grade student achievement for the language arts portion of NJASK compared to high-stakes test results under traditional English schedules? Data was collected and analyzed in answering three subsequent research questions.

1. What effects did traditional English courses have on 8th grade student achievement on language arts literacy portions of the NJASK in the 2008-2009 school year compared with their 7th grade test results from the 2007-2008 school year?
2. What effects did 8th graders enrolled in extended block English courses have on achievement for the language arts literacy portions of the NJASK in the

2009-2010 school year compared to their 7th grade test results in the 2008-2009 school year?

3. What were the differences on literacy achievement for language arts portions of the NJASK between 8th grade students enrolled in traditional English periods in 2008-2009 compared with 8th grade students in extended blocks in the 2009-2010 school year?

Hypothesis testing for the three guiding research question used a single-factor, independent-measures ANOVA test. The SPSS program was used to perform one-way ANOVA tests.

The independent variable for this study was the amount of instruction time participants received in English classes daily under traditional and extended block schedule types. The dependent variable in the study was participants' high-stakes test data from the language arts literacy sections of NJASK from the 2007-2008, 2008-2009, and 2009-2010 school years. Analyzed in the study was the impact of traditional or extended block schedules (IV) on student achievement for the language arts sections of the NJASK (DV). Comparisons of traditional and extended block students' NJASK test results helped determine the effectiveness providing 8th grade students additional instructional time in English.

This study used the NJASK as a pretest and posttest measurement. The language art literacy portion of the NJASK is scored on a 0 to 300 scale (NJDOE, 2009). Students who score 0–199 are considered partially proficient and fail. Those who score 200–249 are proficient and pass, while those who score 250–300 are considered advanced

proficient (NJDOE, 2009). All 7th and 8th graders are required to take this high-stakes test in accordance with the educational mandates of New Jersey (NJDOE, 2009).

The findings for the first research question indicated the control group's mean score of 255.09 on the NJASK 7 (2007-2008) as 7th graders decreased by 14.3 points compared to their mean score of 240.79 on the NJASK 8 (2008-2009) as 8th graders. While the control group's 8th grade test results dropped from previous 7th grade scores, the experimental group's test achievement remained consistent. The findings for the second research question indicated the experimental students' mean score of 252.97 on the NJASK 7 (2008-2009) was not significantly different compared to their mean score of 252.16 on the NJASK 8 (2009-2010). The findings for the third question indicated the experimental groups' mean score of 252.16 on the NJASK 8 (2009-2010) was significantly higher compared to the control groups' mean score of 240.79 (2008-2009). Based on the results, the extended block group maintained above average NJASK achievement levels and scored higher from 7th to 8th grade compared to the traditional group. Data trends are indicated in Table 9.

Table 9

NJASK Language Arts Literacy Mean Comparisons: Control and Experimental Groups

Participants	NJASK 7	NJASK 8
Control group	255.0930 (2007-2008)	240.7907 (2008-2009)
Experimental group	252.9792 (2008-2009)	252.1667 (2009-2010)

Interpretation of Findings

Table 9 provides comparative data of participant's NJASK achievement. The effectiveness of the schedule reform, which increased English time daily, was evident in the achievement comparisons on the NJASK. The control and experimental groups both had traditional periods of English and achieved above average scores on the NJASK 7 as 7th graders. The control groups' mean score of 255.09 on the NJASK 7 (2007-2008) was 2.12 points higher than the experimental groups' mean score of 252.97 on the NJASK 7 (2008-2009). However as 8th graders, the experimental groups' mean score of 252.16 on the NJASK 8 (2009-2010) was 11.37 points higher than the control groups' mean score of 240.79 on the NJASK 8 (2008-2009). As students moved from 7th to 8th grade, those that received the extended blocks of English outperformed those enrolled in the traditional periods of English.

The guiding research questions for the study tried to determine if instruction time caused significant differences in achievement from 7th to 8th grade. Other variables possibly causing student achievement differences could be analyzed in future studies, which will be discussed in more detail in the recommendation of further study subsection.

