Student Characteristics, Academic Self-concept and Language Arts Literacy Performance in Traditional and Block Scheduling in Two Urban Schools

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Student Characteristics, Academic Self-Concept and Language Arts Literacy

Performance in Traditional and
Block Scheduling in Two Urban Schools

Dissertation

Presented in Partial Fulfillment of the Requirements of the Degree of
Doctorate of Philosophy

Lynn University

By

Luana Gipson-Bruce

Lynn University

June 2008
Student Characteristics, Academic Self-Concept and Language Arts Literacy Performance in Traditional and Block Scheduling in Two Urban Schools

Gipson-Bruce, Luana
Lynn University, 2008

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“My journey has just begun and it will take a lifetime to end”
Student Characteristics, Academic Self-Concept and Language Arts Literacy Performance in Traditional and Block Scheduling in Two Urban Schools

ABSTRACT

The effectiveness of language arts literacy (LAL) block scheduling on student achievement and self-efficacy is a strategy of education reform. Language arts skills in urban schools is noted in the 1983 report “A Nation at Risk”, which documents the seriousness of urban school literacy difficulties. In addition, state standardized requirements have attested to poor language arts performance in many minority schools.

The purpose of this study is to describe the demographic, health, academic self-concept and student achievement of a 6th grade sample of 62 students in two urban schools, one which implements a traditional scheduling language arts program and the other which implements a block scheduling approach to LAL instruction. This study explored possible differences between student characteristics, academic self-concept measured by PASS and student performance using NJASK scores for 4th (2004-2005) and 6th grade (2006-2007) administrations. The study used explanatory variables to determine whether block scheduling had a greater explanatory power of LAL gains. Data analysis utilized descriptive analysis, T-tests, chi-square, multiple regression analysis and adjusted R-squares.

Findings indicated that there were no significant differences noted between traditional and block scheduling schools when student characteristics, academic self-concept and Language arts Literacy (LAL) achievement were compared. The Block sample did not have a significantly greater academic self-concept or a greater increase in
LAL performance than traditional school students. Explanatory variables of age, Lunch eligibility and PASS Full Scale Scores were significant variables to predict change in LAL in traditional students. The block scheduling predictors of age, lunch eligibility, disability/special education and Pass Full scale scores proved to be statistically significant predictors of LAL change. However, block scheduling variables did not have significantly greater explanatory power to predict NJASK change when compared to the traditional sample.

Additional findings revealed that student’s participating in “paid and reduced” lunch programs scored higher on their PASS scores than those students participating in free lunch in both samples. Further research should address teacher instructional quality during block scheduling, the measure of additional explanatory variables and teacher perceptions in traditional and block scheduling schools.
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CHAPTER I
INTRODUCTION TO THE STUDY

Introduction and Background

The effects of language arts block scheduling strategy on middle school student achievement in an urban environment, is a growing reform model in American schools. The “Nation at Risk Report” (U.S Department, 1998) and Goodlad’s (1984) multiple city studies have alluded to unfortunate statistics regarding America’s failing educational systems. Both documents attest to grave educational conditions ranging from significant language arts difficulties to an urgent need for educational reform in urban public schools. Far too many students in the nation do not acquire the reading skills to help them move on to the challenges of high school curriculum and future employment (Sturtevant, 2003).

In addition, the 8th grade National Assessment of Educational progress (NAEP) revealed that a quarter of the nation’s 8th graders are reading at "below basic levels" and that these individuals will not be able to compete academically or economically if not given a chance to increase their comprehension, vocabulary, writing and study skills (Sturtevant, 2003). Today, minority school districts are struggling with the dilemma of low standardized test scores and student belief system failures (Sanders, 2000). Many adolescents educated in middle schools will find reading and writing tasks very challenging due to the extensive amount of time needed to properly address this area, and the addition of more content area subjects which will demand more reading and a greater understanding of complex vocabulary (Strauss & Irvin, 2005). Minority schools
experience a disproportionate rate of reading and language arts difficulties amongst non-
English speakers and those who reside in low income impoverished settings (Snow,
Burns & Griffin, 1998). African Americans in urban areas are considered to be
disproportionately represented amongst the nations poor, and weak reading skills and
academic failure are directly caused by their lower socioeconomic status (as cited in
Harris, 2003). In addition, Lomotey (as cited in Cotton, 1991) noted that the achievement
gap as measured by standardized assessment show white students more than two years
above black students in reading, math and writing scores.

A report of the NAEP (U.S. Department of Education, 1998) revealed that a
quarter of the nations 8th graders are reading at “below basic levels” and these students
will not academically or economically compete if not given the opportunity to increase
their knowledge and comprehension of complex information, vocabulary, writing and
study skills (Sturtevant, 2003). According to Cooter (2004), urban school districts are
faced with high drop out rates, truancy issues and teen-age crime with the common
denominator being literacy. Adolescent LAL, in particular, has been a neglected genre
lacking adequate programs and school personnel to address reading ineffectiveness in
middle schools (Moore, Bean, Birdyshaw & Rycik, 1999). Moreover, while the
popularity in curriculum based assessment become more of a reality, standardized
assessments that align with Core Curriculum Standards tend to affect achievement
specifically in urban school districts (Sanders, 2000; Sturtevant, 2003; NJDOE, 2005b).

Too often, reform models in urban schools are ineffective (Sanders, 2000), and
LAL achievement in urban middle school continues to be an issue of major concern
(Sanders, 2000; Strauss & Irvin, 2005; Snow et al, 1998). Educators are challenged to find
solutions for this problem. Instructional strategies and types of scheduling plans exist that may provide educators with the answers, however there continues to be limited classroom time to address many of the problems associated with LAL achievement in urban schools (Shortt & Thayer, 1999; Carroll, 1994; Brasel, Gill, Christner & Rumbaut, 1999). A Government report entitled “Prisoners of Time” (National Education Commission, 1994) based on a 24 month investigation addressed five serious barriers to efforts to improve learning. The issue of a time barrier became a significant concern and concentrated on the following setbacks in teaching:

1. A change is needed in fix clocks and calendar schedules in schools.
2. Academic time has been taken away to make use for a host of nonacademic activities in schools.
3. School schedules must be modified to address the changes students experience outside of their classrooms.
4. Educators do not have the time necessary to complete their jobs adequately.
5. Mastering international standards will require a need for more instructional time for all students.

As extended course time scheduling emerges as a popular method of instructional strategy, there continues to be controversy regarding the effects of this reform, and whether it can actually improve student achievement levels in LAL.

A Carnegie Corporation sponsored study conducted by Biancarosa and Snow (2004), enlisted several ways to improve LAL at the middle and high school level including: direct and explicit reading comprehension instruction, motivational and self directed learning techniques, text based cooperative learning, strategic tutoring, technology infused curriculum, continuous assessment practices and extended time
scheduling or block scheduling. The study revealed that these instructional strategies and organizational changes might be a solution to the LAL difficulties that exist in minority middle schools (Biancarosa & Snow, 2004).

This study reviews some of the language arts theories and approaches used to teach LAL skills. Several language arts approaches based on constructive learning theories relative to the LAL approach emphasize practical applications to improve student achievement in LAL. These approaches address the learner as playing an active role in learning (Bruner, 1997; Hackmann, 2004; Cotton, 1991). Themes in constructivist learning classrooms include having students present their own questioning, formulate their own hypotheses and test their work for validity. Corrected answers are seen as challenging and a way for deepening concepts of knowledge and teamwork building (Applefield, Huber and Moallem, 2000). Gagnon and Collay (2001) present a model known as the “designing of Learning model” which focuses on a student directed approach to learning. This model integrates socio-cultural concepts into a student’s daily lessons.

The integrative learning theory relative to LAL encompasses integrative learning instruction. Gavelek, Rapheal, Biondo & Wang (2000) advocate three conceptual models of language arts integrative learning including integrated language arts, integrated curriculum, and in and out of school connections to the skill development of LAL. Several theorists have concluded that educational models such as constructivist and integrative require additional time for implementing the skills and strategies needed to help students learn. Specifically, the time needed is beyond the traditional 45-50 minutes class periods (Hackmann, 2004; Gavelek et al, 2000; Caskey, 2002).
Student current achievement levels and student disabilities are two factors that effect student LAL progress. Recent information on urban school achievement has demonstrated that in many of the nation’s schools, measured achievement levels are considerably low (Sanders, 2000). Student characteristics such as student disabilities affect school learning and reaction to school language arts programs. When urban children have disabilities, this can limit achievement and school participation. The U.S Department of Education report of 1998 states that “Nationwide over two and one half million are classified as having learning disabilities or emotional disturbance with the majority of these students concentrated in urban school districts (as cited in Morocco, Clark-Ciarelli, Aquilar, Brigham,2002 , para. 2).

Factors influencing LAL achievement focus on areas and characteristics of students, teachers, and schools. Experienced middle school teachers and researchers such as Allen and Gonzalez, Atwell, Butler and Liner, Krognoss and Rief (as cited in Kingen, 2000), all have concluded that middle school factors that influence literacy include availability of time, high student expectations, school climate, language permeated setting, effective feedback during learning, opportunities to make mistakes and learn from them, and hands on activities. “The United States department of education has deemed high student expectations are important characteristics of effective schools” (Lewis & Wray, 2000, Para. 1). Positive expectations have been identified as one of the most important characteristics of effective schools Teacher quality is one of the most influencing factors in student achievement with the U.S.A investing one of the highest amounts into education totaling 192 billion dollars in teacher benefits and salaries in 1992 (Rice, 2003).
Student perceptions of their learning environments are as equally important to LAL learning. A student’s academic self-concept or perception of their academic abilities has shown significant relationship between student academic self-concept and student academic achievement (Boersma & Chapman, 1992; Chapman & Tunmer, 2003; Harter, 1999; Pajares & Schunk, 2001; Bandura, 1994). Researchers have also found relationships between student perceptions of their abilities, developmental ability and student academic programming (Halsey, 2004; Pajares & Schunk, 2001; Boresma & Chapman, 1992; Hay, Ashman & VanKraayenoord, 1997; Akande, 1997).

This study will examine student academic self-concept in both traditional and block scheduling schools to explore differences between both populations and to explain changes using explanatory variables including student academic self-concept.

In New Jersey schools, block scheduling continues to emerge as a popular method of extended time instruction, and as educators search for answers to the dilemma of language arts failure in urban surroundings, educational reform that focuses on language arts instruction utilizing block scheduling models, is evolving (Shortt & Thayer, 1999).

This study will measure a traditional program and a 90 minute block scheduling program (independent variables) in two urban area middle schools, the retrospective comparisons from the 2004-2005 and 2006-2007 school years analyses 6th grade student characteristics (attribute variables), academic self-concept and change in LAL achievement (dependent variables) on the NJASK evaluations. The is limited research that measures the magnitude of block scheduling in middle school age students with most of the focus concentrated on high school block scheduling (Wuderlick, Robertson & Valentine, 2000). In addition, more studies are needed that investigate the
effectiveness in classroom strategies and the effects a LAL block scheduling program has on student academic self-concept. This study will add to the literature already completed in this area while focusing on gaps that exist.

**Purpose of the Study**

LAL strategies for years have often been used in reform models to enhance language art achievement levels. Both constructivist and integrative approaches have been proven to require additional time for implementation in classrooms, particularly those in middle school/upper elementary type settings where there is a shortage of extended time of block scheduling language arts strategies. Previous studies on this topic have focused mainly on block scheduling strategies in the high school; whereas few studies have measured the effects of block scheduling strategies in younger school populations. The primary purpose of this non-experimental, exploratory (comparative) and explanatory (correlational) retrospective study is to explain the differences between language arts block and traditional scheduling school populations while utilizing attribute variables of student characteristic, the dependent variables of student academic self-concept and student LAL achievement outcome. Thus, this study is expected to provide the following specific purpose:

1. To describe the effects of traditional and block scheduling groups of 6th graders in two urban schools in the state of New Jersey by describing personal student characteristics (gender, SES, disability, ethnicity, academic self-concept and LAL achievement)
2. To explore possible differences between the 4th grade (2004-2006 school year) baseline demographic, health, academic characteristics, academic self-concept and student Language arts performance scores on NJASK tests in students who later experienced traditional and block scheduling in 5th and 6th grades.

3. To explore whether 6th grade students who experience a 90 minute block schedule for LAL have greater academic self-concept than 6th grade students who participate in traditional scheduling.

4. The explanatory purpose is to determine if demographic, health, academic characteristics (4th and 6th grades) and 6th grade academic self-concept are significant explanatory variables of a change in LAL (4th grade minus 6th grade NJASK scores) in 6th grade urban school students experiencing traditional and block scheduling (Total group).

**Definition of Terms**

The definition of language arts block scheduling and how it affects student progress derives from the theoretical base of a need to enhance academic learning skills through extended time learning school programs (Mattox, Handcock & Queen 2005; Mattox, 2001; Lewis, Cobb, Winokur, Leech, Viney & White 2003; Veal & Schreiber, 1999; Goodlad, 1984; Wyatt, 1996; Queen, 2000; Hackmann, 2004).

**Independent Variables**

Two independent variables will be investigated in this study. Definitions, both theoretical and operational, will be presented for each variable.
Scheduling

Theoretical definition. Traditional scheduling derives from the most popular form of scheduling in the United States and designates period by period scheduling allowing for six, seven or eight classes a day depending on the amount of time within the school day (Augustine, Constant, Juvonen, Le & Kragnoff, 2004; Wunderlick, Robertson & Valentine, 2000; Brasel et al, 1999). The language arts strategy of block scheduling addresses an intensive reform model approach to LAL learning. The process takes longer than traditional scheduling and decreases the number of classes taught on a daily basis (Wilson & Stokes, 1999; Shortt & Thayer, 1999).

Operational Definition. For the purpose of this study, the traditional LAL scheduling included 6th grade minority students in an upper elementary urban Public school setting involved in uncombined periods (45-50 minutes) of language arts instruction. Block scheduling LAL scheduling consisted of 6th grade minority students in an upper elementary urban public school setting who received a combined (90 minute) periods of language arts instruction. The block scheduling program has been implemented in the school district for a total of 2 ½ years. Sixth grade students involved in a block scheduling program will be compared to 6th grade students in a traditional scheduling program.

Academic Self-Concept

Theoretical definition. The concept of academic self-concept derives from a self perception process of academic engagement (Boersma & Chapman, 1992). Several theorists support a diversified meaning of self-concept with constructs relating to the perception of ones ability in several areas of academia (Harter, 1999; Pajeares & Schunk,
Bandura (1994) describes self-efficacy and self-concept relative to academic work as a person's beliefs and perceptions about their capabilities to reach stated levels that affect their lives. Some theorists also have connected academic self-concept with academic achievement, student development and learning programs (Halsey, 2004; Pajares & Schunk 2001; Boersma & Chapman, 1992; Hay et al, 1997; Akande, 1997).

Operational definition. For the purposes of this study, the independent variable of academic self-concept in this study was measured by the Perception of Ability Scale for Students (PASS). Participating students in both schools took this 70 item scale which analyzed student perceptions of general ability; math, reading/spelling, penmanship, neatness, school satisfaction and school confidence in both traditional and block scheduling schools (see Appendix B). The PASS was given to each study participant.

Dependent Variables

Language Arts Literacy Achievement

Theoretical definition. Language arts literacy (LAL) is described as a blend of elements including cognitive, socioeconomic and developmental aspects and often consists of an integrative approach to learning (Kucer, 2005, NJDOE, 1996). The integrative approach includes and involves the measurement of reading, writing, speaking, listening and viewing skills. The assessment of student achievements in this area is rendered through national, state and local tests (NJDOE, 2005a), and through school projects demonstrations and portfolios (Wyatt, 1996).

Operational definition. In this study, LAL achievement scores were obtained from the NJASK standardized achievement exams taken in the 2004 and 2006 school
term. These scores were recorded on the student record data form. The NJASK total LAL scores were recorded to compare LAL performance in the two types of schools (traditional and block). The NJASK Language arts assessment (grades 4th and 6th) measures student’s analysis of text (vocabulary and formulating inferences), critiquing information and writing prompt ability.

**Academic Self-concept**

*Theoretical definition.* As previously described, the concept of academic self-concept derives from a self perception process of academic engagement (Boersma & Chapman, 1992). Several theorists support a diversified meaning of self-concept with constructs relating to the perception of one’s ability in several areas of academia (Harter, 1999; Pajares & Schunk, 2001; Chapman & Tunmer, 2003; Boersma & Chapman, 1992). Bandura (1994) describes self efficacy and self-concept relative to academic work as a person’s beliefs and perceptions about their capabilities to reach stated levels that affects their lives. Some theorists also have connected academic self-concept with academic achievement, student development and learning programs (Halsey, 2004; Pajares & Schunk n.d; Boersma & Chapman, 1992; Hay et al, 1997; Akande, 1997).

*Operational definition.* In this study, academic self-concept as a dependent variable is based on total PASS scores calculated for each student in the study. These scores were compared between traditional scheduling and block scheduling in 6th grade students. In addition the dependent variable, academic self-concept, was utilized to measure whether 6th grade students in block scheduling schools have a greater
explanatory power than traditional scheduling students in determining a change in LAL achievement.

**Change in LAL Achievement**

*Theoretical Definition.* Change in LAL has previously been measured by longitudinal and retrospective studies in language arts instructional programs (Irmscher, 1996) and by measuring the effects of block scheduling programs (Mattox et al, 2005 and Mattox, 2001). All three studies have demonstrated significant change in LAL achievement when various instructional strategies are introduced.

*Operational Definition.* This study will address LAL change in achievement by measuring the sixth grade (2006-2007) NJASK achievement scores minus the 4th grade (2004-2005) NJASK achievement scores in the two types of scheduling schools.

**Attribute/Explanatory Variables**

**4th and 6th Grade Student Characteristics**

*Theoretical definition.* Demographics, student ability levels, gender and disability are utilized to explore the differences amongst groups (NJDOE, 2004)

*Operational definition.* In this study, the variable of student characteristics (Appendix A) will be determined by attributes of these variables as they are used in this study in various ways including: to ascertain descriptive data, to compare the difference between 4th grade (baseline) data and 6th grade data in traditional verses block scheduling groups, and in measuring the independent variable of change (6th grade minus 4th grade) in LAL achievement. These variables will help to explain this change within the various student characteristics and as attribute variables will help to determine the degree of
explanatory power in finding out whether block scheduling has greater gain in LAL achievement.

Justification

This study is justified by establishing its significance, researchability features and study feasibility. This study is significant due to its ability to render further knowledge into the realm and scope of urban school challenges in offering LAL strategies to address poor language arts skills and assessment too often associated with urban educational settings. The uniqueness of this study is characterized by its examination of the relationships between several variables in traditional and block scheduling schools that addresses student achievement, academic self-concept and characteristics that impact student LAL achievement through standardized assessment.

There continues to be a shortage block scheduling research conducted in elementary or middle school settings that reflect ethnic diversity (Mattox, et al, 2005; Nichols, 2005; Veal & Schrieber, 1999; Cobb et al, 1999). This study will be conducted at a 6th grade level in a traditional and block schedule urban upper elementary school program.

Several factors impede student language arts enhancement and growth amongst urban school student populations. Researchers indicate a continuous need to address these factors in further studies that measure school, community and student characteristics that affect language arts development, and moreover control for variables that may interfere with actual study results (Berends, Chun, Schuyler, Stockly & Briggs, 2002; Darling-Hammond, 2000; Earthman, 2002; Nichols, 2005; Mattox et al, 2005). This current block scheduling study will compare and analyze, age, gender, SES,
race, student disability, Grade point average of students in both (traditional and block) samples within the study.

Irmsher (1996), Lindsay (2005), Center for Education Reform [CER] (1996), Nichols (2005), and Slate and Jones (2000) present empirical data that supports the relationship between block scheduling and student achievements. However, there are also conflicting studies that either demonstrated significant results between the relationship between block scheduling and student achievement or have demonstrated that block scheduling can interfere with teacher planning and instruction (Cobb et al, 1999; Veal & Schreiber, 1999; Nichols, 2005). Other researchers have found no increase in student standardized testing when utilizing block scheduling or no significant difference in reading and writing areas (cobb et al, 1999; Veal & Scrieber, 1999; Nichols, 2005). The study being conducted will endeavor to clarify or determine whether block scheduling effects student LAL achievement including reading, language and writing areas and add to a larger body of evidence surrounding this topic.

To this date there has been limited theoretical or empirical studies on the relationship between block scheduling and student academic self-concept utilizing a scale specifically designed for measuring student academic self-concept known as the “Student perception of Ability Scale for Students” (Boersma & Chapman, 2002). This study will measure student perception of their academic programs and abilities. This evaluation will help to determine whether there is a difference between the academic self-concepts of 6th grade students in traditional verses block scheduling middle school programs.
A further rationale for this study concerns a personal interest in the evaluation of reform models within school districts put in practice in order to improve LAL skills amongst upper elementary school populations. Block scheduling as an educational reform is utilized in the form of a 90 minute extended class period currently for language arts and math periods. The effects of this type of program need to be determined.