Interpretation of Research Question 1

The first research question stated: What effects did traditional English courses have on 8th grade student achievement on language arts literacy portions of the NJASK in the 2008-2009 school year compared with their 7th grade test results from the 2007-2008 school year? The ANOVA tested the H_0 ¹: The 8th grade students enrolled in traditional English course sections (8100) have no significant increase on NJASK in their

literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule. The H_1^1 stated: The 8th graders enrolled in traditional English course sections (8100) have a significant increase on NJASK in their literacy achievement for language arts in the 2008-2009 school year compared with their 7th grade scores in 2007-2008 school year under a traditional schedule

There was a statistically significant difference between 7th and 8th grade NJASK scores for the control group which had traditional periods of English in 8th grade. However, the correlation was negative with the mean score of 240.79 on the NJASK 8 (2008-2009) decreasing 14.3 points from the previous mean score of 255.09 on the NJASK 7 (2007-2008).

One of the possible causes for such a dramatic drop of scores could have been due to flaws with the design of the NJASK tests. The design and administration processes mandated by the state of New Jersey are supposed to ensure the NJASK is a valid and reliable measurement from year to year (NJDOE, 2008). School districts should be able to use NJASK test results to determine annual yearly progress toward mastering the established state curriculum standards for English on a school-wide and individual student basis (NJDOE, 2008). An additional data collection and analysis was used to determine if other school districts had similar achievement trends for these years. Data trends are indicated in Table 10.

Table 10

General Education (GE) NJASK Language Arts Literacy Mean Comparisons: Control Group, State, and DFG-B

GE students	NJASK 7 2007-2008	NJASK 8 2008-2009
School C control group	255.0930	240.7907
Statewide	222.4	225.7
DFG-B	212.4	217.7

The additional analysis of NJASK data indicated School C's decrease in achievement was different from achievements trends of general education students in the state and district factor group B (DFG-B) school districts. General education students statewide had mean score of 225.7 on the NJASK 8 in 2008-2009 which was an increase of 3.3 points from a mean of 222.4 on the NJASK 7 in 2007-2008 (NJDOE, 2010). General education students in DFG-B school districts had a mean score of 217.7 on the NJASK 8 in 2008-2009 which was an increase of 5.3 points from a mean of 212.4 on the NJASK 7 in 2007-2008 (NJDOE, 2010). Those consistent numbers confirmed that the NJASK was a valid and reliable measurement. The control groups' significant decrease was a unique achievement trend, but not the result of poor test design.

As 7th graders, the control group outperformed other general education students statewide and in DFG-B school districts on the NJASK 7 in 2007-2008. Again as 8th graders, School C students outperformed other general education students statewide and in DFG-B school districts on the NJASK in 2008-2009. The achievement differences may be attributed to purposeful sampling method which selected participants from

advanced placement English sections. Unlike the control group, the NJASK mean scores for general education students statewide and in DFG-B school districts were not limited to only advance level students. The control group's high mean scores were skewed compared to the state and DFG-B schools because averages were based on test results from the highest performing students in School C.

The purposeful sampling method collected test data from the same participants as they moved from 7th to 8th grade. As 7th graders, the control groups' mean score on the NJASK 7 (2007-2008) of 255.09 was advanced proficient (above 250) under a traditional English period. As 8th graders, the control groups' mean score on the NJASK 8 (2008-2009) of 240.79 was proficient (249-200) under a traditional English period. These findings suggested traditional periods of 8th grade English failed to improve, or even maintain, the NJASK achievement levels for control group.

The evidence from the control group indicated advanced placement students had a dramatic drop in language arts achievement from 7th to 8th grade. The results of the first research question confirmed a problem in School C and the effectiveness traditional English periods for 8th graders. The highest achieving or top students of School C have to perform well for the school to make annual yearly progress. School C implemented the extended block reform in an effort to improve 8th grade performance on the NJASK. The second research question investigated the effectiveness of School C's schedule reform.

Interpretation of Research Question 2

The second research question stated: What effects do 8th graders enrolled in extended block English courses have on achievement for the language arts literacy portions of the NJASK in the 2009-2010 school year compared to their 7th grade test results in the 2008-2009 school year? The ANOVA tested the H_0^2 : The 8th graders enrolled in extended English course sections (8100) have no significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule. The H_1^2 stated: The 8th graders enrolled in extended English course sections (8100) have a significant increase in their literacy achievement for language arts portions of the NJASK in the 2009-2010 school year compared with their 7th grade test results in the 2008-2009 school year under a traditional schedule.