This study is researchable because it contains scientific research questions and quantitative research variables that are measurable using descriptive and inferential statistics. Finally, this study is feasible because it can be implemented without significant time in and out of the school setting, the availability of 6th grade students in traditional and block urban schools, conducted within reasonable costs, and application of descriptive, comparative, correlation, multiple regression statistical analysis can be conducted on the variables under study. Moreover, all efforts will be made to ensure that the protection and rights of study participants are maintained.

**Delimitation and Scope**

This study has the following delimitations:

1. The study’s geographic limitations are within the state of New Jersey in two urban schools located within Northern New Jersey.

2. Schools included in the study contained a significant percentage of minority school children.

3. Student included in the study were either from a public traditional or block schedule school.

4. School district permission approval for parental consent and student assent to participate in study.
5. Students in both urban schools who are currently in a sixth grade enrollment
6. General education 6th grade students must be able to read English at a second
grade level (PASS inventory Requirement).
7. Special needs children in 6th grade general education classrooms reading at a
second grade level or above.
8. Participation is confined to those students with signed parental consent and
student assent forms.

Study Organization

Chapter I provided an overview of the study on student characteristics, academic
self-concept and LAL performance in traditional and block scheduling in two urban
schools. The background to the problem, study purpose, definition of study variables and
study justification and delimitations are included in this chapter.

Chapter II provides an extensive review of literature of general LAL strategies
and more specifically the language arts strategy of block scheduling and its effects on
student achievement outcomes. A critical analysis is presented of both theoretical and
empirical literature relative to this topic. A theoretical framework (research model) is
developed through gaps in literature. Research questions are presented and several
hypotheses are proposed.

Chapter III includes the research design (population, sample, and setting), study
instruments, data collection procedures and ethical considerations, methods of data
analysis and the evaluation of research methods.

Chapter IV expresses the study findings and the results of the hypotheses testing.
Finally, Chapter V will interpret the study results and conclusions will be offered along with study implications and limitations. This final chapter will include suggestions for future research.
CHAPTER II
REVIEW OF LITERATURE, THEORECTICAL FRAMEWORK, RESEARCH QUESTIONS AND HYPOTHESES

Introduction

The review of literature addresses theoretical and empirical research pertinent to the problem of poor LAL skills and low standardized assessment skills prevalent in many urban school districts specifically among upper elementary school or middle school children. The review contains empirical studies relative to language arts strategies and approaches, variables impacting LAL functioning, student’s perceptions of their abilities to engage in or perform in academic programs and subjects and lastly empirical studies are presented that measure the relationship between the language arts strategy of block scheduling and student achievement. The gaps and weaknesses in empirical studies have been presented through a critical analysis process.

This literature review initially identifies an overview of the problem relative to minority school districts who struggle to obtain higher students abilities ratings in student language arts performance. Statistical data of language arts progress from local, state, national and international reports comparing academic assessments of U.S students have been included, and finally constructivist and integrative learning theories as they relate to language arts are discussed and critiqued, along with learning models and approaches popular in classroom instruction.

Empirical studies that address the relationships between block scheduling and student perceptions of their abilities and associations in academic programs are included
along with studies that measure the effects of block scheduling on student academic achievements levels. The review of literature will propose further areas of scholarly inquiry, establish a theoretical basis for the study and develop research questions and hypotheses to be measured.

Review of the Literature

Language Arts Literacy

Since the time of the report, *A Nation At Risk: The Imperative of Education Reform* (U.S Department, 1998), many reform models have evolved. Prior to the report, Scholastic Aptitude Tests (SAT) demonstrated a continuous decline in scores since 1963 with average verbal and math scores dropping 40 points. Scores of 650 on the SAT have also declined dramatically during this time. The report addresses a lack of science and math achievement, and an increase in illiteracy as compared to international populations and standards. This report opened a call for education reform models within our nation, and the assistance of parents, administrators, teachers, and political figures to help address these issues and concerns. A Gallop Poll completed by the government in 1982 helped to support the population’s belief that education is a very critical aspect of quality in one’s life (U.S Department, 1998).

LAL and programs that foster literacy progress encompass “phonemic awareness, explicit and systematic phonics, and reading fluency, reading comprehension, vocabulary development and a student’s motivation to learn.” (“New Jersey”, 1996). LAL brings together a synthesis of reading, writing, listening, communicating and visual skills. Adolescent LAL programs should emphasize principles that support LAL growth. This
process may include the access to a substantial amount of reading materials, instruction that builds stronger reading skills, monitoring and assessment, trained teachers in reading skills, specialists to assist poorer readers, and teachers, parents and communities working together in their efforts to support language arts advancement strategies (Moore et al, 1999).

Biancarosa and Snow (2004) of the Carnegie Corporation indicated “meeting the needs of struggling readers and writers is not simply an altruistic goal” (p. 9). This type of reasoning encompasses a dual model of building and acquiring literacy reading skills at the basic levels, and extending these skills toward providing learning and reading skills that the student can carry with them throughout their life. The term literacy is consistently evolving into other fields of learning not just reading and writing and will grow into more scientific structures and aspects of culture in the teaching of LAL (Cooter, 2004).

**Theories on Literacy Development**

**Constructivist Theory and Application**

Theorists such as Erickson, Gee, Heath, Barton and Hamilton (as cited in Bruner, 1997) all relate to learning as an environmental progression. Bruner (1997) in his constructivist theory infuses views and explains LAL as the building of meaning as it relates to the student’s environment. An extension of his theory includes a focus on purpose and audience of a student’s reading or writing. According to Bruner (1997), students bring their experiences into their learning atmosphere. The theorist Au (as cited in Perez, 1998), reveals that these environmental experiences help to shape the meaning of words and text as the constructivist approach focuses its theory on the student as a
"learner socially involved in learning" (as cited in Perez, 1998, para.4). The constructivist theory in learning focuses on problem solving skills and an experiential infusing of reading, writing and language skills; however, non-contextual viewpoints against constructivist base learning focuses on a linguistic and cognitive direction in learning which learning theorist Gee (as cited in Kucer, 2005) theorizes "obscures the numerous ways that reading writing and arithmetic can interrelate with the workings of power and desire in social life" (Kucer, 2005, p. 197). According to the theorist Lewis (as cited in Brewer & Daane, 2002), a classroom, which addresses the constructivist way of learning focuses on socialized discovery, negotiation, sharing, and evaluation.

The constructivist theory of Bruner (1997) indicates that the development of LAL is sufficient for helping students to relate to their communities and further assists in understanding and relating literature that is presented in the classroom. Constructivist theory also provides an eclectic instructional style and incorporates other aspects of language art strategies. Bruner argues that when children are able to relate to their schoolwork, this provides for a greater appreciation for school literacy tasks.

In a theoretical article entitled "Constructivist Learning Design", Gagnon and Collay (2001), introduce a model based on the constructivist theory called "the designing for learning" model. This model encompasses student self-directed approaches to learning. The deductive model integrates socio-cultural concepts into daily educational lessons. The basic constructs of this model form a pattern of dimensions, which include the concepts of: (a) arranging situations for children to apply knowledge, (b) grouping students (c) bridging past and present knowledge (d) questioning to broaden critical thinking skills (e) creating exhibits to display student work, and (f) the allowance of
reflective feedback from students regarding work. Epistemological propositions as they relate to language arts infer that knowledge is physically contracted through active learning, knowledge as symbolic and learner as representative of this symbolism, knowledge is sociability, and the view of knowledge as seeking and discovery (Gagnon & Collay, 2001). Gagnon and Collay’s model originated from the works of learning, psychological and behavioral theorists such as Bloom’s taxonomy, Duckwork’s “teaching science models”, Schmuck and Schmuck’s “group process dynamics”, Johnson and Johnson’s “cooperative learning”, Sander’s “student questions”, Sizer’s “coalition for essential schools”, and Cooper and Brookfield’s work with student reflections (as cited in Gagnon & Collay, 2001).

The themes Gagnon and Collay (2001) incorporated in the model are based on integration of learning, psychological, and behavioral theory and applications. The clearly defined concepts provide for an understanding of the relationships between the concepts addressed. The model comes from a diverse array of theory. Explanatory propositions such as allowing children reflective feedback, exploration and locating meaning through experiences focus on a constructivist view of knowledge attainment by active processes rather than processes that are passive. This idea is separate from the Bloom’s taxonomy aspect of knowledge, which is interpreted within the context of comprehension, application, analysis, synthesis, and evaluation of skills (as cited in Gagnon & Collay, 2001).

External criticism of this model and theory comes from advocates of teacher planning approaches to learning which addresses passive learning models, and the lack of constructivist models in language arts classrooms due to administrative pressures and the
complexity and need for training of prospective and new teachers (Gagnon & Collay, 2001).

According to Applefield et al (2000), most of the research on constructivist learning have been more descriptive than comparative and most outcomes appear to be more qualitatively represented and quite different from traditional methodological forms. There is a need for more research that addresses the effectiveness of constructivist learning in enhancing students' overall achievement, and the use of predictive guidelines and successful constructivist approaches in the classroom. This can be completed through student interaction and teacher questioning that encourages effective student thinking which incorporates greater student efficacy. Hackman (2004) and Queen (2000) both relate constructivist methods as an ideal approach during extended time learning, and several educators who have implemented constructivist models state that there is a need for extended time to effectively present classroom models in order to emphasize cooperative learning, problem solving and integration curriculum and teamwork activities (Hackman, 2004; Queen, 2000; Applefield et al, 2000).

Hackmann (2004) states that in the 20th century approaches to academic learning focused more on the behaviorist theory of learning with teachers relying heavily on direct instruction approaches to learning; however, learning practices utilizing block scheduling may benefit from cooperative learning approaches, problem solving experiences and curriculum integration and learning that is relative to the constructivist classroom setting. Hackmann (2004) believes that there is a shortage of constructivism in secondary school classrooms yet seen more often in middle school because of the room for curriculum flexibility at this grade level. According to Hackmann (2004) there is no
theoretical base and limited research on the effectiveness of block scheduling on academic achievement. Block scheduling does not appear as frequently in constructivism classroom practices and research by Hackmann (2004) and Goodlad (1984) have expressed a need for extended time to implement constructivist classroom strategies. Studies also reveal that block scheduling is implemented for several reasons including improving instructional strategies, extending time for learning, to improve school climate, to enhance teacher and student moral and relationships (Hackmann, 2004; Goodlad, 1984). These are also some of the goals for the implementation of constructivism in learning.

In an empirical study completed by Goodlad (1984), in his book called “A place called School”, Goodlad describes educational practices relative to teach verbalizing (lecturing) application and/or skill and the student responding to the teacher’s directives. In the study which was one of the largest longitudinal study of schools ever completed, Goodlad and his colleagues devised a series of research questions they wanted answered regarding functions, problems and issues in education. The questions ranged from student perceptions to parental roles and involvement. Thirty-eight schools were represented in the study with data existing from a varied population including parents, teachers and students. This study was collected from a population of 27,000 students, teachers and parents. The population “differed in locality, size, characteristics of student population, family incomes and in other ways” (Goodlad, 1984, p. 18). In order to eliminate any form of contamination or bias Goodlad presents fictitious code names to each urban, rural, and suburban schools. Part of Goodlad’s findings and themes deal with what Goodlad calls, “implicit curriculum in schools in which students are encouraged to acquire facts through
their social and physical settings” (Goodlad, 1984, P. 30). According to Goodlad, a majority of the time in class teachers verbalized to students, and courses most enjoyed by the student were classes that enabled the students to become active participants. This finding is based on the constructivist student as active participants in acquiring knowledge. Many classroom strategies can be implemented in the classroom with extended course time, and assist in the remediation of skills.

Table 2-1 shows samples of LAL instructional models that can address weaknesses in reading and literacy learning skills. The 5 samples express ways students are actively and socially engaged in their learning and building of competent LAL skills.
Table 2-1
Examples of Instructional Literacy models that serve struggling LAL Students.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Collaborative Reasoning</th>
<th>Concept Oriented Reading Instruction</th>
<th>Guided Inquiry supporting multiple Literacies (GISML)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Middle School</td>
<td>Middle school</td>
<td>Middle School</td>
</tr>
</tbody>
</table>

**Premises**
- Students take a critical stance toward reading and allowed freedom to determine convincing classroom arguments. Critical and authoritativeness in students over their reading is important.
- Promotes motivation and a deeper engagement in reading and provides a deeper understanding of texts.
- Through teacher modeling students practice scientific practices. Students learn scientific content and internalize scientific process while strengthening their literacy skills through an authentic purpose.

**Approach**
- Teachers generate questions and students develop arguments in favor or against each position using their prior knowledge and experience.
- Students receive explicit instruction in comprehension strategies that relates to students experiences, gives students opportunities for choice and collaboration.
- Students work in small groups or pairs to investigate scientific questions through active inquiry. Students build theories and predictions, perform experiments and research.

**Target Areas**
- Discourse Knowledge Domain specific vocabulary, domain specific knowledge, background knowledge and metacognitive ability.
- Motivation, engagement, strategies, domain specific vocabulary, knowledge and background knowledge.
- Vocabulary, knowledge, background knowledge and strategies.

**Citation**
- Chinn, Anderson & Waggoner (as cited in Snow & Biancarosa, 2003)
- Guthrie (as cited in Snow & Biancarosa, 2003)

*Note.* Source: Adolescent Literacy and The Achievement Gap: What Do We Know and Where Do We Go From Here? (Snow & Biancarosa, 2003, p. 9-11).
Table 2-1
*Examples of instructional literacy models that serve struggling LAL students (continued)*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Strategic Instructional Model</th>
<th>Model</th>
<th>Premises</th>
<th>Approach</th>
<th>Target Areas</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle School</td>
<td>Rave-O</td>
<td>Reading Apprenticeship</td>
<td>Middle School and High School</td>
<td>Used with students who are dyslexic and develops each of the skills relative to fluent word recognition, retrieval, vocabulary, engagement and orthography</td>
<td>Students provided with series of strategies that aims at including academic achievement</td>
<td>Wolf &amp; Katzir-Cohen (as cited in Snow &amp; Biancarosa, 2004)</td>
</tr>
<tr>
<td>Late Middle School and High School</td>
<td>Consistent, intensive and explicit instruction is key to the success of LAL programs for at risk and struggling readers. By providing teachers with instructional approaches that work, teachers are able to teach students how to learn.</td>
<td>Inquiry based instructional model that is collaborative and empowers both adolescents and teachers.</td>
<td>Muti-faceted focusing on visual and processing word recognition and retrieval of meaning. LAL software plays and important role</td>
<td>Word recognition, fluency, comprehension, attitude and cognitive abilities</td>
<td>Metacognitive ability, fluency, general vocabulary domain specific vocabulary domain specific knowledge and syntax</td>
<td>Greenleaf, Shoenbach, Cziko &amp; Mueller (as cited in Snow &amp; Biancarosa, 2004)</td>
</tr>
</tbody>
</table>

Center for Research on Learning (as cited in Snow & Biancarosa, 2004)
The Smithfield Public schools (2006), in a position paper devised by the Faculty, supported the idea that a balanced LAL middle school curriculum has its roots in constructivist learning theory. According to their paper, the student acts as the composer in creating a purpose for reading relating to their prior knowledge and experiences. As a student begins to utilize their prior knowledge to learn how to read and write, the teacher acts to expand the student's idea base. Areas that are pertinent in a balanced literacy curriculum include the areas of understanding information, composing or writing and literacy and language aspects of learning. A balance literacy curriculum involves teacher directed and student centered activities. In middle school LAL programs teachers extend time to address the following components necessary for student enrichment, and according to the Smithfield School's position paper model these LAL areas are necessary for planning and instruction:

1. Comprehension: identifying importance; questioning; creating visual images; inference making; synthesis; fix-up strategies
2. Writing: Process (planning drafting revising and editing); on demand writing; writing from sources (developing and problems statement and utilizing research strategies); writing as tool (purpose audience and voice)
3. Literary Aspects: includes literary elements (themes, plots and settings); responding to literature and informational readings (personal responsibilities, creative and critical)

Gagnon and Collay's model holds social implications for addressing ways students actively learn. The constructivist approach can be adapted to all areas of
curriculum studies. This theory fits the reality of active processes in learning, problem solving and critical thinking skills. The development of this model is useful to teachers who are finding that the antiquated traditional roles in teaching are not being accepted by newly informed teachers, parents and students. As this model continues to refine its concepts and adapt to the many changes of educational paths, future aspects of this model rests in changing the educational beliefs of others and building a community of trust one step at a time. (Gagnon & Collay, 2001)

**Integrative Learning Theory**

Integrative learning approaches are techniques utilized by teachers who work with the same students and work together in teams with students who are active learners in determining themes, issues, and problems (Kingen, 2000). In a theoretical based article entitled “Mapping the Possibilities of Integrated Literacy Instruction”, Gavelek, Rapheal and Wang (2000) reveal that there is limited theoretical framework and minimal research regarding integrative literacy learning and instruction. Educational scholars interpret integration as being more authentic while encompassing more realistic tasks (Gavelek et al, 2000). Pearson (as cited in Gavelek, 2000) discussed the integration of language arts processes as it ranges across subject areas. By assuming the works of Pearson and other educational scholars, a conceptual map of three major integrative models and approaches are constructed (as cited in Gavelek et al, 2000). These three major conceptual models are “integrated language arts”, “integrated curriculum”, and “integration in and out of school” (Gavelek, et al, 2000 para.11). Integrated language arts is an “interdisciplinary” term that integrates reading, writing, speaking, listening and writing activities (Gavelek, et al, 2000, para. 13). Integrated curriculum involves the curriculums of subject areas,
and integration in and out of school connects the school with home and community and supports the concept of sociocultural language arts curriculums (Gavelek et al, 2000).

Despite the lack of empirical documentation as it relates to the benefits and challenges of the model, learning theorists try to define an inclusive definition of the model while also building upon the theoretical framework. They attempt to define integrative approaches past and present such as the use of life experiences for curriculum which does not add clarity to the language arts field (Gavelek, et al. 2000). According to educational theorist Dressel (as cited in Gavelek, 2000), the difficulty with the integrative literacy term is the complexities and ambiguity of the term; there are many educational researchers and writers who have attempted to define and conceptualize the term “integrated instruction” and still may have neither defined, critiqued or distinguished it concepts. Caskey (2002) notes that a lingering question for middle school is, “What is the fate of integrative curriculum since there is a strong push toward more curriculum standard reform for purposes of passing standardized tests?” Caskey (2002) theorizes several reasons for the difficulties schools have in implementing integrated curriculum:

1) Integrative curriculum can be demanding and time consuming to implement.
2) Teachers have limited experience in integrated learning instruction.
3) Teachers are not given enough time in school during classes and they are not able to reflect on their experiences.
4) Integrative learning takes extensive energy, commitment and administrative and parental support to implement.

Empirical studies on the three main integrative models of integrated language arts, integrated curriculum and integrated in and out of school, are clearly explained and
related to both theoretical and empirical literature. A schematic model helps to envision a clear and connective picture of the concepts and theories discussed. The three models presented provide knowledge and some solutions to the problem of applying meaning and conceptual context to integrated literacy instruction. Gavelek et al (2000), explores various themes, definitions and theory for the basis of their model and how it is best understood and applied in an educational setting. These conceptual models can easily be applied to educational, developmental, cultural and psychological disciplines.

There are specific empirical studies that support validity of the integrative model approach to learning. Morrow (as cited in Gavelek et al, 2000) conducted a comparative study on integrated language arts and found that students with diverse LAL interventions did better than those students exposed to a basal text only instruction, Bristor (as cited in Gavelek, et al, 2000), showed higher grades for students involved with integrated curriculums and Edwards (as cited in Gavelek, 2000) demonstrated the importance of home- school cultural practices in language arts.

The social significance of the model of integrated literacy instruction helps to provide additional platforms for teaching school subjects that will help improve achievement levels while enhancing cultural aspects of literacy. Future research in this area should address a continual refinement of the terms and empirical studies are needed to strengthen evolving integrative instructional theories. Competing models may be in the areas of phonemic awareness, socio-cultural learning models, and constructive and transformative teaching approaches.
Measurement of Language Arts Literacy Achievement

LAL is measured through district wide, statewide and national assessments. According to theoretical literature on assessment and learning, Wyatt (1996), discusses the need for the development of staff and indicates that when considering assessment strategies, theory must first be considered. Wyatt (1996) views a need to diversify the assessment process and discusses some alternative measures for assessment. Learning theory can be an important path toward learning through authenticity based on real life situations. This should be emphasized when establishing tests of authenticity and real life situations. Educational reform focuses on school children applying what they learn to daily experiences. Wyatt (1996) theorizes that the “use of school projects, demonstrations, portfolios and other types of documentation of student learning are becoming common assessment practices” (para. 9) This approach allows teachers to establish guidelines and criteria upon which each student is graded (Wyatt, 1996). Assessment much change with the models of reform. High stake testing drives curricular decision making for teachers who feel responsible for student performance on standardized tests (Brown, 2005).

National and International Measurement of Literacy Achievement

According to the National Center for Educational Statistics (NCES, 2006), the national assessment evaluation utilized for literacy assessment is the National Assessment of Educational Progress (NAEP). This assessment is the only national assessment on what students know about various subjects. This measure assesses student progress in the areas of LAL, math, science, history, civic, geography and in the arts (NCES, 2006). The national assessment governing board created by Congress supervises and sets policy
regarding the test. Test results are based on a sample of the population through a representative sample. The NAEP test obtains data from both public and nonpublic schools for grades 4th, 8th and 12th. Test content includes constructed response questions and questions that can be answered with a calculator (NCES, 2006). According to the NCES, there is a state form of this assessment with separate representative sampling and random selections of schools. Special education and limited English speaking students take the test with accommodations and modifications. The development of the assessment was completed through a widespread review by educators and involvement in steering committees, public hearings and reviews by educational and statistical scholars (NCES, 2006).

In a study conducted by the NCES (Donahue, Voelkl, Campbell, & Mazzeo, 1998), the NAEP reading assessment was given to a national sample of 4th, 8th and 12th grade students. The NAEP reading scale measures reading ability and student experiences at school and home. Average scale scores range from 0-500 and categories of “Basic”, “Proficient” and “Advanced” are used to interpret individual performances. The NAEP assessment tool included collections of stories, children’s magazines and books all, in their authentic form. The tests consisted of both multiple choice and open ended questions. The results of the assessment were mixed and revealed that 8th grade scores in reading on the 1998 assessment demonstrated higher functioning levels than the 1992 and 1994 assessments. The test also showed that for grades 4th and 12th there were increases but no net gains when compared to the 1992 scores. On the 1998 assessment, 31% of students in grade 4, 33% of students in grade 8 and 40% of students in grade 12 were at or above the proficient range. These results demonstrate that some gains in reading
literacy are being made nationally, however, according to the reports; there is still significant variability across ethnic and gender patterns throughout America (Donahue et al, 1998).

In an international study conducted by Ogle, Sen, Pahlke, Jocelyn, Kastberg, Roey and Williams (2001) for the International Association of the Evaluation of Educational Achievement (IEA), the reading literacy achievement of 4th graders from 35 countries were evaluated. This large scale qualitative study utilized The Progress in International Reading Literacy Study 2001 assessment tool which covers areas of reading passages from storybooks to international texts. This program is endorsed by international reading scholars with each country following internal instructed procedures, to ensure the validity of test administration and interpretation to students. To lessen threats to validity, quality control monitors were appointed to ensure that PIRLS 2001 standards were met (Ogle, et al, 2001). Researchers wanted to study four basic questions and areas 1) What are the 4th graders reading levels? 2) How do U.S 4th grades compare to others internationally? 3) Do 4th graders enjoy and value reading? and 4) How do reading habits and attitudes develop internationally? (Ogle et al, 2001).

The data collection process of international reading assessment, school and home questionnaires did answer the questions regarding student performance comparisons, levels of functioning and reading literacy attitudes. Study results revealed that U.S. students performed significantly above the international average of 500 on the combined literacy performance area, 19% of U.S 4th graders reached a 10% bench mark which demonstrated an ability to integrate ideas, make inferences, recognize text features, determine main idea and apply the information. England was the only country that did
better than the U.S. at this level with 24% of their 4th graders at the top 10% benchmark. Sixty-eight percent of 4th graders in the U.S reached the medium benchmark which required making elementary interpretations, locating specific parts of text and making observations. Ninety-eight percent of U.S. 4th graders reached the lower benchmark which required students to find details from various explicit literary information from text. Countries that surpassed the U.S in overall international literacy functioning and in overall reading literacy performance include these countries in order: Sweden, Lithuania, Hungary, The Netherlands, England, Bulgaria, Latvia, and Canada. The study also revealed that 35% of American 4th graders reported reading for fun everyday or almost everyday. Another study examined in the report by Ogle et al (2001), was the measurement of the IEA International Reading Study of 1991. The report studied the assessment of reading literacy test over time. This study was very similar to PIRLS 2001 study and tracked international reading over a period of time. The IEA in 1991 studied 30 countries using an assessment tool which contained 42 items and 6 reading narratives. However, the IEA did not do a follow up on this study instead they revised their assessment to incorporate updates of assessment goals and, according to the researcher Campbell (as cited in Ogle et al, 2001), this became the PIRLS 2001 assessment. The results of the re-administration of the new assessment revealed no observable change in the 4th graders performance on the combined reading literacy scale. Fourth graders in 5 of nine countries did demonstrate a significant improvement in combined reading scores. Sweden demonstrated a significant drop in performance since the 1991 administration.

This study eliminated international populations including, African, Middle Eastern, South American, and Asian Countries. Most countries evaluated appeared to be
from European nations. For the purposes of generalization and to be truly labeled as an international study and organization this study would need to include the global make up of the international world. Furthermore, this study demonstrated a lack of progress being made in LAL over a period of time. Programs may be needed to address this problem.

**State Measurement of Language Arts Achievement**

According to the State of New Jersey Office of Assessment and Evaluation, the Grade 8 Proficiency Assessment (GEPA) is a state wide test used in school in the State of New Jersey and measures gains in New Jersey core curriculum skills (NJ Department of Education: Assessment and Evaluation, 2005). The GEPA measures LAL, math and science. Special needs students and students under the category of limited English speaking are provided with accommodations and modifications.

In a longitudinal study conducted on state literacy performance levels (Donahue et al, 1998), the research compared state performances on the NAEP. The scores were studied from years 1998, 1994 and 1992. New Jersey did not participate in the study; however, neighboring states such as Connecticut and New York placed in the above average to average range in reading literacy skills when compared to 4th grade reading literacy NAEP scores. In 8th grade student scores, New York placed in the above average range. The reading scores of 4th graders in the states of Colorado, Connecticut, Mississippi, Kentucky, Louisiana, Maryland and the Virgin Islands went up between 1992 and 1998; however, in the states of Utah, Wyoming and The District of Colombia the reading scores proved lower in the 1998 NAEP administration for 4th graders. Fourth grade reading scores went up from the 1994 to 1998 administrations for the states of Colorado, Connecticut, Delaware, Kentucky, Louisiana, Maryland, South Carolina,
Virginia, Washington, and for the Department of Defense overseas schools. There was no significant decline in reading scores from 1994 to the 1998 reading assessment administration.

Factors Influencing Language Arts literacy Achievement

School Characteristics

Middle schools have been purposely planned to develop as rigorous, high performing institutions that respond to the academic, social and linguistic challenges that middle school age children face (Morocco et al, 2002).

In a quantitative study, which measured the effects of instructional conditions on student achievement, Berends et al (2002), address the concerns of confronting new reform school models and their effects in high poverty areas. The reform designs were compared in New American school (NAS) reform models and schools with no participation. In chapter six of the study report, Berends et al (2002) conducted two analysis of new reforms incorporated in the San Antonio independent school district. “The variables measured were diverse instructional methods on student achievement, school and classroom factors” (Berends et al, 2002, chapter six, para. 1). A data collection was conducted on 3,800 fourth grade students in 280 classrooms in 84 elementary schools in the district. Measurement was ascertained on the effects of student teacher and school characteristics on fourth grade TAAS (Texas Assessment of Academic Skills) reading and math scores. The second district analysis for a population of over 800 students in 63 classrooms was collected by teacher surveys, which measured teacher perceptions and practices. The students in this second analysis were also given a Stanford 9 open-ended reading assessment (Berends et al, 2002). Site visits, classroom
observations and student data span from 1997-1998. Dummy variables were utilized for student gender, race and ethnicity, student special education disabilities and gifted and talented programs, with eligibility for free lunch programs being used as a determinant for low income. The population included Latino Americans who were the highest ethnic group in the study, blacks came in second at 11% and whites were 5% of the sample.

The results of the study indicated that students in white and “other” category tended to perform better academically than the majority Latino population. Students in special education scored significantly lower than other students (Special education students who were not exempt from TAAS were below other student taking the test). Classes with higher male populations had lower average reading scores. After controlling for all student classroom and school characteristics, the authors failed to find a significant effect of implementation of schools with NAS reform models. Survey analysis revealed no statistically significant difference between student or teacher characteristics between the school district and survey sample (Berends et al, 2002).

Limitations of this study were the small sample size of 63 classrooms and a possibility that the reform like practices was not presented at a level to improve student achievement.

Demographics

According to the NCES’s, School District Demographic report for the State of New Jersey (NCES,2005), The states largest city Newark has a total population of 273,546 residents. There are approximately 42,033 students attending the city’s public schools. The number of families below the poverty line rests at 26,270 and the number of families above the poverty line is 65,095. Newark, New Jersey has approximately 75
schools with a total of 42,033 students (NCES, 2005). The school district of Newark allocates approximately $22,679 yearly per student costs (NCES, 2004a). Paterson, the third largest city in New Jersey, has a total of 36 schools in the city. There are approximately 27,734 students and 2,419.6 teachers in the city’s schools. Paterson is considered to be a large urban city with a population of approximately 165,000 (New Jersey Department of Education, 2004). The number of families below the poverty line for the year 1999 was 6,475. The number of families above the poverty line was 35,205 (NCES, 2005). The school district has approximately 30,000 students. The district allocates approximately $17,056 yearly per student cost (NCES, 2004b).

**Facilities**

The School facilities in many urban districts lack adequate physical conditions and repair (Schneider, 2004). In a study conducted in New Jersey on public schools physical conditions and facilities, principals were given surveys to rate school physical conditions. Findings revealed that a substantial number of principals believed that New Jersey schools were not up to standard and that this affected teacher retention and recruitment. Eighty percent of principals believe that schools were educationally adequate institutions. Many of the principals believed that their facility training was inadequate to their training received in other areas of their job. Regarding the issue concerning equity, principal surveys demonstrated disparities between higher income and poorer school districts, in that poorer districts in urban settings appeared to have more problems with obtaining repairs (Schneider, 2004).

In minority school districts in urban settings, the burden of failure has disproportionately affected African American and Latino populations, disabled students,
and students who have not mastered the English language (Manpower demonstration Research Corporation, 2002). Minority school districts often suffer from high drop out rates, inequality, less stable and qualified teaching staff and a positive relationship between social poverty and low achievement levels (Orfield & Lee, 2005; House, 2005; Sanders, 2000).

Earthman (2002) reported on the effects of school facilities on student achievement and teacher effectiveness. In the quantitative measure Earthmen (2001) measured variables such as school conditions including school overcrowding. The result of his study reported somewhat different results from a Darling–Hammond study (2000) which revealed weak significant results between the variable of class size and student achievement. Crowded school conditions also have an effect on teacher instruction and student teacher relationships. Earthman (2002) revealed that, “overcrowded classrooms can impact student learning and teacher efficacy” (p. 10). There is also some indication that smaller classes help the management of discipline and benefits both student and teacher functioning. In addition, minority schools that employ smaller pupil classes show a higher increase in student achievement percentiles.

Ability Levels

According to the testing data results of the New Jersey Department of Education Report card (2004), 54.4% of 8th grade students in the city of Paterson, scored at the partial proficiency range and 44.9% of the students scored at the proficiency range in LAL for the 2003-2004 school year. The state average was 28.3% partial proficiency and 66.3% full proficiency in LAL (New Jersey Department of Education, 2004).
On the Math portion of the GEPA, students in the Paterson School district scored 61.6% partially proficient and 33.1% proficient, compared to state average of 38.3% partially proficiency and 41.7% full proficiency (New Jersey Department of Education, 2004). Students with disabilities and low achievement levels will benefit from instructional strategies that address the engagement of students, student monitoring and self assessment of progress, improved school climate and safety precautions as well as one to one reading strategies (Atkinson, Wilhite, Frey & Williams, 2002).

**Ethnicity**

A school directory of Newark (Local School Directory, 2007), reported that the district’s schools represents 59% African-Americans, 32% Latino, 8% Caucasian and 1% Asian/Native American. According to documentation from the New Jersey Department of Education (2004) the Paterson Public Schools ethnic percentages are as follows: 54% Hispanic, 38% African American, 6% White, 2% Asian, and less than 1% Native American.

Donahue et al (1998), studied the racial and ethnic breakdown of reading literacy scores on the NAEP 1998 reading assessment demonstrated that white and Asian 4th graders and 8th grade students scored higher that African American, Hispanic and American Indian 4th grade student’s assessed. At the 8th grade level, white and Asian students scored higher than African American, Hispanic and American Indian students. At a twelfth grade level the study showed white students with higher scores than African American, Hispanic and American Indian students, with Asian 12th grade students scoring higher than African American and Hispanic peers with Hispanic 12th graders scoring higher than their African American peers. African American 4th grade students...
did go up from 1994 to 1998 but not enough to close the gap between ethnic groups. In grade 8 the scores of both whites and Blacks were higher in 1998 than in 1994 and 1992. At grade 12 the reading scores for Whites and Hispanics went up between 1994 and 1998.

There was no significant change in the scores of Asian and American Indians in 1998 when compared to the 1992 and 1994 administrations.

**English Proficiency**

According to the New Jersey Department of Education Superintendent School report on the Paterson public schools, students speak a total of 25 different languages (Department of Education: School Report Card, 2004). The city schools provide bilingual education for limited English speaking students, and according to statistics from the New Jersey Department of Education, and according to the New Jersey Department of Education bilingual education report, every three years school districts must provide a plan of operation for working with Limited English proficient (LEP) students (New Jersey Department of Education: Bureau of Bilingual Education, 2004).

Gunn, Biglan, Smolkowski and Ary (2000) conducted a study which evaluated the effects of reading in students from kindergarten to third grade. The purpose of the study was to determine the benefits of supplemental instruction concentrating on decoding skills and phonemic awareness in recognizing reading words. The study also evaluated to what extent these skills contributed to the acceleration of oral reading, vocabulary and comprehension skills. The study examined the teaching of Spanish speaking students' English language decoding reading skills.
The research design for the study consisted of an experimental and control group design. Students for the study were first chosen through a screening process using indicators of Basic Early Literacy Skills and through an early oral literacy skill process. There were a total of 256 student participants which included 158 Hispanic students and 98 non Hispanic speaking students. The students were randomly selected to be included within the experimental and control groups. The intervention consisted of four components: supplemental reading instruction with reading mastery or corrective reading, parental skills training and intervention for social behaviors. Students were assessed in the fall and spring of two consecutive years using the Woodcock-Johnson Test of Achievement (WJ-RACH). The reading skills were assessed three times, in the fall (time1) and spring (time 2) of the first year and in the spring of the second year (time 3). No detailed information regarding reliability and validity was included for this measure. However another assessment tool, The Aggressive Scale of Teacher Rating Form (TRF), a child behavioral checklist was utilized and indicated a test, retest reliability of .91. The rating scale (results were not included in the report) was used to determine the effects of the reading program on student behavior.

The results of the study showed that the students who received supplemental instruction scored significantly better on word attack skills at the time 2 (first year spring) stage. The student in supplemental instruction also scored better in word attack, oral reading, word recognition, fluency, vocabulary and reading comprehension at the time 3 stage (second year spring). There were no differences indicated on the effectiveness of instruction on function of Hispanic student’s level of English proficiency or between gender which represent implications for further research.
In summary, this study indicates a need for supplemental time for remediation in teaching students with disabilities and diverse needs including limited English speaking students. It signifies the importance of early interventions that will help students transition through the LAL challenges in the middle schools. Additional time spent on the remediation of language arts difficulties will help to improve aggressive behaviors that may be due to a lack of reading ability.

**Teacher Qualifications**

According to the New Jersey Department of Education (2004) teacher licensing and certification in New Jersey documents indicate that the *alternate route teacher certification program* in New Jersey provides newly hired non-certificated teachers with an opportunity to obtain their teacher certification through an alternative route which includes mentoring, training and development along with consistent evaluation and monitoring. Several empirical studies have addressed issues concerning teacher quality.

In a critical analysis conducted by Rice (2003), a teacher’s characteristics may be able to predict their effectiveness as teachers in certain areas. The author found that there are many inconsistencies regarding teacher quality and effectiveness and that study findings were generally inconsistent. It is suggested by the author that those who write policy (Rice, 2003) too often sidestep the issues of the inconsistencies in teacher quality studies.

Darling-Hammond (2000), in a 50 state survey including government policy, case studies of school staffing surveys and the NAEP assessment analyzed the effects teacher quality and other school characteristics have on student achievement. The author
utilized a mixed design utilizing quantitative and qualitative analysis. The issue relative to this study is the need to determine what educational factors influence student achievement. A multivariate correlation of student variables relating to demographics was completed and the following correlations were reported from the Darling-Hammond (2000) study:

1) Student characteristics such as poverty and non-English speaking and minority characteristics negatively correlate with student outcomes. One correlation example being the less socially involved the student was the less likely their teachers were fully certified.

2) Student characteristics did not show a significant correlation when comparing state per student expenditures or teacher salary schedules, with the exception that salary levels show a positive correlation between teacher’s salary and minority school numbers.

3) Per student spending also showed a positive relationship with student achievement in fourth grade reading scores but no math. This may be due to the focus on school expenditures that directly affect reading programs and classroom sizes.

4) Other areas of variable measurement including student-teacher proportions, size of classrooms and the numbers of school staff demonstrated weak and small significant relationships to student outcomes and achievement based on state level documentation.
Implications for this study reveals that educational statues may want to invest in quality teacher education and development, which can make a difference in quality educational practices.

Study limitations reveal that the NAEP, used to measure outcome, could not measure the perceptions of parents, teachers and students within the schools. Another limitation of this study was that the data in the results were aggregated at the state level rather than a local level (district or school) which allows for interpretation differences of results.

Another study in response to the “Call to Action“ speech to improve teacher quality in schools and supported by the NCES, Lewis, Parsad, Carey, Bartfai, Farris and Smerdon (1999) used a fast response inventory to quickly report data regarding key educational issues. This inventory was designed under the approval of the Department of Education analyst, planners and decision makers. The tool includes 3 pages of questions which normally takes a 30 minute response. The collection data process was conducted over the spring of 1998 to a national sample of teachers of all disciplines including self contained settings. The findings of this study did provide answers to variables of degrees and certifications held, professional development and training, teaching assignments and teacher teamwork. The study revealed that half of American teachers believed that they were prepared to meet daily educational challenges, in technology integration, student diversity, utilization of assessment techniques and in implementing state curriculum and performance standards in language arts and other areas. The other half of the sample felt unprepared in one or more of these areas of functioning. The study also revealed that most educators had bachelor’s degrees with nearly half holding masters’ degrees. Many
newer teachers with 1-3 years of service held emergency or temporary certificates. The number of teachers teaching out of their field was greater in grades 7th and 8th than in grades 9th through 10th in language arts areas. Therefore Language arts and English teachers in the middle school are more likely to be teaching out of their field (Lewis, et al, 1999). This report is the first of many to be completed by the NCES which addresses the issue of teacher challenges and their perceptions of readiness when it comes to learning and environmental issues in education (Lewis et al, 1999; Darling Hammond, 2000; Rice, 2003)

**Instructional Strategies in Language Arts Literacy Achievement**

LAL can incorporate significant difficulties due to a lack of classroom strategies, inadequate teacher knowledge for enhancing reading practices, a lack of instructional time, and student beliefs that they are in fact poor readers (Schunk 1992; Afflerbach et al, 2000; Wyatt, 1996)

Theoretical literature on student learning strategies also address Cambourne’s natural learning theory (Kingen, 2000). In 1998, Cambourne theorized that there are certain conditions that help children to become more literate. His focus is on whether teachers are able to replicate the natural setting of a student’s environment. A student must be able to learn the natural language acquiring abilities they have naturally developed to move on to more challenging literacy processes (as cited in Kingen, 2000). More specifically, the constructivist theory describes ways students can build new ideas and concepts based on their past and present knowledge (Bruner, 1997).

According to the constructivist views, instruction by teachers should include experiences that allow children to learn, and be easily understood, and student and
teacher instruction should allow the student to take their learning beyond what is studied in the classroom. (Bruner, 1997). The Integrative approach is highly complex and requires time for proper delivery of lessons. For instance, during extended blocks of time for children in language arts classes, there is enough time to address content discussed in other courses and both teachers and students can get to know each other better (Kingen, 2005). The complexities and importance of traditional language arts schedules do not allow teachers working on writing, spelling, grammar; vocabulary and language skills enough time for instruction; therefore, these subjects need to be taught beyond the usual 50 minute time period (Strauss & Irvin, 2005). In addition, there are numerous problems and concerns with traditional scheduling ranging from segmented portions of time from one subject to another which can lead to disorganization and incomplete assignments.