There were no statistically significant differences between 7th and 8th grade NJASK scores for students who had extended block period of 8th grade English. The mean score of 252.97 on the NJASK 7 in 2008-2009 was less than a point (0.81) decrease from the mean score of 252.16 on the NJASK 8 in 2009-2010. A lack of statistical differences would not support positive effects of the extended block, nor did the results indicate the schedule reform had negative effects on test achievement. When considering those results by themselves, the extended block had no impact on student achievement. However, additional analysis and comparisons with the traditional group provided more evidence about the effectiveness of the extended block reform.

In an effort to interpret achievement trends and the impact of extended block schedules, additional data were collected and analyzed for other general education students statewide and in DFG-B school districts. This information would provide a better understanding of the extended groups' consistent performance during the same testing years. Data trends are indicated in Table 11.

Table 11

General Education (GE) NJASK Language Arts Literacy Mean Comparisons:

Experimental Group, State, and DFG-B

GE students	NJASK 7 2008-2009	NJASK 8 2009-2010
School C experimental group	252.9792	252.1667
Statewide	222.1	229.7
DFG-B	212.3	220.8

General education students statewide had mean score of 229.7 on the NJASK 8 in 2009-2010 which was an increase of 7.6 points from a mean of 222.1 on the NJASK 7 in 2008-2009 (NJDOE, 2010). General education students in DFG-B school districts had a mean score of 220.8 on the NJASK 8 in 2009-2010 which was an increase of 8.5 points from a mean of 212.3 on the NJASK 7 in 2008-2009 (NJDOE, 2010). The experimental groups' mean score on the NJASK 7 (2008-2009) of 252.97 and NJASK 8 (2009-2010) of 252.16 were advanced proficient.

Unlike the experimental group for School C, general education students in the state and other DFG-B improved on the NJASK from 7th to 8th grade. However, the experimental groups' NJASK achievement was consistently higher than other general

education students in the state and in DFG-B school districts. The experimental groups' lack of significant growth was not surprising because their initial 7th grade scores being at high level (252.97) left less room for annual yearly progress or improvement.

The experimental group's outperforming other general education students could be attributed to the purposeful sampling method. Like the control group, participants in the experimental were selected strictly from advanced placement or 8100 English courses sections. However, the experimental groups' scores did not drop like control group from 7th to 8th grade. The evidence suggested the extended block was an effective school reform for School C. The third research question provided additional information about the impact of traditional and extended block schedules on student performance on the NJASK.

Interpretation of Research Question 3

The third research question stated: What are the differences on literacy achievement for language arts portions of the NJASK between 8th grade students enrolled in traditional English periods in 2008-2009 compared with 8th grade students in extended blocks in the 2009-2010 school year? The ANOVA tested the H_0^3 : The 8th grade students enrolled in extended block English courses in 2009-2010 school year have no significant increases on literacy achievement for language arts portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009. The H_1^3 stated: The 8th grade students enrolled in extended block English courses in 2009-2010 school year have significant increases on literacy achievement for language arts

portions of the NJASK compared to 8th grade students enrolled traditional English courses in 2008-2009.

There was a statistically significant difference between the control and experimental group's NJASK 8 test results. The control group had a mean score of 240.79 on the NJASK 8 (2008-2009). The experimental group, on the other hand, had mean score of 252.16 on the NJASK 8 (2009-2010). Students in the extended block scored 11.37 points higher compared to the traditionally scheduled students on the language arts literacy portions of the NJASK 8.

These comparative findings confirmed the effectiveness of the schedule reform in School C. 8th graders in the extended block of English did not significantly increase from their 7th grade NJASK test results. However, 8th graders in the traditional block did significantly decrease from their previous 7th grade NJASK test results. 8th graders in the extended block in 2009-2010 outperformed 8th graders in traditional schedule in 2008-2009 for School C. The extended block, at a minimum, seemed to have stabilized student performance and enabled NJASK achievement levels to remain advanced proficient (above 250) from year to year.

The evidence clearly indicated the experimental group maintained advanced proficiency while control group dramatically dropped from previous 7th grade test results. The amount of instruction time participants received in English had an impact on language arts literacy achievement for 8th grade students. The results of this study supported the theory that a relationship exists between amounts of instruction time and high-stakes test achievement. The influence of teacher or other variables on student

achievement on high-stakes tests could be explored in further studies. Additional data could be collected about the impact of extended blocks over time or on students excluded from this study.