The importance of supplemental and extended time instruction for LAL skills is addressed in a few studies in classroom instruction utilizing constructivist approaches not only addressing LAL instruction, but also science and mathematic curriculums (Applefield et al, 2000; Moussiaux & Norman, 1997; Gagnon & Collay, 2001). In a empirical qualitative study conducted by Moussiaux and Norman (1997) the researchers measure teacher and student perceptions of constructivist classroom approaches to learning. The literature review included theory and empirical studies on structural change and school reform. Propositions and themes address the importance of improving teacher knowledge, instructional skills, practice, professional values and beliefs, commitment and empowerment to do an effective job. The study was two-fold in that it examined elements of systematic reform and constructivist classroom practices. The theoretical framework outlines a need for systematic reform studies to address future
educational needs. There is also a need to investigate current constructivist practices and types of classroom learning. The research questions presented in the study concerned teacher and student frequency and comparison of reports of constructivist practices being used in the classroom, differences of responses in both science and math classrooms, and the differences of responses of teachers at various levels (elementary, math and High school setting) relative to the use of constructivist instructional practices.

A study by Moussiaux and Norman (1997) presented a random selection of 54 schools from urban areas. The sample resulted in a total of 1,080 fourth, eighth, and tenth graders. A two stage teacher sampling process was also included consisting of a random tier (10 elementary schools, 5 middle schools and 3 high schools) and convenient sample process of math and science teachers resulting in 570 teachers who participated in a survey. A total of 289 teachers returned a completed questionnaire and 862 questionnaires were returned from the student sample. A response rate of 51% for teachers and 80% for students were evident. A Likert type survey was presented to both teachers and students, with 33 teacher items included and 39 items for the students. Parallel specific surveys items were chosen for each set of participants. The survey was utilized to measure the outcome variable of teacher and student perceptions on the constructivist learning approach (causal variable). The teacher survey utilized for this study had an internal consistency reliability coefficient of .91 and the student survey had a internal consistency reliability coefficient of .78. Data collection procedures for this study were brief and included no indication of measures to ensure data quality or to eliminate contamination of data collected. Research findings did answer most questions; however, researchers could not make any student teacher comparisons to determine a
relationship between their perceptions because the researchers could not link the student with his or her teacher. The use of descriptive univariate statistics of frequency distributions and calculation of percentages were used to determine frequency of constructivist practices.

Moussiaux and Normans’s (1997) interpretation of findings reveal that 1) Constructivist practices encompassing problem solving and cooperative group learning are used in the classroom 50% or more of the time except during computer work in science and mathematics; 2) That students are not being passive learners but actively involved in their learning and constructing meaning based on their experiences; 3) Teachers in elementary and middle school grades utilize constructivist approaches to learning more than high school teachers; and 4) There are both students and teachers who implicate constructivist views and practices within the classroom setting.

The results of this study clearly indicate the extent of growth and need for reform in schools. Future research needs to focus on educational instructional approaches in additional areas of learning, including language arts constructivist strategies. Additional follow up studies might address what is needed as intervention to help teachers with skill building and motivation to develop stronger skill and knowledge base relative to constructivist education and teaching methods. More importantly research will need to be enacted that focuses on ways to change in order to accomplish a greater influence on upper grade teacher’s knowledge of the curriculum and the need to change their instructional practices.

Constructivist learning and teaching demonstrates a need to change teacher beliefs about changing and reforming traditional ways of teaching, learning and determining
what instructional strategies work best in student academic development. There may be a multitude of strategies for any particular topic; however, students must be provided with ways to connect, integrate and expound on new learning techniques (Applefield et al, 2000; Moussiaux & Norman, 1997; Gagnon & Collay, 2001).

**Block Scheduling Models in Schools**

Block scheduling is a concept evolving from educational reform which has strongly influenced high school scheduling. Since the 1980's (while trying to change the face of educational movements) there was a focus on examining the concept of adequate time for productive learning; and in the 1990's the issue of extended time became a much more serious focus (Shortt & Thayer, 1999). Several models depict the time allotments for block scheduling. According to Walker (2000), these models can be implemented on a daily or alternate day basis. The most common blocks are as follows:

1) **4X4** block consists of four classes daily, which last approximately 90 minutes each per day, and in the next session four new classes are given.

2) An Alternate block (AB) is a plan that allows students to enroll in 7-8 courses per semester; however, the courses are presented on alternate days with 90-minute sessions given every other day all year long. Also known as odd/even days schedule.

3) Flexible block has several options. It is mixture of block and traditional classes. The class time varies depending on the day of week.

Block scheduling is the process of reorganizing the school day longer than the traditional 50 minute periods. Traditional scheduling is the most popular form in America which designates a six, seven, and eight classes a day schedule (Brasel et al, 1999). Block scheduling consists of models or scheduling plans that can be incorporated into the school schedule. These models consist of the 4X4 scheduling plan, alternate day block
and the daily two large blocks and a two standard block schedule program (Mattox et al, 2005). According to Carroll (1994), traditional forms of scheduling leads to an atmosphere that is hectic, unfriendly and inefficient for learning.

In previous high school empirical studies, the pros and cons of block scheduling were introduced. A major challenge of block scheduling is accommodating for change within the schools. In addition, changing to a block schedule should allow time for preparation within a two year window of time according to the Northwest Regional Educational Laboratory (Irmsher, 1996).

**Block Scheduling Theory**

One solution that has mainly been utilized at the high school level is the extended time approach to learning. There is evidence (Goodlad, 1984) that demonstrates that literacy teaching strategies will require additional time for classroom instruction and to foster needed learning strategies that help meet student needs. Goodlad (1984), revealed “availability of time sets the basic framework of learning after, how that time is used, becomes the significant factor in students’ accomplishments” (p.97).

Carroll (1994), in his analysis of the Copernican plan theory, revealed that this theory derived from the ideas of a 16\textsuperscript{th} century scholar known as Nicolaus Copernican, and based upon his knowledge of the earth’s planetary movements. Thus, the Copernican plan as it relates to educational scheduling, changes the way teachers utilize time. It supports the extended time models of 90 minute, two hours, and 4 hours per class a day. In addition, the classes meet for only part of the school yearly term. The advantages and rationale for the Copernican plan allows for better student teacher relationships, and
reduces the load on teachers and students with less course work in a day for students to learn and teachers to prepare (Carroll, 1994).

Theories on block scheduling indicate that the procedures allow for additional time to learn provided more time is allotted for in-depth critical learning and provide the school climate of higher student morale due to improved grade performance (Canady & Rettig, 1999; Center of Educational Reform [CER], 1996; Lindsay, 2005). The CER (1996) supports the theory that block scheduling may not allow for more class time due to the fact that teachers have to hold students’ interest for longer periods of time. The major points in contrast to theories on block scheduling is that extended time may be used up by using other methods to maintain the students’ interest and teachers who utilize block scheduling must be well trained to effectively handle longer class periods (CER, 1996; Lindsay, 2005). Another issue addressed in an article entitled “Scheduling on the Block” by the CER (1996) refers to the theory of more in-depth learning related to block scheduling. According to the article, there may also be some concerns whether block scheduling allows more time for in-depth intensive learning. The AB schedule model which is held on alternating days (alternate day by day) may cause students to lose daily task and skill reinforcement and drill needed on a daily basis. In addition, incidence of cramming may also be of concern when implementing a 4X4 block scheduling models which alternate by semester (CER, 1996). Quite often in block scheduling study halls are eliminated and busy students may not have time to complete assignments (Wisconsin Educational Association Council [WEAC], 1996). Academically at risk populations such as those with attention deficits, behavioral concerns and learning problems may benefit
more from a schedule with shorter periods that shift from one subject to the next and one
that is less confusing and more consistent.

A major contrast to the theory of block scheduling as a LAL strategy addresses
the issue of whether block scheduling improves student morale and actually increases
achievement levels. The CER (1996) points out that although block scheduling may give
a push to at risk children’s achievement and morale in allowing for more flexibility in
instructional strategies, it is still unclear regarding the effects on morale and grade
advancement in students who work at or above the mean. Furthermore, academically
talented students may not adapt well to changes made to a schedule where they have
maintained success and this may be a cause of some concern (WEAC, 1995).

Canadian researchers, Bateson (1990) and Raphael, Walstrom and McLean
(1986) conducted quantitative studies on block scheduling and found that in traditional
full year scheduling students have outperformed block scheduling students in science and
math achievement tests. In support of these findings the CER’s (1996) research states
that there is little concrete evidence that block scheduling has fostered significant gains in
achievement in the America as well. This article gives clear measures and examples of
applications in the classroom utilizing block scheduling, and emphasizes the uses of
teacher training and development before block scheduling implementation begins.

In support of block scheduling Canady and Rettig (1999), both found that AB
scheduling permits more time for lesson reviews and end of class discussions than the
4x4 methods. A critique of both theoretical and empirical data is described in Queen’s
(2000) critical analysis in his article “Block Scheduling Revisited”. According to Queen
the 90 minute block scheduling plan is usually given in 4 (90 minute) blocks. However,
Queen states that the classes are often reduced to a 60 minute classes due to poor teacher monitoring and training.

**Effectiveness of Block Scheduling Models and Achievement**

The concept of block scheduling as a form of learning reform is quite popular in high school settings (Shortt & Thayer, 1999). Studies on block scheduling models and achievement have consistently examined the effects of block scheduling as it relates to academic performance and extended time learning for adequate skill development (Shortt & Thayer, 1999).

In an empirical study conducted by Deuel (1999) entitled “Block Scheduling in Large Urban High Schools Effects Academic Achievement, Student Behavior and Staff Perceptions”, used a population from 23 high schools with 13 of the high schools utilizing a traditional seven period regular schedule while 10 schools utilized a block scheduling system. The study, conducted in Broward, County Florida, examined the impact of a change to block scheduling after a 2 year period. Data were collected from quantitative surveys filled out by teachers and guidance counselors, and interviews were conducted with principals. The teachers and guidance counselors in the study were chosen through a random selection process which resulted in surveys distributed to a sample of 100 teachers and 30 guidance counselors. An interview process was arranged for the principals at 5 of the 10 block scheduling schools. A total of 49,000 Broward County High School students participated in the study. Sampling was completed through non-probability convenient selection of students and staff in the district. The study’s research questions asked: 1) Would the benefits associated with block scheduling be consistent? 2) Will benefits and problems develop after two years on the new block
schedule? and 3) What are the staff perceptions regarding block scheduling as the process becomes more prevalent in the school setting?

The study consisted of a pre and post test mixed methodology comparative design on the independent variable of block scheduling and dependent variables of student achievement, student behavior (daily attendance and suspension rates), teacher perceptions and satisfaction. A contextual variable of advance course placement was measured. A case study methodology approach was utilized to measure the impact of change on school staff.

Mean values were computed on pre and post test data with p-values to determine significance. The results of the study revealed that students in block scheduling classes earned more grades of “A” and less C’s D’s and F’s. Higher grades were reported in advance math placement courses due to teachers spending additional time reinforcing skills and concepts. The student behavior variables of daily attendance in school and out of school suspension rates showed no statistical difference in block or non-block schools. The counselor survey demonstrated that 41% of the school counselors indicated that student discipline difficulties decreased in the schools with 50% of counselors reporting a decrease between classes. The survey also revealed that 93% of teachers have implemented new teaching strategies during the block scheduling while 86% of teachers stated that they increased the number of learning activities. Lastly, 80% of the teachers perceived that they would choose to remain with block scheduling.

The strengths of this study were in the large population of students and the sample of schools used in the study. The research report was clearly written and easy to comprehend and an attempt to measure what the study set out to do was accomplished.
However, results should not be generalized due to limited information regarding internal and external validity factors. In addition, there was no mention of the pre and post test grades used in the comparisons.

A second empirical longitudinal ex post facto study completed by Mattox et al (2005), studied the effectiveness of Block Scheduling on math achievement over a period of 3-6 academic years. Theoretical literature has indicated the shortage of research on middle school block scheduling and a need for more verification that block scheduling results in positive student achievement and behavior. The purpose of the study was to examine the effects of block scheduling since little is known about the effects at the middle school level in the areas of math. The theoretical literature supports the extended length of course times that block scheduling emphasizes. The literature examined the themes of a 1) Lack of block scheduling research in the middle schools 2) Impact of time on student achievement, and 3) Middle schools utilizing traditional and block scheduling are alike and unlike in many ways. The study’s purpose was to explore the effects of block scheduling on math achievement scores of 6th grade students. The theoretical review also discusses the theories of block scheduling enhancement of student achievement and that block scheduling increases student participation. Most of the theoretical and empirical studies conducted by Mizell (2002), Alexander and George (1981), Queen (2000), Shortt and Thayer (1999), were included in the literature review on block scheduling. No opposing studies of block scheduling were described in the review of literature for this study.

This empirical study used a population 8,737, sixth graders in middle school in suburban and some rural settings of the southeast. A mixture of ethnic groups was
Achievement assessment of criterion referenced yearly math tests were the dependent variables studied. A new developmental scale was created in collaboration with the school district and a psychometric laboratory used to determine growth patterns. This developmental scale consisted of a scale score range of 100 to 200 with an expected score of 155.88 and a standard deviation of 10.25. Six equivalent forms of the test were developed.

The reliability and validity of test measures were well established using previous measures from a 1996 Sanford assessment of North Carolina yearly test (as cited in Mattox et al., 2005). Regarding internal consistency, the authors reported coefficient Alpha values ranging from .90 to .96 for the measures calculated. For content validity, all items were written and reviewed by state teachers with alignment with the states standard course of study.

The author’s findings based on the implications for presenting block scheduling in schools were discussed and included. The finding stated that block scheduling allows students to take more courses, engage in longer class periods for classroom discussions, inquiry and teaching strategies, decreases disruptive behavior, and allows more time for curriculum diversion and teacher preparation time.

In the discussion, the authors, Mattox et al. (2005), clearly interpreted their findings based on the results. Implications for presenting block scheduling in schools were discussed and included the benefits of the approach.

Mattox et al. (2005) reported limitations to the study such as the lack of concentration on other outcomes other than student mathematical achievement, and a
need for additional factors needing to be studied to determine the causal effects of the rise in student math achievement amongst the student population.

The study’s authors presented an array of further research ideas. First, they state that replication of this study on the effects of block scheduling in middle schools should be implemented in urban, rural, inner city and suburban areas. Secondly, the employment of block scheduling in other content areas should be pursued. The authors also state that further research should exclude the characteristics within block scheduling such as students taking additional courses, spending longer class time, less time transporting from one class to another, and teacher added time for student relationships and individualized instruction, that also can contribute to gains in student achievement while studying the effects of block scheduling.

**Effectiveness on Block Scheduling Models and LAL Achievement**

Nichols (2005) presented an empirical quantitative study for the purpose of examining the effects of block scheduling on English and language arts at the high school level. Referring to the national report, “A Nation at Risk”, presented by the Commission on Excellence in Education (U.S. Department, 1998), this document expressed serious concerns about the state of public education. Nichols (2005) uses block scheduling to build his theoretical framework which relates to his hypothesis that each school that experiences block scheduling reform will be affected by the experience. Nichols (2005) described two areas of needed improvement within schools; school achievement and the effective use of school time. Nichols’ (2005) three research questions were: A) Will the GPA scores in English and language arts increase when block scheduling is implemented? b) Were there any affects on GPA of high and low income students and c)
Were there any effects on GPA of minority and majority students when block scheduling was implemented?

Nichols' target population came from a large urban school district using data from 5 high schools for the study. This data was ascertained from an ethnically mixed group of students. The study consisted of a convenience sampling of students in 5 high schools in an urban city with structured block scheduling programs. Nichols utilized ANOVA's to determine significance of the dependent variable (block schedules) on the independent variables (student GPA's) amongst a varied group of students.

Study findings (Nichols, 2005) revealed that conversion to block scheduling did, in fact, increase the scores of student performance in English content areas. These findings did not relate to previous study findings on this topic. The study's null hypothesis, block scheduling will not effect school performance was supported due to a slight overall change in academic scores and a significance found for English classes only. Nichols' limitations in this study conclude that qualitative gains in student achievement from block scheduling programs could not be addressed with the data collected. The author also states that it is debatable as to whether a teacher's grading is truly a valid measure. Student academic achievement gains from blocks scheduling issues were not addressed in the study and may be indicators for further research. The author stated that issues based on, teacher consistency in instructional methods and strategies, evaluative measures, and state standards were also not addressed.
Influence of Contextual, Intervening, and Mediating Variables on LAL Achievement

Student Perceptions of Block Scheduling

Self efficacy as it relates to block scheduling reveals differing opinions or perceptions of students regarding a particular strategy or experience (Bandura, 1994; Brown, 2005; Deuel, 1999; Slate & Jones, 2000). In an empirical study by Slate and Jones (2000), a one week trial of block scheduling was implemented for school administrators to consider block scheduling reform. The review of the literature built the framework for the importance of this study. The researchers theorize that little is known about the actual extent program participants believed they were accomplishing worthwhile efforts. Slate and Jones (2000) refer to this process as “social validity”. The research questions for the study were: “a) What difficulties and advantages do students believe are associated with block scheduling? b) What instructional behaviors do students perceive in teachers during block scheduling? c) To what extent do students believe block scheduling is an expectable alternative to traditional scheduling and to what extent do they prefer block scheduling to traditional scheduling? d) To what extent do the findings vary as a function of student’s grade level, gender and ethnic background?” (P. 56).

The students in the study were surveyed through the use of questionnaires. The low socioeconomic school setting implemented a trial of a 4x4 plan of block scheduling for a week and the students were given closed ended questionnaires rated by a 5-point rating scale. The population was a convenience non probability sample of 1,205 students which included an ethnic mix of participants. The questionnaire utilized in the study was given to the students during their regular class time. Students were told that they were
filling out the questionnaires to determine whether to permanently implement the block scheduling program. The questionnaire required personal information such as grade level, gender and ethnicity, their ten possible difficulties, six possible teacher behaviors, and their belief in whether block scheduling was a good alternative to traditional scheduling and what was their preference.

Percentages from a 5 point rating scale were obtained. No information relative to reliability of validity to collection tool was indicated in the study. The questions were next analyzed as to the differences between various subgroups such as differences in grade, gender, ethnicity (independent variables). The data was also measured by acquiring mean scores and standard deviation, and p-values were used to determine significance on the effects block scheduling program (independent variable) on student perceptions (dependent variable). The means of data collection was not clearly described and neither were measures used to prevent contamination and biased results.

Study findings revealed that the dependent variable of attitudes toward block scheduling varied and that high school seniors, females and African-American students (independent variables) were the major groups preferring traditional forms of scheduling. The results also revealed that senior students were the sole group who believed that block scheduling was an unacceptable alternative to traditional forms of scheduling. According to Wolfe (as cited in Slate and Jones, 2000) programs that lack social validity (perceptions that the program is beneficial) will fail. Slate and Jones (2000) state an array of limitations such as the lack of generalization due to the small numbers of schools and participants used in the study. Slate and Jones (2000) also state that they could not control teacher block scheduling training sessions or instructional materials used in the
study. In addition the study responses could only relate to the one week trial of block scheduling. Slate and Jones (2000) noted that African American students indicated that block scheduling helped with behavioral concerns (dependent variable) and to enhance academic achievement (dependent variable), however they still preferred traditional scheduling over block scheduling reform. According to the Slate and Jones (2000), this reason needs to be investigated further. The authors point out that this study’s application to social validity demonstrates that high school students’ reactions to changes in the school environment are not specifically related to student achievement levels in the high schools. Therefore, high school students’ academic achievements may not be a major emphasis, and their ideas regarding reform may not be as strong as an adults’.

In a longitudinal study of teacher’s perceptions regarding the advantages and measurable outcomes of a 4X4 block scheduling program. Stokes and Wilson (1999) compared teacher perceptions during the 2\textsuperscript{nd} and 3\textsuperscript{rd} year of block scheduling implementation. This comparative study presents literature that theorizes that there are: 1) Advantages to block scheduling 2) 4X4 allows for more classes to be taken during the year 3) Block scheduling increases student GPA and honor roll potential and 4) perceived advantages of block scheduling continues to have positive affects on faculty and administration. The gap in the literature demonstrates the uncertainty of the measurable outcomes associated with block scheduling, its major advantages and teacher perceptions of the strongest measurable outcomes. This study’s research questions regarded teacher perceptions on the effectiveness and advantages of block schedules.

Two research questions formed the basis for the research and data analysis:

“1) What do teachers perceive to be major advantages of block scheduling?”, and 2)
A deliberate sample was used, and schools in the study had to be participating in a block scheduling program. To eliminate bias of previous collective data, Stokes and Wilson (1999), selected four new schools for the study. The convenience sample consisted of two high schools, one city and one county from separate school systems. There were one hundred forty seven teachers who accepted the invitation to participate in the study. The sample was predominately Caucasian; however, minorities were also represented in the sample.

A two phase, multiple groups comparative research design was used in this study. The first part of the study focuses on the effectiveness of block scheduling and the implementation and maintenance of this program. The second portion of the study focused on teacher perceptions of the advantages and major outcomes of block scheduling. The groups compared were two schools recently involved with block scheduling within the past year and two schools within the second year of a block scheduling process. The data collection questionnaire was developed by the researchers and consisted of a three section Likert scale with numerical values assigned to the participants' responses. Data collection was the same as in the previous study; however, the more recent study was based on a survey instrument with descriptive and Likert type items.

The validity and reliability of this tool was confirmed through a questionnaire item analysis. The initial field test of the instrument was completed by a separate set of researchers who were experienced in developing questionnaires. The researchers provided recommendations for restructuring items and eliminating certain items in the
questionnaire. Teachers examined the questionnaire during the second phase of review. An analysis of variance was calculated on the means of each survey question. T scores were completed between two groups of schools and differences were compared between schools with 3 years of block scheduling experience and those schools with four years experience. Chi Square values were used to determine differences of overall initial and current teacher perceptions. A data analysis utilizing means from 31 items using a likert scale measurement was utilized. An analysis of variance was calculated to determine differences between schools, and a .01 level of significance (Pearson chi square) was calculated to analyze the information.

The first half of the study sought to determine the effects of block scheduling with the element of time as an intervening variable. In an attempt to determine whether there is a relationship between teacher opinions of block scheduling and the subject areas they taught, three null hypotheses were tested: 1) No significant relationship exists between teachers initial perceptions of block scheduling and block scheduling effectiveness, 2) No significant relationship exists between subjects areas and teacher perceptions after extended period of block scheduling, and 3) No significant relationship exists between years of teaching and block scheduling opinions (Stokes and Wilson, 1999).

The findings relative to the null hypotheses indicated that there was no significance between subject areas educators taught and their beliefs regarding block scheduling. There was no significant relationship indicated between years of teaching and block scheduling opinions. Regarding the questions concerning block scheduling and major advantages, teachers perceived that there was one advantage, “students had more opportunities to gain more credits toward graduation” (Stokes & Wilson, 2000, p.
10) as the real advantages when comparing block scheduling to traditional schedules. Regarding the variable of block scheduling and measurable outcomes, the two groups involved showed no significant difference in ratings on the increase of standardized test scores, drop out rates, percentage of failures, discipline and attendance rates. Future research should examine teacher perceptions of block scheduling over a longer period of time. In addition, more research should be conducted to clearly determine a significant increase in the measurable outcomes of block scheduling.

The independent variables in the study were teaching experience and literacy areas taught. Study interpretations supported by other empirical studies in support of and against the statistically significant hypothesis were the studies of Khazzaka, Queen, Algozine, Eaddy and Staunton (as cited in Stokes & Wilson, 2000). The Khazzaka (1997), Queen et al (1996) and Staunton (1997) studies addressed teacher perceptions regarding classroom strategies utilized. Teachers in this study responded to questionnaires indicating that the extended time allowed them to incorporate more strategies into their lessons. The studies also measured student performance and perceptions regarding block scheduling. The Queen et al study (1996) revealed significant results in improved student academic performance. The Khazzaka and Staunton research reported that a majority of teachers in the study believed their students improved academically with the implementation of block scheduling.

Teacher influences on LAL can further be addressed by determining effective teacher development and approaches based on theories of learning. These perspectives and approaches to literacy transcend beyond the school to the beliefs and assumptions about the knowledge of people such as teachers and students (as cited in Galeego &
Hollingsworth, 2000). According to Galeego and Hollingsworth (2000), to understand the literacy crisis, it is best to understand the literacy crisis inside and outside of the school. Teacher perceptions are utilized to demonstrate measurable outcomes for literacy and scheduling programs (Schunk & Meech, 1992).

Stokes and Wilson (2000) measured students' perceptions of the effects of block scheduling verses traditional scheduling. A multi-group comparative design was used to study four high schools (two with block scheduling for 4 years and two involved in block scheduling for 1-3 years), and all used a 4X4 block scheduling plan. The literature review demonstrates a gap in studies regarding perceptions of the effectiveness of block scheduling which lead the theorists to examine 3 hypotheses:

1) "There is no significant relationship between student perceptions on block scheduling effectiveness and participation." (p. 2).

2) There is no significant relationship between students perceptions on block scheduling and type (regular, advanced or honors) of diploma sought.” (p. 2).

3) “There is no relationship between student perceptions on block scheduling and the instructional methods used.” (p.2)

Participants for the study were randomly selected from each of the four schools. The sample consisted of a predominately middle class sample of students which included Mexican and African American students. The questionnaires in the study were developed by the researchers and included descriptive and Likert scale type of questions. Data collection procedures for this study were similar to the researcher’s previous study and contained a questionnaire that was tested for reliability and validity through an expert panel process, consisting of block scheduling specialists. In
order to ensure internal consistency, the same researcher visited each school to administer the questionnaire to the students. The questionnaire instructions were replicated and read aloud to all students in the sample. Furthermore, the students were able to review the questionnaire and ask any questions for clarification purposes before administration.

An analysis of each hypothesis was completed through statistical measures using a Pearson correlation to test the first null hypothesis, this measurement found no significance at the .05 level. The second null hypothesis in the study analyzed using Chi-square, found no significance on students’ perceptions regarding type of diploma sought (general or advanced); however, Stokes and Wilson (2000) isolated predictions of perceived effectiveness of the type of diploma sought, and by using an analysis of variance was able to examine a significance between student perceptions of effectiveness on two questions, “I learn more on the block, and block scheduling classes are more effective than traditional.” (p.5). An ANOVA was used to isolate the diploma variable which was the most predictive for perceived effectiveness, which showed a significant difference of the previous two questions at the .05 significance level, in favor of students seeking a general diploma. Therefore, the hypothesis relating to analysis was rejected. The last hypotheses used a Pearson correlation and significance at the .05 level, demonstrated a significant relationship. The more students felt that their teachers presented an array of instructional strategies the more the student’s perceived block scheduling to be effective. These findings show that:

1) Block scheduling has greater effectiveness than traditional scheduling
2) Teachers use more strategies in block scheduling than in regular scheduling
3) An advantage as perceived by students is the chance to earn a greater amount of credits.

4) Instructional climate improves during the block scheduling process.

5) The greatest perceived disadvantage of block scheduling is making up the work that is missed.

6) Student perceptions regarding effectiveness of block scheduling is not influenced by the years of block scheduling experience.

Study limitations include the halo effect which interfered with student perceptions of block scheduling due to the newness of these programs. More longitudinal studies are needed to address perceptions overtime. The topic of type (regular, advanced or honors) of diploma sought and student perceptions of the effectiveness of block scheduling are topics worthy of more investigation. In addition, continued studies on the advantages and disadvantages of these programs are needed to determine program effectiveness.

Halsey (2004) conducted a quantitative study measuring whether students in a reading improvement classroom showed a difference in self-efficacy for reading when compared to students in traditional language arts settings. Halsey (2004) used an experimental, causal comparative quantitative design of two groups of students, one convenient sample of 18 seventh graders who were placed in a reading improvement program and a total of 18 randomly selected group of 7th graders from a regular language arts classroom. The literature review included a theoretical framework that provided a background into self-efficacy theory and related the
importance of a student’s ability to perform and the effects this judgment has on motivation. The theoretical review was current and descriptive in contrasting theories relating to self-efficacy. Empirical studies mentioned in the literature review indicated gaps in studies that measure reading perceptions and that previous study do not target specific kinds of reading behaviors. According to Henk and Melnick (as cited in Halsey, 2004), this leaves out of the study measures of reading perception in areas of word recognition, word analysis, fluency and comprehension. This lead Halsey (2004) to test the proposition of student reading self perception on a scale developed by Henk and Melnick (as cited in Halsey, 2004) which addresses various concepts of reading behaviors.

A school sample of 7th graders was used for the study. This sample was taken from students in reading improvement classes and regular language arts classes. Convenience and random sampling were used to obtain the experimental groups. No reliability or validity of measurements was indicated in the study. The Reader self-Perception Scale (RSPS), a measure of reading self efficacy, was used to measure the dependent variable of student self perception outcomes of the independent variable of language arts regular and remedial class participation. The RSPS consists of a Likert scale and measures a general indication of a student’s self perception regarding their reading abilities. The scale has 32 questions and includes 4 measurable scales including aspects of word recognition, word analysis, fluency, and comprehension. A complete description of the assessment tool is given of the RSPS which measures students’ perceptions of their current reading performance compared to past performances, observational comparisons and social feedback. Permission slips were
handed to teachers and parents for consent to participate in the study. The data collection process was not described in detail however; Halsey (2004) did indicate that student participants in the study were asked to fill out a questionnaire about reading to ensure internal validity. Study data was calculated by using descriptive statistics for each scale on the RSPS. An ANOVA test was utilized to determine significant differences between the reading improvement group and regular language arts group for each scale.

Study results did not support the hypothesis that students reading remedial class will have a lower level of self efficacy than students in regular language arts classrooms. Halsey (2004) found that lower self efficacy seemed to be a trait of young adolescent students in the study. In addition, the scale provided a general indication of a student’s self perception of their reading; not a self evaluation of skills and strategy levels. Halsey states that since this was not measured there may possibly be a significant difference between the two groups’ perceptions when measuring student perceptions of specific strategy implementation. Specifically, more research is needed to determine the effects of self efficacy changes when students are prompted to self evaluate their perceptions of specific reading strategies. Halsey also called for replication studies on this topic over several school years, obtaining a larger sample size while strengthening the ANOVA analysis. Future assessment may also need to control for existing feelings of anxiety and low self efficacy.

**Student Academic self-concept**

The theoretical literature on Academic self-concept derives from a social and experiential behavioral concept and is determined through a self-perception process in
this study. Many theorists present a diversified meaning to the construct of academic self-concept. It is generally defined as perceptions of one's ability in several different areas of academia (Harter, 1999; Pajares & Schunk, 2001; Chapman & Tunmer, 2003; Liu & Parkins, 2005; Boersma & Chapman, 1992). The behaviorist Bandura (1994) describes self-efficacy and self-concept as a person's beliefs and perceptions about their capabilities to reach stated levels that have an effect on their lives. Researchers Halsey (2004), Pajares and Schunk (2001), Boersma and Chapman (1992), Hay et al., (1997) and Akande (1997) make a connection between a student’s perception and their academic achievement, development and learning programs. Moreover, academic self-concept as it relates to block scheduling, reveals differing opinions or perceptions of students regarding a particular academic strategy or experience (Bandura, 1994; Brown, 2005; Deuel, 1999; Slate & Jones, 2000; Chapman & Boersma, 1992; Hay et al, 1997).

In an empirical intra-class research design conducted by Hay et al. (1997), the researchers examined the relationship between the Perception of Ability Scale for Students (PASS) and the Self-Description Questionnaire SDQ-1, to determine for the academic areas of math, reading and spelling, if the difference between a student's academic performance and class academic mean can predict the academic self-concept of the student. The study also examined teacher ratings and achievement test data to determine if they established patterns with a student's self-concept data. The study sample consisted of 479 students of Australian descent in a 5th grade coeducational setting. These students were located in 18 separate schools.

The results of this study indicated that the sample's self-concept scores went higher when their academic means rose, and when the sample's achievements levels fell.
below the class mean their self-concept levels decreased as well. The student’s differences in class mean predicted self-concept scores. These findings were shown across the areas of reading, spelling and math areas utilizing test and teaching rating data. When the PASS and SDQ-1 were compared it indicated concurrent validity across the self-concept spectrum. The findings of this research support the idea that the environmental influences affect the dimension of self-concept. The study also found that standardized test scores, PASS and SDQ-1 are valid measures of self-concept within an academic domain. Further research suggests more of a focus is needed on the formulation of self-concept and how it relates to encouraging cooperation and effort rather than competition within the classroom, more focus on the knowledge acquisition that initiates discussion, reflection and exploration research, research that encourages students to compare past and present school performances, and lastly further research is needed in the transference of students from one setting to the next which causes changes in student self-concept because of peer reactions.

Akande (1997) analyzed six academic self-concept dynamics of the PASS on a sample (N=204) of African students in 6th grade in various elementary schools to address the need for administration of the PASS to non-western school children. The findings obtained through the treatment of a two way analysis of variance revealed that learning disabled boys have lower PASS scores than learning disabled girls and that the girls had academic self-concept scores barely lower than their normal achieving counterparts as noted in other PASS studies of Boersma and Chapman (as cited in Akande, 1997). Females in his study had a higher self-concept than males; however for gifted students (measured by the WISC-R) the study found that the gifted boy population had a higher
PASS than gifted girls. Akande suggests further studies conducted on the PASS to strengthen reliability and to address aspects of academic self-concept and learning outcomes.

A student’s academic self-concept regarding a particular strategy or experience can interfere with LAL achievement and motivational learning (Bandura, 1994; Brown, 2005; Slate & Jones, 2000; Pajares & Valiante, 1997; Halsey, 2004; Chapman & Tunmer, 2003; Harter, 1999). Self-concept studies, as it relates to student beliefs and perceptions that can acquire competent levels of academic performance achievement and academics, reveals that students who are unable to read and write effectively tend to develop poor beliefs toward their abilities to successfully perform language arts tasks. According to Bandura’s theory (1995) there are three components operating to enhance academic learning. First, a student develops belief in their efficiency that they can master certain school subjects, and secondly the teacher’s perceptions or beliefs that they can instruct others to gain academic progress. These two areas of student self-efficacy tend to work together simultaneously and are very important to academic development and achievement (Bandura, 1995). Moreover, inquiry into how language arts strategies influence areas of student self-concept and perceptions needs further investigation (Halsey, 2004; Chapman & Tunmer, 2003).

**Theoretical framework of Study**

Based on a critical analysis of theoretical and empirical studies, literature on the constructivist theory can direct research in the area of strategies and practical applications to improve student achievement levels in language arts (Gagnon & Collay, 2001; Goodlad, 1984; Bruner, 1997; Moussiax & Norman, 1997; Applefield et al,
The constructivist theory provides approaches to learning that addresses sociocultural contexts and views the learner as actively engaged as their cultural aspects and experiences are celebrated and embraced by the learning experience (Gagnon & Collay, 2001; Goodlad, 1984; Bruner, 1997). Based on the constructivist theory, Gagnon and Collay (2001), developed a model that offers practical school usage. According to the “designing to learn” model it is important for students to obtain knowledge, develop teamwork, and to connect their past and present experiences through reflections in a learning environment. The model, according to Gagnon and Collay (2001), continues to need refinement of concepts and adaptability features to allow smooth transitioning of the model into other educational venues. One question that may be developed would be the degree of teacher initiation when guiding an active learner who may present with a learning difficulty? How would this model or theory apply? Moussiaux and Norman (1997) also revealed a need to investigate constructivist learning at higher grade levels. More research is needed for intervention purposes to assist teachers with skill building and knowledge of the constructivist approach. In addition more studies are needed that measure quantitative methodologies and concepts of the constructivist approach. (Applefield et al, 2000; Hackmann, 2004; Queen, 2000).

The review of literature has demonstrated that student abilities, and teacher and school characteristics may predict student achievement in LAL areas (Rice, 2003; Goodlad, 1984; Atkinson et al, 2002; Darling-Hammond, 2002; Lewis et al, 1999; Berends et al, 2002; Earthman, 2002; Moussiax & Norman, 1997; Applefield et al, 2000). Many teachers lack the qualities and strategies to improve the academic skills of students (Rice, 2003; Goodlad, 1984).
Block scheduling, as a strategy, can predict outcomes of student achievement and LAL (Deuel, 1999; Mattox et al, 2005; Nichols, 2005). Empirical studies have demonstrated that block scheduling can increase student achievement (Deuel, 1999; Mattox et al 2005; Nichols, 2005). More studies at the middle school level need to be conducted, as well as the effects of block scheduling as it relates to various ethnic groups and student characteristics (Mattox et al, 2005; Nichols, 2005). Block scheduling presents several models that can be used to extend language arts classroom time (Shortt & Thayer, 1999; Queen, 2000; Carroll, 1994; Brasel et al, 1999; Mattox et al, 2005). Other studies theorize that the strategy of block scheduling allows for more time to learn (Canady & Rettig, 1999; CER, 1996; Lindsay, 2005), and makes available more time for in-depth learning (CER, 1996; Lindsay, 2005; Deuel, 1999; Mattox et al, 2005). In addition, studies propose that block scheduling helps improve grades and student morale (Irmsher, 1996; Lindsay, 2005; CER, 1996; Nichols, 2005; Slate and Jones, 2000). There is a lack of empirical studies on block scheduling in middle and elementary school programs. Moreover there is a need to know the best instructional aids and strategies that can be effectively utilized during a 90 minute block. Lastly, there are several contrasting theories relating to block scheduling which claim that block scheduling sessions incorporate inadequate teacher planning and instruction (CER, 1996; Lindsay, 2005), while other researchers state that there is a lack of knowledge about block scheduling and its effects on the morale and grade advancements of students already working at grade level or above (Irmsher, 1996; CER, 1996; Lindsay, 2005).

The studies relative to student academic self-efficacy or student self perceptions regarding a particular strategy or experience can interfere with LAL achievement and
motivational learning (Bandura, 1994; Brown, 2005; Slate & Jones, 2000; Pajares & Valiante, 1997; Halsey, 2004). According to the theorist Bandura (1994), a student’s beliefs in reaching his or her stated academic levels of performance can influence their academic achievement. Students have demonstrated the influences of their school and learning perceptions on actual school performances (Pajares & Valiante, 1997). Halsey (2004) found that further investigation is needed into adolescent self-perceptions utilizing age appropriate scales and scales that measure student perceptions on specific reading approaches to learning. Halsey (2004) also calls for replication of her study to be conducted over several school years. In addition, studies that control for existing feelings of anxiety and low self-concept are also needed.

Based on a critical analysis of theoretical and empirical studies, Scholarly inquiry is needed to examine the effectiveness of language arts strategies on student achievement during block scheduling classroom sessions in an urban middle school (Mattox et al, 2005; Nichols, 2005; Slate & Jones, 2000; Cobb et al, 1999; Veal & Schreiber, 1999). Previous studies demonstrate a shortage of block scheduling or extended time strategies at the middle school level (Goodlad, 1984; Wyatt, 1996; Queen, 2000; Strauss & Irvin, 2005; Mattox et al, 2005; Hackmann, 2004; Slate & Jones, 2000). Previous studies are limited in investigating the effects the language arts strategy of block scheduling has on student achievement when comparing standardized test scores or grade scores of students (CER, 1996; Deuel, 1999). Although, research has demonstrated that there is a relationship between the implementation of language arts strategies and student perceptions of academic improvement (Bandura 1994; Pajares & Valiante, 1997; Pajares & Schunk, 200; Boersma & Chapman, 1992; ) greater inquiry into how language arts
strategies effect student self perceptions of their school performance and academic self-concept need further investigation (Halsey, 2004; Chapman & Tunmer, 2003; Harter, 1999).

Based on the literature review, recommendations and theoretical framework which formulate inferences for future study, research questions and hypotheses are generated about student characteristics, student academic self-concept, and LAL achievement of 6th grade students while utilizing traditional and block scheduling in two urban schools.

**Research Questions**

1. What are the demographic, health, academic characteristics (4th and 6th grades) and NJASK standardized test performance in LAL (4th and 6th grades), and academic self-concept measurement in two urban schools participating in traditional and 90 minute block scheduling?

2. Are there differences in fourth grade baseline demographic, health, academic characteristics, and NJASK standardized performance scores in LAL, in middle school age students who later experienced traditional scheduling or 90-minute block scheduling in 5th and 6th grade?

**Hypotheses**

1. Compared with sixth grade urban school students that experience traditional scheduling, sixth grade urban school students that participate in 90 minute block scheduling have significantly:
$H_{1a}$ greater academic self-concept (general ability, math, reading/spelling, penmanship, neatness, school satisfaction and school confidence), and

$H_{1b}$ greater increase in LAL ($6^{th}$ grade NJASK minus fourth grade NJASK scores)

2. Demographic, health, academic characteristics (fourth and sixth grades), and sixth grade academic self-concept, are significant explanatory variables of a change in LAL ($4^{th}$ grade NJASK minus sixth grade NJASK scores) in 6th grade urban school students experiencing traditional and block scheduling (total group).

$H_{2a}$ Demographic, health, academic characteristics (fourth through sixth grades), and sixth grade academic self-concept, are significant explanatory variables of a change in LAL ($6^{th}$ grade NJASK minus fourth grade NJASK scores) in sixth grade school students experiencing traditional scheduling.

$H_{2b}$ Demographic, health, academic characteristics (fourth through sixth grades), and sixth grade academic self-concept, are significant explanatory variables of a change in LAL ($6^{th}$ grade NJASK minus fourth grade NJASK performance scores) in the group of 6th grade urban school students experiencing block scheduling.

$H_{2c}$ Sixth grade middle school students experiencing block scheduling have greater explanatory power of the relationship of demographic, health, academic characteristics (fourth through sixth grades), academic self-concept, and gain in LAL ($6^{th}$ grade NJASK minus
fourth grade NJASK scores) than sixth grade urban school students experiencing traditional scheduling. (Compare adjusted R-square results for $H_{2a}$ versus $H_{2b}$).