Implications for Social Change

This study contributes to the field of education about the relationship between instruction time and student achievement on high-stakes tests. Educators regularly accept the theory that the amount of instruction time, more being better, will impact student learning and achievement (Arsonson, Zimmerman, & Carlos, 1999; Carroll, 1963; Fisher & Berliner, 1985; Marzano, 2003; O'Brien, 2006). The findings of this study indicated 8th graders who received additional instruction time in English were able to maintain advance proficiency on the NJASK. The evidence from this study supports the theory that more instruction time is beneficial to student achievement.

The study's findings provide meaningful information about the effective use of instruction time in schools. As a result of the accountability demands of NCLB, schools have been dedicating more instruction time toward test subject areas in an effort to improve student performance on high-stakes tests (Cavanagh 2006; McMurrer, 2008; Solorzano, 2008). Previous research had questioned the effectiveness of increasing instruction time for test subjects on high-stakes test achievement (Berliner, 2009; Cavanagh 2006; Nichols & Berliner, 2008; Popham, 2001; Petress, 2006; Phillips, 2006; Reville, 2007). Based on evidence from this study, additional amounts of instruction time in English will improve student achievement on high-stakes tests. The information

from this study supports dedicating more instruction time in the form of an extended block as an effective use of limited school time.

Previous studies found block schedule types can have positive or negative impacts on test achievement, and the literature review revealed limited information about effectiveness of modified or extended blocks overall (Falk, 2009; Gullat, 2008; Zepeda & Mayers, 2006). However, the results of this study indicated 8th graders receiving an extended block of English outperformed those in a traditional period on the NJASK. The study contributes to the educational literature about block scheduling and high-stakes test achievement. Based on evidence from this study, extended block periods of 90 minutes are better than traditional periods of 45 minutes on student performance on tests.

The legislation behind accountability mandates should not only identify and reward successful programs, but provide evidence about which programs need to be altered or eliminated (Hoffman & Nottis, 2008). The success of the implemented schedule reform was evident when comparing the test performance of traditional and extended block groups. Language arts literacy achievement on the NJASK did not significantly decrease or increase for extended block students from 7th to 8th grade. Those findings by themselves may not substantiate the effectiveness of this type of schedule reform. However, the consistent test performance of the extended group became more relevant when compared to the traditional group which significantly dropped by 14.3 points from 7th grade. The results of the study confirm that the extended block schedule in English can be recognized as a successful school reform.

Recommendation for Action

School administrators, especially those of schools trying to improve achievement on tests, can use the information from this study. Despite the emphasis currently being placed on high-stakes tests, many schools are still faced with the ongoing challenge of raising student achievement (Kelly & Monczunski, 2007; Posner, 2004). The extended block schedule offers an effective reform for schools to make annual yearly progress (AYP) and testing demands frequently associated with NCLB. The results of this study can assist school administrators in deciding to increase instruction time through an extended block period of English for the purpose of increasing test achievement.

The average public school in the United States provides approximately 6 hours of instructional time for 180 days (National Center for Education Statistics, 2008). The extended block schedule increases the amounts instruction time in tested subject areas within the confines of the normal school. The extended block schedule reform offers school administrators a valuable option for better preparing students for high-stakes test without expanding the school day.

The results of this study should be shared with school members involved in establishing new programs or school change, especially policy makers who may be considering an extended block schedule reform. Block scheduling has an influence on instruction time, teaching practices, and learning outcomes (Danielson, 2002; McLeod, Fisher, & Hoover, 2003). Organizational changes should empower and involve the members it effects in the decision making and reform processes (Bennis & Goldsmith, 2003; Sergiovanni, 2005). The collaboration of school stakeholders can help the success

of a schedule reform, or any other school change. School policy makers can use the information from this study as a rationale for implementing an extended block in an effort to increase student achievement on high-stakes tests.

The results of this study are particularly meaningful and should be shared with the stakeholders of School C. The extended block reform has been implemented in School C since the 2007-2008 school year, yet there has been no formal assessment of its effectiveness. The implementation and continuation processes are critical components of any meaningful education change (Fullan, 2007). Based on the information from this study, School C constituents can decide if extended blocks should be continued, altered, or abandoned. The rationale for continuing the schedule reform is supported by the extended block group's test performance in comparison to the traditional group.