A hypothesized model (see Figure 2-1) depicts explanatory relationships between student characteristics (demographics, health and academic characteristics), student academic self-concept and change in LAL achievement. The theoretical framework and hypotheses result in a hypothesized model (see Figure 2-1) which depicts relationships between major theories and study variables. Figure 2-1 depicts and hypothesizes relationships between academic self-concept in students who experience a 90 minute block schedule ($H_{1a}$), and LAL achievement ($6^{th}$ grade NJASK minus $4^{th}$ grade scores) in block scheduling children ($H_{2b}$). The figure also depicts the relationships between student characteristics (demographic, health, academic) and academic self-concept as significant explanatory variables in explaining a change in LAL ($6^{th}$ grade NJASK minus fourth grade NJASK scores) in sixth grade middle school students experiencing traditional scheduling ($H_{2a}$) and block scheduling ($H_{2b}$). In addition, the hypothesized figure represents a relationship between $6^{th}$ grade students experiencing block scheduling and explanatory variables such as demographic, health, academic characteristics (fourth through $6^{th}$ grades) and sixth grade student academic self-concept to explain a hypothesized gain in LAL when compared to a group of $6^{th}$ grade students experiencing traditional scheduling ($H_{2c}$). Lastly, the hypothesized model depicts, by comparing an adjusted R-square results for $H_{2a}$ and $H_{2b}$, greater explanatory power of the relationships between $6^{th}$ grade students experiencing block scheduling, and student characteristics.
(demographic, health, academic) from 4th through 6th grades, sixth grade academic self-concept and gain in LAL (6th grade minus 4th grade NJASK scores) than students experiencing traditional scheduling.
Figure 2-1. Hypothesized model of the relationships between student characteristics, student perceptions on LAL achievement of urban middle school students in traditional and block scheduling.
Figure 2-1. Hypothesized model of the relationships between student characteristics, student perceptions on LAL achievement of urban middle school students in traditional and block scheduling.
In Chapter II, a literature review about the relationships between student characteristics, student academic self-concept and LAL performance for 6th graders in traditional verses block scheduling programs were reviewed. A critical analysis of both empirical and theoretical literature revealed gaps and a need for further research regarding the effects of two language arts strategies of traditional and block scheduling on student achievement in a urban middle grade students. The implementation of block scheduling and explanatory variables such as demographics, health, and academic achievement is presented through a hypothesized model. Likewise, the theoretical framework discusses the relationship between student academic self-concept and student achievement for students involved in LAL programs. Propositions in this study suggest higher academic self-concept and student LAL performance when block scheduling is implemented. In Chapter III, these specific propositions of the hypothesized model will be analyzed using a research design which encompasses an exploratory (comparative), retrospective and explanatory (correlational) non-experimental research plan. Chapter III will present the research methodology for this study in determining the effects of student characteristics, student academic self-concept on student LAL performance and in comparing these variables amongst 6th grade students in two urban schools, one school experiencing 90 minute block scheduling and the other consisting of 6th graders who participate in traditional scheduling for LAL instruction.
CHAPTER III

METHODOLOGY

In Chapter III, the research design is developed to be able to solve the hypothesis and research questions contained within the theoretical framework for this study. The study examined the relationships between student characteristics, student perceptions, and student achievement in block schedule and traditional scheduling schools. This chapter discusses the research design, population, sampling plan, and setting, instrumentation and the data analysis conducted for the study. The last section of this chapter will include an evaluation of the research methods utilized in this study.

Research Design

A quantitative exploratory (comparative) retrospective and an explanatory (correlational) non-experimental study will be used to answer the research questions and hypotheses within the study and to understand the relationships between the independent variables of block schedules and traditional schedules and student attribute variables (age, gender, ethnicity, disability, socioeconomic status), and the dependent variables of academic self-concept (general ability, math, reading/spelling, penmanship, neatness, school satisfaction), and student language arts achievement. Data collection source will take place in two parts Part I will consist of student record review for the variables of student age, gender, ethnicity, student disability socioeconomic status and academic achievement on the NJASK exams for the 2004-2005 school year and NJASK scores from the 2006 administration (see Appendix A), and Part II will consist of the administration of an academic self-concept survey administered to all 6th grade students in the study (Appendix B).
Two groups of 6th graders' performances, one group attending a traditional scheduling language arts program and the other group of 6th graders attended a block scheduling program at their school. All students in the 6th grade classes were selected to participate in both traditional and block scheduling schools. This population was chosen to better understand natural occurrences and relationships within the traditional and block scheduling classrooms as they relate to student characteristics, academic self-concept and LAL student achievement.

In this study, Part 1 consisted of gathering student records data (Appendix A) from yellow school cards containing student age, gender, ethnicity, disability, and socioeconomic status for current 6th grade students in both block and traditional scheduling schools. Student records provided 4th grade sample scores on the NJASK standardized achievement tests for the 2004-2005 school year and current 2006-2007 NJASK 6th grade scores from both block schedule and traditional scheduling schools. The retrospective data of the performance of these students' when in 4th grade (NJASK's taken 2004-2005) was measured and compared in both schools. The LAL cluster, subscale and total scores were used to measure student LAL achievement. Score information was recorded on the student record data form (Appendix A).

Part 2 was the administration of the Perception of Ability Scale for Students (PASS) inventory (Appendix B) was given to all 6th grade students in both traditional and block schools. This inventory will assess student academic self-concept. The 6 constructs of academic self-concept measured for this study include general ability, math, reading/spelling, penmanship/ neatness, school satisfaction and school confidence.

The research design based on the specific questions and hypotheses contains
various designs incorporated to answer study questions and hypotheses. A descriptive
design of student data records (Appendix A) was presented for the purpose of analyzing
the student characteristics (age, gender ethnicity, disability and socioeconomic status) of
4th graders in the year 2004-2005 and current 6th graders for the 2005-2006 school year in
both traditional and block schedule schools (Research Question 1).

An exploratory (comparative) design was used to determine the differences in 4th
grade baseline demographic, health and academic variables and NJASK test performance
in LAL amongst middle school students who later experienced traditional and 90 minute
block scheduling in 6th grade. The independent variable of two groups of 6th graders in
traditional and block schedule programs was compared to all dependent variables
including student characteristics (age, gender, ethnicity, disability and SES) as well as
LAL performance scores on the NJASK. This comparison displayed the equivalencies
within the two groups of students within the sample.

In comparing the two groups, the first hypotheses, “sixth grade middle school
students that participate in a 90 minute block scheduling program will have greater self
perception (H1b), and an increase in LAL performance (H1c)”, was determined through
an exploratory (comparative) and retrospective design. The independent variables
included the two groups of 6th grade students and the dependent variables was listed as
academic self-concept and student LAL achievement.

Student characteristics such as gender, age, disability, ethnicity and student
socioeconomic status (4th through 6th grade), and sixth grade students’ academic self-
concept are significant explanatory variables of a change in LAL (6th grade minus 4th
grade NJASK scores) in 6th grade middle school age student experiencing traditional
scheduling (H2a), and a non-experimental (correlational) and retrospective design was presented to analyze the hypothesis. These same student characteristics (dependent variables) was utilized to show a relationship between students involved in traditional scheduling and those who are experiencing a block schedule program (H2b). This data was analyzed through a non-experimental (correlational) and retrospective design.

The last hypotheses (H2c), used a non-experimental (correlational) and retrospective design to examine the relationships between the independent variable 6th graders experiencing a 90 minute block schedule for LAL and the attribute variable of demographic, academic, health characteristics (4th through 6th), and 6th grade academic self-concept (constructs of general ability, math, reading/spelling, penmanship, neatness), and gain in LAL (6th grade NJASK minus 4th grade NJASK scores) compared to sixth grade students experiencing traditional scheduling (comparison of adjusted R-square results of H2a versus H2b).

**Population and Sampling Plan**

The block schedule urban school in this study was selected conveniently because of their participation in 90 minute combined periods for LAL instruction. The traditional schedule urban school was selected for its traditional schedule of a 45-55 minute uncombined period for LAL instruction. Both schools were notified and researched by the investigator for participation in this study. The second stage of selection was that of the sample contained within the school setting.
Target Population

A target population is a group of individuals with common characteristics that the researcher studies (Creswell, 2005). In this study the target population consists of 6th grade male and female students enrolled in two public urban schools in different urban cities in Northern, New Jersey. Both schools chosen had similar demographics, resided within an urban school setting, and contained a significant number of minority students. According to the Public School Review (2006), there are a total of 35 public schools with a total of 26,116 students in the city where the traditional school is located. There are 2,032 6th grade students in the district. The block school’s district has a population of 54.2% Hispanics of any race, 37.2% African-Americans, 6% Caucasian, and 2.5% Asian. Sixty-five percent of students in this district are eligible for free lunch.

According to the Public School Review (2006), the traditional school’s district has 21 schools with 13,046 students and approximately 899 6th graders present in the district. The racial and ethnic student demographic consists of 94.9% African-American, 4.9% Hispanic, 0.1% Asian and 0.1% Caucasian. Fifty percent of students in the traditional district is eligible for free lunch and 14% are eligible for reduced lunch services.

Accessible population

All students who are recruited for this study came from two schools, one block and the other school a traditional scheduling school. The block school’s student population totals 606 students with 118 sixth grade students. The traditional scheduling school has a total of 537 students and approximately 75 students are in the sixth grade.
Eligibility Criteria

1. All study student participants need to be middle school aged student in sixth grade.
2. Students must be involved in a school that participates in 90 minute block or traditional scheduling for LAL instruction.
3. The 6th grade student must take the NJASK 6th grade assessment in the spring of the 2006-2007 school terms.
4. The grade student must have a record of taking a 4th grade NJASK assessment while in the 4th grade.
5. Students must be willing to participate in the study.
6. Although the Perception of Ability Scale for Students (PASS) is readable at a 2nd grade level, 6th grade student must be able to read at or above a 2nd grade level (determined by classroom teachers).

Exclusion Criteria

1. Significantly disabled students, who are age appropriate, however not read at a 2nd grade level required for successful administration of the PASS will be excluded.
2. Students who are limited in the English language who may have difficulties with comprehension of scale items will be excluded.
3. Students who lack NJASK testing data from either or both 2004-2005 (4th grade) and 2006-2007 (6th grade) test administrations will be excluded.

4. Self-contained special education students who are age appropriate, however are excluded due to lower levels of functioning and more customized classroom setting.

**Sampling Plan**

There are two schools purposively (non-random) selected by the researcher and all 6th grade students invited to participate (or will be included in the study). There was neither a random or nonrandom selection of the students. The final data producing group of students from the block and traditional scheduling schools was determined by parental consent, student attendance on the academic self-concept survey distribution day and adequate student record information required for the study. The purpose of the sampling plan is to help provide a group of participants that will be representative of a larger group of students. The sampling plan determines the degree a group of participants are representative of the population from which they derive. In this study (due to the fact that the final data producing sample is restricted to two schools), generalizability is limited. A strength is that all 6th grade students were invited to participate in the study from both the traditional and block scheduling schools. In addition, the school populations used in the study will provide adequate information for these schools that will answer the research questions and research hypotheses used in this study (Creswell, 2005).
Sample Size

According to the power analysis (Creswell, 2005), utilizing Lipsey’s chart with a statistical level of significance at $P=.05$ and at a .80 power criterion (power needed to reject the hypotheses when it is false), the sample size must be at least 30 participants from each school in the study. The students used in this study were 32 students participating in the Block schools and 30 students participating in the traditional scheduling school ($N=145$).

Setting

Two urban public schools containing 6th grade classrooms in two large metropolitan cities in Northern, New Jersey. Data collection focused on 6th grade students enrolled in both urban schools.

Instrumentation

There were two methods of data collections for this study. The first source of data collection is Student Records Data (see Appendix A). Student standardized assessment information included in the student records were used for the purposes of establishing student performance. The study participants had been evaluated using the New Jersey Assessment of Skills and Knowledge (NJASK) standardized achievement and for this study, the LAL independent score will be utilized.

The second method of data collection was by a survey, administration of the Perception of Ability Scale for Students (PASS) (see Appendix B) to both groups of 6th grade students in block and traditional schools. The PASS was developed by Boersma and Chapman (1992) and measures the construct of academic self-concept. The
inventory measures student’s perceptions of their 1) general ability, 2) math ability, 3) reading/spelling ability, 4) neatness/penmanship, 5) school satisfaction, and 6) school confidence.

**Student Record Data**

The student’s information was recorded on the Student Record Data form (Appendix A), by the researcher. This information was obtained from computerized data information on each 6th grade student in the study from both Block and traditional scheduling schools. In public school districts this information is also found on the student “Yellow Card”. Data from the student’s records was used to fill out the student record data information needed for the study. Student Lunch applications were used to determine if the student is eligible for free or reduced lunch, an indication of socioeconomic status.

Another section of the student record data sheet included the student’s NJASK or standardized scores for the 2004-2005 school years and 2006-2007 school years. The NJASK replaced the ESPA (Early Skills Proficiency Assessment), and maintains previous ESPA test items to allow for subsequent reporting of categories and scores for schools to continue uninterrupted comparisons (Ebner, 2004). The NJASK was used as a pre test (4th grade) and post test (6th grade) assessment. The NASK test is given in March of each year to New Jersey students in grades 3rd through 7th. The NJASK is an assessment measure given routinely to the students in both schools on a yearly basis. The LAL portion’s total score will only be used to determine achievement performance in this study. Scores on the NJASK correspond to performance descriptors of Partially Proficient, Proficient and Advanced Proficient which indicate the levels of performance.
that students have meet or achieve (NJDED, 2005a). The following is a complete
description of the LAL achievement profile of assessment gathered in grades 4th (2004-
2005) and in 6th grade (2006-2007).

4th Grade LAL

Description. The student’s scores from the NJASK or other standardized
assessment taken in 4th grade will be recorded on the student record data form. Each year
the students in the study from both schools are administered the NJASK which is a
measure of the student’s progress in achieving the New Jersey’s Department of Education
(NJDOE) Core Curriculum Content Standards. According to NJDOE (2005a) curriculum
specialists and teachers can use test specifications, LAL curriculum and the core
curriculum standards to improve instruction in LAL at the district, school and classroom
levels. Total scores on The LAL portions of the assessment was utilized to complete
LAL standardized scores portion of the student record data report (Appendix A). The
following information includes subtests and objectives of the NJASK 4th grade LAL
segment:

  Reading working with text/analyzing text:

  1) Includes items which measure test organization, supporting
details, paraphrasing/retelling (vocabulary) and drawing
conclusions for the text.

  2) Focuses on assessing student ability to obtain information and
knowledge form a text. Analyzing text focuses on student
analysis of information.
3) Responses are presented through student prompts, writing tasks, multiple choice and open ended question methods.

Writing Picture/Writing Persuasive Prompt:

1) Includes items that consist of story themes, exploration of information, supporting details, drawing conclusions and formulating opinions.

2) Students create a compositional story from a prompt and writes about pictures and poems that are presented.

3) This section of the LAL portion of the NJASK consists of multiple choice questions (one to four choices) and open ended sections (short and long responses).

Reliability and Validity. The reliability coefficients for the reading subtests according to technical data were .82. The portions consisting of interpretation of test data received a .78 coefficient (Tienken & Wilson, 2005). The reliability estimates for the NJASK writing prompts was estimated in a study conducted by Tienken and Wilson (2005) which indicated that Cronbach alphas are an indication of the extent which items in a scale work together to obtain consistent results. The reliability estimates of the writing cluster were .75.

Content validity of the NJASK 4th grade LAL portion revealed that the NJASK aligns with the New Jersey Core Curriculum Standards (NJCCCS) and skills expected of 4th grade students. The NJDOE hired expert panelists and internal committees to determine how well the NJASK measures student knowledge and skills. This process of comparisons has also been compared to those skills in other states. All
items are field tested and reviewed before used as operational items (NJDOE, 2004). The Educational Testing Service (ETS) calculates item means, response frequencies, biserial correlations and other descriptive characteristics for the NJASK. For statistical item review, Mantel-Haenszel statistics is calculated.

Content related validity of the NJASK results help to dictate socioeconomic status or school districts in need of academic support as a strong predictor of student achievement in LAL (Tienken & Wilson, 2005).

6th grade LAL

Description. The NJDOE created an expanded test of the 3rd and 4th grade NJASK for grades 5th through 7th grades. This expanded version was first piloted in the 2005-2006 school year. The development of technical information for the expanded grade NJASK continues to be an ongoing evaluative process. The 6th grade NJASK language arts version included writing speculate (persuasive prompt), reading narratives and a measurement of everyday text reading skills. The assessment constructs include:

1) Working with or interpreting text (identification of main idea, supporting details, following directions, paraphrasing, text organization and purposes for reading).

2) Analyzing and critiquing text (enhancement of understanding, predictions/forming opinions of tentative meaning and drawing conclusions).

3) Generating text (viewing picture prompts or reading for details, solving problems and writing a story).
In all three areas students are required to generalize their own texts, obtain and analyze their own knowledge. The NJASK 6th grade language arts assessment consists of performance based tasks for writing, multiple choices and open ended questions (NJDOE, 2006).

**Reliability and Validity.**

According to the NJASK technical report (NJDED, 2006), the new expanded version for the 6th grade NJASK indicates that measurement of errors associated with test scores are reasonable. The NJASK is a standardized measure whose technical report (NJDED, 2004) presents Coefficient alphas between .78 and .85 within the content clusters of tests according to grade level. Standard errors of measurements are listed between 2.28 and 2.99. Developing items were field tested using New Jersey student performances prior to 2000. Rater reliability was also completed and demonstrated areas of exact agreement of rater scorings on areas of LAL sections (NJDED, 2004).

Content validity indicates an alignment with New Jersey Core curriculum Standards (NJCCCS). According to The New Jersey Department of Education (NJDED, 2004), content related evidence support validity is presented in terms of adequacy and appropriateness of the relativity of The NJCCCS and the contents of the NJASK test. Pearson correlations between LAL clusters were generally found to be higher than correlations between clusters across the two content areas in grade 6 (NJDED, 2004). Correlations for 6th grade language arts for the clusters of reading and writing clusters range from .50 to .92.
6th Grade Student Survey: Academic Self-Concept

The second stage of instrumentation is the student survey (Appendix B) taken by the traditional and block scheduling students in the study. Academic self-concept is a student’s general view about themselves and their academic competence and ability to succeed in their tasks areas. Recent research suggests that academic self-concept as it relates to motivational factors tends to concentrate on one’s perception of competence over cognitive and affective components (Harter 1999; Boersma & Chapman, 1992). In this study, academic self-concept is measured by the PASS, developed by Boersma and Chapman, 1992. The academic areas of reading and mathematics self-concept are considered very important factors and contributors to preadolescent academic self-concept measurement (Boersma & Chapman, 1992).

A predecessor of the PASS was the Student Perception of Ability Scale (SPAS). The purpose of the PASS, a self-report inventory, is to assess children’s perceptions from grades 3-6 regarding their academic abilities and school related achievement. The PASS is a 70 item assessment that takes 15-20 minutes to complete. Test items are written at 2nd grade readability level. The respondents respond in “yes” or “no” response categories. Each item is scored dichotomously and equals 1 point with full scale scores from 0-70 with high scores corresponding to a positive academic self-concept. Most subscales present scale scores of 0-12 and T scores are produced for both subscales and full scale scores (Subkoviak, 1995). According to Harwell (1995), for individual subscales Cronbach’s coefficient alpha’s were used to determine reliability of the full scale. Most of the subscale tests showed coefficients greater than .75. The overall pilot sample of N=310 produced an alpha of .91. The United States’ normative sample during
pilot testing showed alphas of .93. According to Boersma & Chapman (1992) standard errors of measurement (SEM) are approximately 3.5 whereas individual construct SEM’s are from 1.2 to 1.35 points. Test –retest reliability correlations were taken over three sessions (4-6 weeks, one year, and two years). These results indicated test –retest coefficients of .71-.83 (4-6 week period), .55 -.75 for the one year period, and .49-.67 for the two year period of test-retest reliability assessment. A learning disability sample of N=51 demonstrated slightly higher results.

Content, construct and criterion-reference validity for full scale and subscales are reported in the manual. Validity indices indicate that the PASS can be used to access a student’s strengths and weaknesses. Construct validity is indicated by comparing the full scale score to positive correlations between the PASS full scores and other measures of academic self-concept, general self, achievement expectations, grade point average, teacher ratings and parents perceptions (Subkoviak, 1995). Construct validity of PASS full scale scores are fair, therefore a valid indicator for screening and identifying students labeled as being exceptional, for measuring contrasting levels of academic self-concept for student experiencing treatment programs, and for determining changes in student’s average self-concept toward academic abilities (Subkoviak, 1995).