The evidence from this study is relevant to educators and future researchers in developing a better understanding about the impact of increased amounts of instruction time on student achievement as measured by performance on high-stakes tests. More instruction time helps to improve student achievement is a commonly held belief in education (Aronson, Zimmerman, & Carlos, 1999; Fisher & Berliner, 1985; Marzano, 2003). This study contributes to the literature base about the relationship between instruction time and student achievement which can be useful in further studies.

This research can be disseminated through dissertation data bases. Other researchers may access this information using these legally protected sources. The results of this study can be shared with the chief school administrator of School C. He

has final decisions about further dissemination of the study's findings with the stakeholders of School C.

Recommendations for Further Study

This quasi-experimental study achieved its purpose which was to determine if additional amounts of instruction time using an extended block schedule improved student performance on high-stakes tests at the middle school level. The consistent test performance of the extended block students compared to the traditional students supports the theory that a relationship exists between instruction time and student achievement. However, the following recommendations for further study are based on this study's results. The recommendations can be used by school administrators, researchers, and those responsible for establishing school policy in the field of education.

1. Multiple variables may influence student performance on high-stakes tests, but this study investigated the variable of instruction time. A review of the literature revealed that both quantity and quality of instruction time in the classroom may influence student achievement (Knuchel, 2010; Smith, 2000). Future studies could explore how extended blocks are being used for teaching and learning purposes. Increased amounts of instruction time may impact high-stakes by itself, but the quality of the additional time students receive in an extended block should be investigated further.

Instructional time must be well utilized for substantial gains in student achievement to occur (Aronson, Zimmerman, & Carlos, 1999; Rangel 2007). How the additional time is used for specific lesson or classroom activities should be explored in future studies. Although block scheduling types impact the nature of instruction and

learning by increasing class lengths (Danielson, 2002; McLeod, Fisher, & Hoover, 2003), the evidence is not clear on consequences that block schedules have on student test achievement regardless of the methodology used to determine the effectiveness of block scheduling reforms (Gullat, 2008; Zepeda & Mayers, 2006). Further studies should determine how extended blocks impact the nature of instruction time. Investigating what happens in the classroom could provide a better understanding of the influence extended blocks have on student achievement on high-stakes tests.

2. Teacher quality was one of the limitations established for the purposes of this study. The study assumed all teachers in School C were effective and adhered to the NJCCCS that aligned with the NJASK. The study did not investigate the impact of the teacher quality as a possible variable on the NJASK test achievement. However, additional research should explore the role of the teacher during the extended block.

The data collected from Realtime revealed different teachers taught the 8100 English courses. Eighth grade students in the control group had 45-minute English periods during the 2008-2009 school year with Ms. B. Eighth grade students in the experimental group had 90-minute English periods during the 2009-2010 school year with Ms. C. Based on a review of the literature, the effectiveness of a teacher can have a significant influence on student high-stakes test achievement (Grossman et al., 2010; Johnson, Kahle, & Fargo, 2007; Leigh, 2010; Reeves, 2004). However, Ms. B and Ms. C did share commonalities such as school setting, available teacher resources, curriculum, and tenure status. As 7th graders, all participants had the same 7th grade teacher (Ms. A) for a traditional 45-minute period of English.

This study accounted for the student variables by following the same student groups from 7th to 8th grade. Further research should follow the same student groups with the same teachers. This research design would account for the variable of teacher quality. Accounting for this variable (role of the teacher) would help to substantiate the impact quantities of instruction time have on student achievement.

3. Additional data could be collected for the traditional and experimental group participants as they progress into the high school levels. Future mean scores on high-stakes test could help determine the consistency of 8th grade achievement trends. If the traditional group test scores drastically improved from 8th grade, then their 14.3 decrease may have been an anomaly caused by a variable during the 2008-2009 school year which was not accounted for or within the scope of this study.

Both of those groups will return to a traditional schedule for English at the high school level. If the experimental groups test scores drastically decrease on the next high-stakes test, then this trend would provide additional evidence about the effectiveness of the extended block schedule. Following the groups and their achievement trends could provide School C, and other educators, additional information about the impact schedule reforms on high-stakes test achievement.