This assessment was chosen over other scales of perception due to its specific measure of school related abilities and tasks in specific school subject areas (i.e. Reading/spelling), which makes this perception scale unique to all the other self report inventories for students (Harwell, 1995). A breakdown of individual subscale’s descriptions, reliability and validity data follows:
**General Ability**

**Description.** The general ability subscale contains items that interpret feelings of school related activities including items that relate to receptive /expressive comprehension (Boersma & Chapman, 1992). Examples of general ability items (Appendix B) include “I usually have problems understanding what I read” and “I have trouble telling other what I mean” (p. 27). Scores that are within the low range indicate that self reports are poor and those in the higher range indicate that self-perceptions are high across the spectrum of school related activities. General ability has an item range from 0-12.

**Reliability.** Item analysis of the general ability subscale calculates internal consistency reliability measures. The point –biserial (RPB) correlation coefficient between item # 61, “In school I find new things difficult to learn” (p.27) and the general ability subscale scores indicates the highest correlation at RPB = .66. According to Harwell (1995) most of the subscales show Cronbach alpha’s greater than .75. Test – retest measures for a time span of 4-6 weeks for subscale coefficients ranged from .55 to .75 (N=932) for the one year period. Estimates for internal consistency for the former SPAS (currently known as PASS), indicated a General Ability reliability coefficient of .785 suggestive of items within subscales are homogeneous and taps a common domain (Boersma, James & Maguire, 1979).

**Validity.** Content validity as it relates to the PASS refers to it’s relationship to self perceptions of ability in specific academic areas, coupled with feelings and attitudes towards achievement related events or school situations (Boersma & Chapman, 1992; Boersma et al, 1979; Hay et al, 1997). Two hundred items began the initial selection for
the scale and with factor analysis the number was cut to the 70 that is the current number of items in the scale. According to Boersma and Chapman (1992) these items appear adequate for assessing academic self-concept in children of elementary age level. Scores from the Piers-Harris children’s Self –Concept Scale (PHCSCS) intellectual and school status subscales have been correlated with the PASS scores and the subscale general ability revealed the highest coefficient at .60 (Boersma & Chapman, 1992). When compared to other measures of achievement, such as report card grades and standardized testing, general ability subscale indicated moderate correlations with grades in reading, math and language; and general ability had the highest predictive ability for subsequent report card grades. When compared to standardize testing the general Ability subscale showed the highest correlation with the Canadian Test of Basic Skills (Boersma & Chapman, 1992; Boersma et al, 1979).

Math Perception

Description. Items of the math subscale relate to items concerning student’s perceptions and attitudes toward math and the performance of math operations (Boersma & Chapman, 1992). Items on the subscale include “I like math” and “I am good with my times tables” (27). Low scores indicate a dislike for math activities. Math items scores range from 0-12.

Reliability. Inter item analysis demonstrates that the item # 66 “I am good with math” has the highest item subscale correlation (RPB of .74). Estimates of internal consistency determined by Cronbach’s alpha for arithmetic, reading/spelling are between .822 and .855 for the PASS subscales. Retest reliability was indicated at .83 (Hay et al, 1997)
**Validity.** Concurrent validity: Correlations between the PASS and the Tennessee Self-Concept Scale showed the highest subscale correlations for math at .50. When compared to student achievement report card scores in math subscale’s this correlation was highest compared to the other subscales and respective report card areas, the subject-specific math PASS subscale mathematical areas correlated much higher with the Canadian test of Basic Skills (CTBS) math sections ($r=.37$). Hay et al (1997), in an inter-class research design study demonstrating the relationships between PASS, Self Descriptive Questionnaire SDQ-I and student achievement indicated a concurrent validity coefficient between PASS math and SDQ-I math of $r=.59$.

**Reading/Spelling Perception**

**Description.** This subscale consists of perceptions of performance or attitudes relative to reading and spelling ability. Scores constitute consistency of competence in these areas and low scores detect some difficulty (Boersma & Chapman, 1992). In this section of the PASS (Appendix B), items such as “I am unhappy with how I read”, “I am good at spelling” and “I have problems in spelling” are included. The subscale scores range from 0-12.

**Reliability.** The items with the highest item subscale correlation was “I am good at spelling” and ‘I have problems in spelling” (Boersma & Chapman, 1992), with an RPB of .71. Reliability estimates of internal consistency for the reading/spelling subscale indicate estimates between .822 and .855 (Boersma et al, 1979). Test–retest reliability utilizing over a 4 to 6 week period (N=630) revealed for the Reading/Spelling measure as .82. According to Chapman’s (1988) the reading/Spelling subscale is consistently the
most stable PASS subscale. Item analysis correlation coefficients (subscale inter-
correlations) revealed for Reading/Spelling was .770 ((Boersma et al, 1997).

Validity. External validity as a means of establishing discriminant validity
was used to measure the relationship of the SPAS to other self-concept measures such as
the PHCSCS (Boersma et al, 1997). The Reading/spelling subscale and other subscales
ranged form -.029 to .078 with none at the .05 significance level, indicative of the result
that the PHCSCS and PASS are measuring two distinct domains and that academic self-
concept is distinguishable form general self–concept (Boersma et al, 1997). When
measuring PASS score differences from student class mean on spelling tests revealed that
when student’s academic (spelling) scores fall below the mean their self-concept
decreases and visa versa (Hay et al, 1997). Predictive validity also demonstrates that in
class academic feedback increases student’s academic self- concept (p< .001). The PASS
relationship with school achievement variable (external validity), with respect to report
card grades demonstrates that the Reading /Spelling subscale had the highest correlation
amongst the subscales (r=.50).

Penmanship/Neatness

Description. The items included in this subscale include activities that relate to
printing, writing and drawing such as “My school work is usually untidy” or “I am a
messy writer” (as cited in Boersma & Chapman, 1992 p. 27). Low scores are indicative
of problems completing appropriate work that meets the teacher’s expectations. Large
amounts of students in a class with low scores on penmanship/neatness expresses the
assumption that teacher’s expectations may be high regarding writing and neatness.
Reliability. The item with the highest item subscale correlation was “I have neat printing” (p.27) with a point biserial of .75. Reliability estimates for SPAS (now known as the PASS) for this area was indicated between .822 and .855 and test-retest reliability was estimated to be within .714 and .824 (Boersma et al, 1979).

Validity. Interpretation of an instrument’s external validity between PASS scores and end of the year grades (N=642) exhibited predictive ability between PASS scores and grades for penmanship skills; moreover, the penmanship and neatness subscale strongly predicts validity for penmanship legibility achievement in school (Boersma & Chapman, 1992).

School Satisfaction

Description. The variable of school satisfaction concerns positive or dissatisfaction with school related tasks involving verbal skills and social interactions (Boersma & Chapman, 1992). Items within this subscale are positive in structure such as, “I like to answer questions” and “I like going to school” (p. 24). This subscale may also be highly influenced by the act of faking due to a need to express what is socially desirable, especially when other subscales within the PASS are scored lower than the School Satisfaction subscale.

Reliability. There were several items that presented subscale correlations presented RPB’s (point biserial correlation between item and total test score) of .55. School satisfaction demonstrated stability coefficients for the beginning and ending of 6th grade, lower or declined due to the 6th graders in the sample becoming increasingly less satisfied with school overtime (Chapman, 1988). Test-retest measures for the School satisfaction subscale demonstrated the highest relative stability coefficient at .71 within a
4-6 week time span (N=603) in grades 3rd through sixth and at a two year time span the test-retest coefficient declined to .49 (Boersma & Chapman, 1992). According to Subkoviak (1995) the School Satisfaction Subscale of the PASS is less consistent and the authors Boersma and Chapman reiterate that analysis using this subscale profile to identify student strengths and weaknesses should be done with caution due to random variability of subscale scores. In the former SPAS statistical analysis conducted by Boersma et al (1979) revealed estimates of internal consistency (Cronbach Alphas) of .785 for the School Satisfaction subscale.

**Validity.** The School Satisfaction subscale rendered moderate concurrent correlations when compared to other general self-concept measures of school status sections of PHCSC and sections relative to TSCS self-concept assessments (Boersma & Chapman, 1992).

**Confidence in Academic Ability**

**Description.** The Confidence subscale contains 10 items, the least of the items contained within the various subscales of the PASS. The subscale reflects a readiness in children to express how smart and competent they are in their academic abilities at school. Items within this subscale include the following items, “I always understand everything I read” and “I am a smart kid” (as cited in Boersma & Chapman, 1992, p. 28). Very high scores are interpreted as an unrealistic evaluation of self. Low scores on this subscale correspond to low self confidence relative to school activities.

**Reliability.** The item “I am one of the smartest kids” (p. 28), has the highest RPB at .63. The confidence subscale demonstrates a reliability of about .69 for the normative sample (Boersma & Chapman, 1992). Internal consistency coefficients
indicate that although the full scale coefficients are high, the individual Confidence subscale is less consistent and stable due to random fluctuation in subscale scores (Subkoviak, 1995). Harter (1999) justifies low coefficients of subscales due to the lack of items contained within subscales.

Validity. Concerning concurrent correlations using PASS and TSCS’ (Social Self Scale), and the Piers-Harris scores, the analysis demonstrated the second highest coefficient among samples of learning disabled students, and for a predictive validity analysis, the confidence subscale of the PASS showed a moderate prediction for school achievement (Boersma & Chapman, 1992).

Procedures: Ethical Considerations and Data Collection Procedures

This section consists of ethical considerations regarding the protection of study participants along with the methods used for data collection.

1. Before the data collection process, permission to use the Perception of Ability Scale (PASS) in the proposal and IRB process (permission for copy of form and manual) was obtained from the copyright publisher (Appendix C).

2. Traditional schools and block scheduling schools were identified through the internet. Calls went out to the school districts, both traditional and block scheduling schools explaining the study and brief overview of the research plan. The discussion process helped narrow the choice down to two public schools (traditional and block).

3. Two letters (Appendix D) were drafted and reviewed by the researcher’s dissertation chair describing the study purpose, data and population needed for each school and requesting permission to conduct the study at both a traditional
and block scheduling school. Parental consent and child assent forms will be sent to the district for perusal.

4. The researcher obtained all permissions for use of instruments (Appendix C) and district approvals to conduct research at both school settings (Appendix D).

5. An application process was completed after a successful dissertation proposal defense, with the Institutional review Board (IRB) at Lynn university. The IRB proposal, research instruments, informed consent, data collection procedures, school and student selection process will be reviewed by the IRB committee.

6. Upon full approval by IRB the data collection process at the schools began.

7. Parental consent letters (Appendix E) were sent out for signatures after district and IRB approval. School guidance counselors in both schools acted as contact persons to help distribute consent forms and to assist the researcher with administering the PASS inventory. Parents who have not returned consent forms were notified and/or reminded by a telephone call made by the researcher or school guidance counselor. Consent forms indicated that parents have the right to decline their child’s participation in this study. Students did not participate in the study if a signed parental consent form and student assent form was not included in the file.

8. Child assent (Appendix E) was obtained and this process occurred before the PASS administration.

9. Child assent was read aloud to the student with parental consent to participate in the study.
10. Parental consent and child assent included a statement indicating that participation is a voluntary process and that nonparticipation of any kind does not result in penalty.

11. Guidance counselors at both schools acted as contact persons to assist in this study.
   
   a. Student record data (Appendix A) was collected on students who have consent to participate in the study. Student names were corresponded to codes in a chart for each 6th grade classroom in both schools. Each student was supplied with a coded inventory which corresponds to their name. The codes were placed in the computer for each study participant.
   
   b. Directions, for the PASS (Appendix B), were read aloud to all students participating in the study.
   
   c. Since that guidance counselors are more familiar with the students in their respective schools they assisted the researcher with coding data and distribution of PASS to students according to their number codes.
   
   d. Data collection for this study at both schools was conducted for a period of 4-6 weeks and no longer than one year.

12. During this one month period, data for the Student Record Data form including NJASK were obtained from the schools records.

13. All information including student names were given codes and identification numbers and stored confidentially in the computer (password and username identification will be required). The results of all responses were presented as a group in the SPSS statistical program.
14. Student record data (Appendix A) and all PASS inventories (Appendix B) were maintained for a year under file lock and key and destroyed in five years.

15. A month after data collection an IRB form 8 was completed and submitted to the IRB committee.

Methods of Data Analysis

All data collection from the sample was collected and analyzed by the Statistical Package for Social Sciences program (SPSS). The data was coded before entry into the SPSS database. Several statistical formulas including descriptive data analysis, chi-square, independent $T$-tests and multiple regression analysis were utilized to answer the research questions and hypotheses for this study. The following statistical measures were completed to answer the following research questions and hypotheses: Question 1 which describes the sample (descriptive design) and all variables in the study will be presented through descriptive statistics. These variables include social demographics, student characteristics, health or disability characteristics, student ethnicity, socioeconomic status (Lunch applications) gender and age, academic self-concept scores and student LAL achievement outcomes, and will be presented through the use of measures of central tendency (mean and median), frequency distributions and variability (range or standard deviation) on the scores of students from traditional and block LAL programs.

For the exploratory (comparative) retrospective design, Question 2 was answered by using chi-square and independent $T$-tests to determine the differences and equivalencies in background demographic characteristics, health and academic self-concept, and NJASK performances in 4th and 6th grades in traditional and block schools.
$H_1$ is tested with an exploratory (comparative) retrospective design and to test the hypothesis a two group comparison independent $t$-tests to determine if academic self-concept ($H_{1a}$), is significantly greater in the block scheduling group compared to the traditional scheduling group, and if there was a significantly greater increase ($6^{th}$ grade minus $4^{th}$ grade scores) in LAL ($H_{1b}$) in the block scheduling group compared to the traditional scheduling group.

To test Hypothesis 2 (correlational, retrospective design), multiple regression analyses was used to examine the explanatory relationship between demographic, health, academic characteristics and sixth grade student academic self-concept, and gains in LAL ($6^{th}$ grade minus $4^{th}$ grade NJASK scores) in $6^{th}$ graders experiencing traditional scheduling ($H_{2a}$), and in $6^{th}$ grade student experiencing block scheduling ($H_{2b}$). The adjusted $R$-squares for two groups one experiencing traditional scheduling ($H_{2a}$) and the other experiencing block scheduling ($H_{2b}$) was compared in $H_{2c}$ in order to determine if block scheduling had greater explanatory power predictors of LAL learning gains.

**Evaluation of Ethical Aspects of the Study**

1. Proper permission was obtained from instrument copyright publishers.

2. Complete application was presented to the Lynn University IRB for full board review of this study.

3. Lynn University’s IRB approval ensured that all the necessary procedures for protecting participant’s rights were be adhered to and in compliance.

4. Parental consent forms included any possible risks relative to their child’s participation in the study.
5. The parental consent included the purpose for the study and actual procedures that will take place.

6. The child assent letters were read aloud to parental consent participating students and their signatures will be obtained before the PASS administration.

7. Letters of consent (Appendix C) included a confidentiality clause and a statement referring to the voluntary nature of this study and nonparticipation at any juncture may be done without penalty.

8. Each individual involved in this study was given a complete explanation of the purpose of study and how their participation is helpful to the study. Participants were required to sign an assent form (Appendix C).

9. All information saved from study were placed in protected computer files under password and user ID authorization. All record data and inventories were stored in a locked file and maintained for a year and destroyed in 5 years.

**Evaluation of Research Methods**

**Internal validity strengths**

1. A retrospective design is strength because it allows time to occur between the independent (block scheduling or traditional scheduling) and dependent variable (LAL achievement).

2. The study through its correlational (explanatory) design has accounted for some extraneous variables that may affect the study outcomes.

3. To maintain a homogeneous sample amongst both schools, students from similar backgrounds and populations were chosen to help eliminate threats to
student outcome. Thus, the more similar the two schools are the more extraneous variables are controlled in the study.

4. The traditional and block scheduling groups in the study come from schools in a large city and are located quite a distance from one another. Therefore, there is no contact that the researcher is aware of between the two groups of study participants which address threats to diffusion of treatment.

5. The inventory process in both schools was presented within the natural classroom setting which will minimize the Hawthorne effect.

6. Adopted Instruments included in the study are standardized measures of the student’s LAL achievement and academic self-concept and the instruments have been tested on numerous and diverse populations and adequate types of reliability and validity characteristics which enhances internal validity.

**Internal Validity Weaknesses**

1. A non-experimental design is not as strong as an experimental design because of a lack of manipulation and control.

2. The threat of maturation may occur due to the time between the 2004-2005 LAL achievement NJASK scores and the 2006-2007 scores due to students becoming more knowledgeable and receiving additional and varied types of LAL strategies between these two school years. However efforts to minimize these effects were included by the inclusion of a comparative group.
**External Validity Strengths**

1. The accessible population’s commonalities in both schools strengthen generalizability to the accessible population.

2. The PASS inventory was administered within the normal classroom setting of the school day, by the researcher with assistance from the school guidance counselor, a familiar face which helped to reduce the “Hawthorne effect.

**External Validity Weakness**

1. The major limitation of selection of only two schools limits generalizing the results of this study to other school populations in other areas of SES status, other academic ability groups (population validity) and other types of settings outside of the urban areas of Northern New Jersey (ecological validity).

3. The “Hawthorne Effect” may result due to both groups of students in the study realizing that they are being watched or that their responses are under study.

Chapter III presented the research methodology that examined the research questions and hypotheses associated with the impact of LAL scheduling (traditional verses block) and mediating student characteristics and academic self-concept, on student academic achievement as measured language art literacy scores for 6th graders in two urban schools. The proposed research design, target population, sampling plan, instrumentation, data collection, and data analysis was discussed, and an evaluation of the research methodology presented. Chapter IV will discuss the findings of this study.
CHAPTER IV

RESULTS

In Chapter IV, the primary purpose of the investigation was to present statistical data to examine whether urban sixth grade students, who participated in 90-minute block scheduling, had significantly greater academic self-concept (general ability, math, reading/spelling, penmanship, neatness, school satisfaction and school confidence) and a greater increase in Language Arts Literacy (LAL) than students who experienced traditional scheduling. A secondary purpose of the investigation was to determine if demographic, health, academic characteristics, and academic self-concept, are significant explanatory variables of a change in LAL in 6th grade urban school students experiencing traditional and block scheduling. The investigations further determined whether significant differences existed in demographic characteristics relative to traditional and block scheduling. Lastly, this study determined if significant differences existed in students’ perceptions of their abilities as assessed on the Perception of Ability Scale for Students (PASS) relative to their socio-economic status as measured by eligibility for reduced, paid, or free lunch. A data sheet completed by the examiner, which included retrospective and current data, provided a profile of the sample population. This data was examined statistically by the SPSS program and includes frequency distributions, means, T-Tests, multiple regression and Chi-square analysis.