4. Further research could include those middle school students excluded for the purposes of this study. The purposeful sampling method used participants from advanced placement English courses sections in a single school setting, School C. The rationale for only using that group was because the more advanced English courses had changed from a traditional period in 2008-2009 to an extended block period in 2009-2010. The

purposeful sampling method provided two similar groups for comparative reasons, but it excluded students not considered high performing or top achieving. The inclusion of lower level groups in future research may provide additional information about the relationship between extended blocks of time and high-stakes test achievement.

5. The results of this study were limited to data from 2007–2010. Future studies could collect data over a longer period to yield additional information about the effectiveness of extended block schedules. Yearly comparisons could be made for students enrolled in an extended block groups compared to other block types or traditional schedules. This type of research design could determine if extended blocks consistently benefit student performance on high-stakes tests.

There is a lack of information in the literature about the impact of block schedule types on test achievement (Falk, 2009). Further research would help to address the gap which exists in the literature about extended blocks. Comparative data of various schedule types over time should be explored in further studies to determine which schedule type is most beneficial for student achievement on high-stakes test.

Conclusion

As a result of the accountability demands associated with NCLB, today's school administrators are faced with the challenge of raising test scores and getting all students to pass mandated tests (Gentiluccio & Muto, 2007; Posner, 2004). The extended block schedule described in this study provides an effective reform for improving student performance on high-stakes tests. The success of teaching and learning in schools is measured by student achievement on high-stakes test (Soloranzo, 2008). The extended

block schedule reform can help school administrators, and perhaps more importantly students, successfully pass established benchmarks on mandated tests.

The extended block reform is based on the theory that providing more instruction time will improve student performance on tests. Carroll (1963) founded a theory that a relationship existed between learning and time. He expressed learning as a function of the ratio between the amounts of time spent on learning over time needed described ($\text{degree of learning} = \text{time spent}/\text{time needed}$). Like other previous research, this study contributed to the literature about Carroll's theory. The evidence from this study substantiates a relationship exists between the amounts of instruction time and student achievement.

This study found 8th graders receiving an extended 90-minute block of English daily outperformed those in a traditional 45-minute period on the NJASK. Today's schools are dedicating more time towards tested subjects in an effort to improve student performance on tests (Cavanagh, 2006; McMurrer, 2008). Based on the evidence from this study, struggling schools should consider using the extended block schedule reform. The extended block provides additional time which has a positive impact on student achievement on high-stakes tests.

The constraints of the normal 6-hour 180-day school calendar have educational leaders and policy makers exploring strategies which use time more effectively in schools (National Center for Education Statistics, 2007; O'Brien 2006). Schools are obligated to use the limited resource of instruction time in ways which ensure student learning and achievement. The National Commission on Time and Learning (1994) described public

schools as prisoners of time and warned that American school children would continually fall behind other nations as a result time constraints. One of the recommendations for fixing the design flaws of school time was to abandon traditional periods and provide block schedules of two or more periods for extended exploration of topics and learning opportunities (National Commission on Time and Learning, 1994). The results of this study support the effectiveness of moving away from traditional periods and providing students block periods. The extended block schedule reform may be a solution that enables schools to avoid becoming prisoners of time.

The purpose of this study was to determine if the extended block period used in School C had a significant effect on NJASK achievement. The findings indicated providing 8th graders additional amounts of instruction for English had an impact on student performance on tests. However, further research needs to be conducted about the relationship between extended blocks of time and test achievement. Various block scheduling configurations can influence the way instruction time is used, teaching practices, and learning outcomes (Danielson, 2002; McLeod, Fisher, & Hoover, 2003). Future research should explore how extended blocks of time are being used for teaching and learning purposes.

Additional studies can investigate if this schedule reform consistently improves learning outcomes as measured by high-stakes test achievement. Based on evidence from this study, students in an extended block perform better on the NJASK. School C may want to further explore the high-stakes test achievement trends of participants from this study as they move through high school. Future studies may include student groups,

which are not considered advanced or high achieving students, excluded for the purposes of this study. The collection of data over a longer period could be made for students enrolled in an extended block groups compared to other block types or traditional schedules. Further studies are needed to yield additional information and support the effectiveness of extended block schedules on high-stakes tests.

This study adds to the body of literature about block schedule types and student achievement. In a technology driven society, school administrators and those in charge of educational policy may have a tendency to overlook instruction time as a meaningful school change. Unlike some school reforms, all schools have the ability to consider schedule reforms. The question becomes whether the feasibility of such changes are beneficial. Today in the field of education, success is often determined by student achievement on high-stakes tests. The extended block schedule offers a valuable change to help schools and student be labeled as successful.

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Appendix A: Certificate of IRB Training



Appendix B: Data Use Agreement

DATA USE AGREEMENT

This Data Use Agreement, effective as of 11/30/10 , is entered into by and between Douglas M. Corbett (“Data Recipient”) and Dr. Triantifillos Parlapanides, Superintendent of Central Regional School District (“Data Provider”). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set (“LDS”) for use in research in accord with the HIPAA and FERPA Regulations.

1. Definitions. Unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the “HIPAA Regulations” codified at Title 45 parts 160 through 164 of the United States Code of Federal Regulations, as amended from time to time.
2. Preparation of the LDS. Data Provider, Dr. Parlapanides, shall prepare and furnish to Data Recipient, Douglas M. Corbett, a LDS in accord with any applicable HIPAA or FERPA Regulations
3. Data Fields in the LDS. No direct identifiers such as names may be included in the Limited Data Set (LDS). In preparing the LDS, Dr. Parlapanides shall include the **data fields specified as follows**, which are the minimum necessary to accomplish the research: The researcher intends to analyze NJASK test achievement from 7th to 8th grade for those students enrolled in the 8100 English courses which changed from traditional periods in 2008-2009 to extended blocks of time in 2009-2010. The researcher will need access to the following data: Identification of students enrolled in English 8100 courses in 2008-2009 and 2009-2010, NJASK test scores 2007-2008 7th grade level, NJASK scores 2008-2009 7th and 8th grade level, and NJASK scores 2009-2010 8th grade level.
4. Responsibilities of Data Recipient. Data Recipient, Douglas M. Corbett, agrees to:
 - a. Use or disclose the LDS only as permitted by this Agreement or as required by law;
 - b. Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;
 - c. Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;

- d. Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and
 - e. Not use the information in the LDS to identify or contact the individuals who are data subjects.
5. Permitted Uses and Disclosures of the LDS. Data Recipient, Douglas M. Corbett, may use and/or disclose the LDS for its research activities only.
6. Term and Termination.
- a. Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.
 - b. Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.
 - c. Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.
 - d. For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.
 - e. Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.
7. Miscellaneous.
- a. Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or

regulations, either Party may terminate this Agreement as provided in section 6.

- b. Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.
- c. No Third Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.
- d. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.
- e. Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER

Signed: *Triantifillos Parlapanides*

Print Name: Dr. Triantifillos Parlapanides

Print Title: Superintendent, Central Regional

DATA RECIPIENT

Signed: *Douglas M. Corbett*

Print Name: Douglas M. Corbett

Print Title: HS Principal

Curriculum Vitae

Douglas M. Corbett

PO Box 1342, 2 Fletcher Place
 Island Heights, NJ 08732
 E-mail: dcorbett@centralregional.net

Professional Experience**2010- Present High School Principal**

Central Regional School District, Bayville, NJ

- Educational leader of a suburban high school which contains 1350 high school students grades 9–12, 100 teachers, and 90 additional staff members

2008- 2010 Supervisor of Curriculum and Instruction

Central Regional School District, Bayville, NJ

- District-wide director of English, Social Studies, Music, and Home Economics

2002- 2008 Assistant Principal

Central Regional Middle School, Bayville, NJ

- Developed and implemented building goals, safety plans, teacher responsibilities, and learner expectations in accordance with district policies and legal mandates

1995-2002 Teacher

Central Regional Middle School, Bayville, NJ

- Met learning needs of diversified student population grades 7-8 for Social Studies

1994-1995 4th Grade Teacher

Thurgood Marshall Elementary School, Irvington, NJ

- Taught all subjects in an urban setting

Education**2007-Present Walden University, Minneapolis, MN**

- Currently enrolled and completing doctorate program: Ed. D. Administration Leadership for Teaching and Learning

2002 New Jersey City University, Jersey City, NJ

- Masters Degree, Supervision & Administration
- Standard Certificate: Principal/ Supervisor, Certificate of Eligibility: Chief School Administrator/ Business Administrator

1993 Kean University, Union, NJ

- NJ Teaching Certification

1992 Old Dominion University, Norfolk, VA

- Bachelor of Arts: Major- Speech Communication, Minor- Marketing