Research Question 1

Demographic Profile of the Sample Population

Research question 1 aims to describe the characteristics of the population including demographic, health, disability and NJASK academic characteristics (4th and
6th grade), and academic self-concept measures (6th grade) in two urban schools participating in traditional and a block scheduling programs. The sample selected for the study included sixth grade students (N = 62) in two urban schools, one which implements a traditional scheduling language arts program (n = 30) and the other which implements a block scheduling (n = 32) approach to language arts literacy (LAL) instruction. The total population (N = 62) of students consisted of 29 (46.8%) males and 33 (53.2%) females. In terms of race/ethnicity, 77.4% (N = 48) were Black, 21% (N = 13) were Hispanic, and 1.6% (N = 1) were Asian. Thirty-four (54.8%) students were eligible for free lunch, 15 (24.2%) were eligible for paid lunch, and 13 (21%) were eligible for reduced lunch. Twelve (19.4%) were students in special education and 50 (80.6%) were students in general education. The mean age of the population was 12.11 (SD = .546) years with a range of 11 to 13 years. The PASS General Ability Score for this population ranged from 33 to 72 (M = 51.16, SD = 8.11). The New Jersey Assessment of Skills and Knowledge (NJASK) score when students were in the fourth grade ranged from 126 to 250 (M = 199.24, SD = 21.29). The sixth grade NJASK score ranged from 139 to 233 (M = 189.77, SD = 21.25). The NJASK change in scores ranged from -73 to 35 (M = -9.40, SD = 21.39). Table 1 displays the descriptives for the continuous variables.
### Table 1

**Descriptives for Both Groups**

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>62</td>
<td>11</td>
<td>13</td>
<td>12.11</td>
<td>.546</td>
<td>.077</td>
<td>.304</td>
</tr>
<tr>
<td>Pass General Ability Score</td>
<td>62</td>
<td>33</td>
<td>72</td>
<td>51.16</td>
<td>8.114</td>
<td>.258</td>
<td>.304</td>
</tr>
<tr>
<td>NJASK 4th Grade</td>
<td>62</td>
<td>126</td>
<td>250</td>
<td>199.24</td>
<td>21.289</td>
<td>-.735</td>
<td>1.773</td>
</tr>
<tr>
<td>NJASK 6th Grade</td>
<td>62</td>
<td>139</td>
<td>233</td>
<td>195.43</td>
<td>22.65</td>
<td>-.170</td>
<td>-.228</td>
</tr>
</tbody>
</table>

For students who received traditional scheduling, the mean age of the population was 12.07 (SD = .583) years with a range of 11 to 13 years. The PASS Full Scale Scores for this population ranged from 33 to 70 (M = 51.50, SD = 9.15). The NJASK score when students were in the fourth grade ranged from 155 to 250 (M = 202.3, SD = 20.60). The sixth grade NJASK score ranged from 139 to 233 (M = 195.43, SD = 22.65). The NJASK change in scores ranged from -44 to 33 (M = -6.87, SD = 21.05). Table 2 displays the descriptive for students who received traditional scheduling.
Table 2

Descriptives for Traditional Scheduling

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std.</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Std. Error</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>30</td>
<td>11</td>
<td>13</td>
<td>12.07</td>
<td>.583</td>
<td>.003</td>
<td>.427</td>
<td>.229</td>
<td>.833</td>
</tr>
<tr>
<td>Pass General Ability Score</td>
<td>30</td>
<td>33</td>
<td>70</td>
<td>41.50</td>
<td>9.145</td>
<td>-.078</td>
<td>.427</td>
<td>-.270</td>
<td>.833</td>
</tr>
<tr>
<td>NJASK 4th Grade</td>
<td>30</td>
<td>139</td>
<td>233</td>
<td>195.43</td>
<td>22.648</td>
<td>-.327</td>
<td>.427</td>
<td>-.172</td>
<td>.833</td>
</tr>
<tr>
<td>NJASK Change</td>
<td>30</td>
<td>-44</td>
<td>33</td>
<td>-6.87</td>
<td>21.054</td>
<td>.126</td>
<td>.427</td>
<td>-.826</td>
<td>.833</td>
</tr>
</tbody>
</table>

For students who received block scheduling, the mean age of the population was 12.16 \((SD = .515)\) years with a range of 11 to 13 years. The PASS Full Scale Score for this population ranged from 39 to 72 \((M = 50.84, SD = 7.15)\). The NJASK score when students were in the fourth grade ranged from 126 to 233 \((M = 196.38, SD = 21.85)\). The sixth grade NJASK score ranged from 144 to 216 \((M = 184.87, SD = 18.67)\). The NJASK change in scores ranged from -73 to 35 \((M = -11.78, SD = 21.76)\). Table 3 displays the descriptives for students who received block scheduling.
Table 3

Descriptives for Block Scheduling

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Age</td>
<td>32</td>
<td>11</td>
<td>13</td>
<td>12.16</td>
<td>.515</td>
<td>.258</td>
<td>.414</td>
</tr>
<tr>
<td>Pass General Ability Score</td>
<td>32</td>
<td>39</td>
<td>72</td>
<td>50.84</td>
<td>7.149</td>
<td>.829</td>
<td>.414</td>
</tr>
<tr>
<td>NJASK 4th Grade</td>
<td>32</td>
<td>126</td>
<td>233</td>
<td>196.38</td>
<td>21.845</td>
<td>-1.229</td>
<td>.414</td>
</tr>
<tr>
<td>NJASK 6th Grade</td>
<td>32</td>
<td>144</td>
<td>216</td>
<td>184.47</td>
<td>18.670</td>
<td>-.395</td>
<td>.414</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Histograms of the continuous variables for traditional and block schedules were generated. However, no histogram was generated for the age variable because there were only three values (11, 12, and 13) for age. The skewness statistic for the PASS Full Scale Score for traditional schedules was -.078 (SE = .427). Skewness is the tilt or extent a distribution deviates from symmetry around the mean. Skewness scores of near zero indicate a shape that is symmetric or approximating normality. Values between -2 and +2 are considered acceptable. The kurtosis statistic was - .270 (SE = .833). Kurtosis is the peakedness of the distribution of scores. Kurtosis scores of near zero indicate a shape that is symmetric or approximating normality. Values between -2 and +2 are considered acceptable. For block scheduling, the skewness statistic for the PASS Full Scale Score was .829 (SE = .414). The kurtosis statistic was 1.69 (SE = .809). These data are presented in Figure 1.
Figure 1

Pass Full Scale Score by Schedule
Research Question 2

Research question 2 aimed to determine differences in fourth grade baseline demographic, health, academic data in middle age school students who later experienced traditional scheduling or block scheduling in 5th and 6th grades. The student record data form demonstrated that there was no difference in 4th grade baseline data in the areas of demographic, health and student disability characteristics in either school. Tables 2 describe baseline NJASK 4th grade scores for traditional students ranged from 155 to 250 ($M=202.3$, $SD=20.60$), the 6th grade NJASK scores ranged from 139 to 233 ($M=195.43$, $SD=22.65$). The NJASK change between 4th and 6th grade scores ranged from -44 to 33 ($M = -6.87$, $SD = 21.05$). Table 3 describes the NJASK differences for the block scheduling student 4th and 6th grade scores. The block scheduling group scores when students were in the 4th grade ranged from 126 to 233 ($M= 196.38$, $SD= 21.85$). The 6th grade administration of the NJASK assessment indicated a score range of 144 to 216 ($M=184.87$, $SD=18.67$). The NJASK change scores (6th minus 4th grade scores) ranged from -73 to 35 ($M= -11.75$, $SD= 21.76$). All skewness analysis for these scores in both traditional and block scheduling school indicated mean variations within the acceptable range. The skewness statistic for the NJASK 4th grade for traditional schedules was .126 ($SE = .427$). The kurtosis statistic was .232 ($SE = .833$). For block scheduling, the skewness statistic for the NJASK 4th grade was -1.23 ($SE = .414$). The kurtosis statistic was 2.79 ($SE = .809$). These data are presented in Figure 2.
Figure 2

NJASK 4th Grade Scores by Schedule
The skewness statistic for the NJASK 6th grade for traditional schedules was -0.327 (SE = 0.427). The kurtosis statistic was -0.172 (SE = 0.833). For block scheduling, the skewness statistic for the NJASK 6th grade was -0.395 (SE = 0.414). The kurtosis statistic was -0.304 (SE = 0.809). These data are presented in Figure 3.

Figure 3

NJASK 6th Grade Scores by Schedule
The skewness statistic for the NJASK change variable for traditional schedules was -.327 (SE = .427). The kurtosis statistic was -.826 (SE = .833). For block scheduling, the skewness statistic for the NJASK change variable was -.330 (SE = .414). The kurtosis statistic was 1.09 (SE = .809). These data are presented in Figure 4.

![Figure 4: NJASK Change by Schedule](image)

**Figure 4**

**NJASK Change by Schedule**

The researcher used the chi-square test to examine differences in demographic characteristics in order to determine if they were equivalent for students who received traditional scheduling and students who received block scheduling. Thirteen males
(44.8%) received traditional scheduling compared to 16 males (55.2%) who received block scheduling. Seventeen females (51.5%) received traditional scheduling compared to 16 females (48.5%) who received block scheduling. Gender was not statistically different between traditional and block schedules, $X^2(1, N = 62) = .276, p = .599$. Results are displayed in Table 4 and Figure 5.

Table 4

*Gender by Schedule*

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Traditional Count</th>
<th>Male Count</th>
<th>Female Count</th>
<th>Total Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% within Schedule</td>
<td>43.3%</td>
<td>56.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>44.8%</td>
<td>51.5%</td>
<td>48.4%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>21.0%</td>
<td>27.4%</td>
<td>48.4%</td>
</tr>
<tr>
<td>Block</td>
<td>Count</td>
<td>16</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>% within Schedule</td>
<td>50.0%</td>
<td>50.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>55.2%</td>
<td>48.5%</td>
<td>51.6%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>25.8%</td>
<td>25.8%</td>
<td>51.6%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>29</td>
<td>33</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>% within Schedule</td>
<td>46.8%</td>
<td>53.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>46.8%</td>
<td>53.2%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
In terms of race/ethnicity and schedules, 25 (52.1%) students who received traditional scheduling were Black, 4 (30.8%) were Hispanic, and 1 (100%) was Asian. The students who received block scheduling consisted of 23 (47.9%) Blacks, 9 (69.2%) Hispanics and none were (0%) Asian. These differences were not statistically significant, \( \chi^2(2, N = 62) = 2.95, p = .229 \). Results are displayed in Table 5 and Figure 6.
Table 5

Race/Ethnicity by Schedule

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Traditional</th>
<th>Count</th>
<th>Black</th>
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<td>25</td>
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<td>30</td>
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<tr>
<td>% within Schedule</td>
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<td></td>
<td>83.3%</td>
<td>13.3%</td>
<td>3.3%</td>
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<td>% within Race/Ethnicity</td>
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<td></td>
<td>52.1%</td>
<td>30.8%</td>
<td>100.0%</td>
<td>48.4%</td>
</tr>
<tr>
<td>% of Total</td>
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<td></td>
<td>40.3%</td>
<td>6.5%</td>
<td>1.6%</td>
<td>48.4%</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Block</th>
<th>Count</th>
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<th>23</th>
<th>9</th>
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</thead>
<tbody>
<tr>
<td>% within Schedule</td>
<td></td>
<td></td>
<td>71.9%</td>
<td>28.1%</td>
<td>.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% within Race/Ethnicity</td>
<td></td>
<td></td>
<td>47.9%</td>
<td>69.2%</td>
<td>.0%</td>
<td>51.6%</td>
</tr>
<tr>
<td>% of Total</td>
<td></td>
<td></td>
<td>37.1%</td>
<td>14.5%</td>
<td>.0%</td>
<td>51.6%</td>
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</table>

<table>
<thead>
<tr>
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<th>Count</th>
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<th>62</th>
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<tbody>
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<td>% within Schedule</td>
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<td></td>
<td>77.4%</td>
<td>21.0%</td>
<td>1.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% within Race/Ethnicity</td>
<td></td>
<td></td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% of Total</td>
<td></td>
<td></td>
<td>77.4%</td>
<td>21.0%</td>
<td>1.6%</td>
<td>100.0%</td>
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</tbody>
</table>
In terms of eligibility for lunch and schedules, 52.9% \((n = 18)\) of students received free lunch, traditional scheduling, 53.3% \((n = 8)\) paid for their lunches, and 30.8% \((n = 4)\) of students were on reduced lunches. Of those students who received block schedules, 47.1% \((n = 16)\) were on free lunch, 46.7% \((n = 7)\) paid for their lunches, and 69.2% \((n = 9)\) were on reduced lunch. These differences were not statistically significant,
$\chi^2(2, N = 62) = 2.05, \ p = .36$.

Results are displayed in Table 6 and Figure 7.

### Table 6

*Lunch Eligibility by Schedule*

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Traditional Count</th>
<th>Lunch Eligibility</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Free</td>
<td>Paid</td>
<td>Reduced</td>
<td>Total</td>
</tr>
<tr>
<td>Block</td>
<td>Count</td>
<td>16</td>
<td>7</td>
<td>9</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>% within Schedule</td>
<td>50.0%</td>
<td>21.9%</td>
<td>28.1%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>% within Lunch Eligibility</td>
<td>47.1%</td>
<td>46.7%</td>
<td>69.2%</td>
<td>51.6%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>25.8%</td>
<td>11.3%</td>
<td>14.5%</td>
<td>51.6%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>34</td>
<td>15</td>
<td>13</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>% within Schedule</td>
<td>54.8%</td>
<td>24.2%</td>
<td>21.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>% within Lunch Eligibility</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>54.8%</td>
<td>24.2%</td>
<td>21.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Crosstab
In terms of special education and schedule, 66.7% ($n = 8$) of students in special education received traditional scheduling compared to 33.3% ($n = 4$) of students in special education who received block schedules. This difference was not statistically
significant, \( X^2(1, N = 62) = 1.99, p = .158 \). These results are displayed in Table 7 and Figure 8.

### Table 7

**Disability/Special Education by Schedule**

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Traditional</th>
<th>Count</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% within Schedule</td>
<td>26.7%</td>
<td>73.3%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% within Disability/Special Education</td>
<td>66.7%</td>
<td>44.0%</td>
<td>48.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% of Total</td>
<td>12.9%</td>
<td>35.5%</td>
<td>48.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Block</th>
<th>Count</th>
<th></th>
<th>4</th>
<th>28</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% within Schedule</td>
<td>12.5%</td>
<td>87.5%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within Disability/Special Education</td>
<td>33.3%</td>
<td>56.0%</td>
<td>51.6%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>6.5%</td>
<td>45.2%</td>
<td>51.6%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total</th>
<th>Count</th>
<th></th>
<th>12</th>
<th>50</th>
<th>62</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% within Schedule</td>
<td>19.4%</td>
<td>80.6%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within Disability/Special Education</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>19.4%</td>
<td>80.6%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>
There were a total of five alternative hypotheses tested in this study. The hypotheses were tested using $t$-tests for independent samples and multiple regression analysis. The following provides a discussion of the alternative hypotheses tested in this investigation.
Research Hypothesis 1

Compared with sixth grade urban school students that experienced traditional scheduling, sixth grade urban school students that participate in 90 minute block scheduling have significantly greater academic self-concept ($H_{1a}$) and a greater increase in LAL ($6^{th}$ grade NJASK minus $4^{th}$ grade scores).

$H_{1a}$ stated that compared with sixth grade urban school students that experience traditional scheduling, sixth grade urban school students that participate in 90-minute block scheduling have significantly greater academic self-concept (general ability, math, reading/spelling, penmanship, neatness, school satisfaction and school confidence). Students who received traditional scheduling ($M = 51.50, SD = 9.15$) had similar academic self-concept as students who participated in block scheduling ($M = 50.84, SD = 7.15$), $t(60) = .316, p = .38$, one-tail. Therefore, the null hypothesis is accepted and $H_{1a}$ is rejected.

$H_{1b}$ stated that compared with sixth grade urban school students that experience traditional scheduling, sixth grade urban school students that participate in 90-minute block scheduling have significantly greater increase in LAL ($6^{th}$ grade NJASK minus fourth grade NJASK scores). Students who received traditional scheduling ($M = -6.87, SD = 21.05$) had similar LAL ($M = -11.78, SD = 21.76$) as students who participated in block scheduling, $t(60) = .903, p = .19$, one-tail. Therefore, the null hypothesis is accepted and $H_{1b}$ is rejected.
Research Hypothesis 2

Demographic, health, academic characteristics (4\textsuperscript{th} and 6\textsuperscript{th}), and 6\textsuperscript{th} grade academic self-concept are significant explanatory variables of a change in LAL (5\textsuperscript{th} grade minus 4\textsuperscript{th} grade scores) in 6\textsuperscript{th} grade urban school children in traditional and block scheduling settings.

H\textsubscript{2a} stated that demographic, health, academic characteristics (fourth through sixth grades), and sixth grade academic self-concept, are significant explanatory variables of a change in LAL (6th grade NJASK minus fourth grade NJASK scores) in sixth grade school students experiencing traditional scheduling. The dependent variable of “NJASK change” was transformed to its reciprocal, $\frac{1}{NJASK\text{Change}}$ in order to decrease the variance. Several models were tested. The final model contained the variables PASS Full Scale Score, Age, and Lunch Eligibility. The multiple R was .545. $R^2 = .297$. The adjusted $R^2 = .216$. The equation for the regression model is as follows:

$$\frac{1}{NJASK\text{Change}} = 1.704 - .127(Age) + .121(\text{Lunch Eligibility}) - .006(\text{PASS Full Scale Score})$$

This model was statistically significant, $F(3, 29) = 3.66, p = .025$. However, health was not a significant predictor. Therefore, H\textsubscript{2a} was rejected. Table 8 provides the regression coefficients used in the model and their associated significance. Figure 9 provides a scatterplot of the regression standardized predicted values with the dependent variable of $\frac{1}{NJASK\text{Change}}$. 

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Table 8

Regression Coefficients for Traditional Schedule

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficients</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>1.704</td>
<td>.760</td>
<td>2.240</td>
<td>.034</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>- .127</td>
<td>.059</td>
<td>-2.139</td>
<td>.042</td>
</tr>
<tr>
<td></td>
<td>Lunch Eligibility</td>
<td>.121</td>
<td>.051</td>
<td>2.368</td>
<td>.026</td>
</tr>
<tr>
<td></td>
<td>Pass General Ability Score</td>
<td>-.006</td>
<td>.004</td>
<td>-1.472</td>
<td>.153</td>
</tr>
</tbody>
</table>

a. Dependent Variable: 1/NJASK Change
Figure 9

*Standardized Predicted Values for Traditional Schedule*

$H_{2b}$ stated that demographic, health, academic characteristics (fourth through sixth grades), and sixth grade academic self-concept, are significant explanatory variables of a change in LAL ($6^{th}$ grade NJASK minus fourth grade NJASK performance scores) in the group of 6th grade urban school students experiencing block scheduling. The researcher used Cook’s Distances to identify and exclude two outliers. Several models were tested. The best model contained the variables Age, Lunch Eligibility, Disability/Special
Education, and PASS Full Scale Score. The multiple $R$ was .623. $R^2 = .388$. The adjusted
$R^2 = .29$. The equation for the regression model is as follows:

$$\frac{1}{NJASKChange} = .316 - .079 \text{ (Age)} - .061 \text{ (Lunch Eligibility)} + .162 \text{ (Disability/Special Education)} + .008 \text{ (PASS Full Scale Score)}.$$

This model was statistically significant, $F(4, 29) = 3.97, p = .013$. Therefore, $H_{2b}$ was accepted and the null hypothesis is rejected.

Table 9 provides the regression coefficients used in the model and their associated significance. Figure 10 provides a scatterplot of the regression standardized predicted values.

**Table 9**

*Regression Coefficients for Block Schedule*

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>.316</td>
<td>.500</td>
</tr>
<tr>
<td>Age</td>
<td>-.079</td>
<td>.041</td>
</tr>
<tr>
<td>Lunch Eligibility</td>
<td>-.061</td>
<td>.026</td>
</tr>
<tr>
<td>Disability/Special Education</td>
<td>.162</td>
<td>.068</td>
</tr>
<tr>
<td>Pass General Ability Score</td>
<td>.008</td>
<td>.003</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: $1/NJASK$ Change*
Figure 10

*Standardized Predicted Values for Block Schedule*

H$_{2c}$ stated that Sixth grade middle school students experiencing block scheduling have greater explanatory power of the relationship of demographic, health, academic characteristics (fourth through sixth grades), academic self-concept, and gain in LAL ($6^{th}$ grade NJASK minus fourth grade NJASK scores) than sixth grade urban school students experiencing traditional scheduling. The adjusted $R^2$ for the traditional schedule was .216, whereas the adjusted $R^2$ for the block schedule was .29. The chi-square test was
used to test for differences in adjusted $R^2$ for the regression models. There was no significant difference between the $R^2$ of the traditional model and the $R^2$ of the block model, $X^2(1, n = 2) = .084, p = .77$. Therefore, $H_{2e}$ is rejected and the null hypothesis is accepted.

**Ancillary Analysis**

Using a one-way ANOVA, the researcher conducted an ancillary analysis with lunch eligibility on the dependent variable of PASS Full Scale Score. Students on free lunch scored a mean of 48.18 ($SD = 7.91$). Students on paid lunch scored a mean of 54.67 ($SD = 7.68$). Students on reduced lunch scored a mean of 54.92 ($SD = 6.16$). These differences were statistically significant, $F(2, 61) = 5.92, p = .005$. A Scheffe Post Hoc Comparison indicated that the significant differences were between free lunch and paid lunch and between free lunch and reduced lunch. Results are displayed in Table 10, Table 11, and Figure 11.

**Table 10**

**Descriptives for Lunch Eligibility and PASS Full Scale Score**

<table>
<thead>
<tr>
<th>Pass General Ability Score</th>
<th>95% Confidence Interval for Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>Free</td>
<td>34</td>
</tr>
<tr>
<td>Paid</td>
<td>15</td>
</tr>
<tr>
<td>Reduced</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
</tr>
</tbody>
</table>
Table 11

Scheffe Post Hoc Comparison

Multiple Comparisons

Dependent Variable: Pass General Ability Score

<table>
<thead>
<tr>
<th>Lunch Eligibility (I)</th>
<th>Lunch Eligibility (J)</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td>Paid</td>
<td>-6.490*</td>
<td>2.334</td>
<td>.026</td>
<td>-12.35</td>
</tr>
<tr>
<td></td>
<td>Reduced</td>
<td>-6.747*</td>
<td>2.455</td>
<td>.029</td>
<td>-12.91</td>
</tr>
<tr>
<td>Paid</td>
<td>Free</td>
<td>6.490*</td>
<td>2.334</td>
<td>.026</td>
<td>.63</td>
</tr>
<tr>
<td></td>
<td>Reduced</td>
<td>-.256</td>
<td>2.853</td>
<td>.996</td>
<td>-7.42</td>
</tr>
<tr>
<td>Reduced</td>
<td>Free</td>
<td>6.747*</td>
<td>2.455</td>
<td>.029</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>Paid</td>
<td>.256</td>
<td>2.853</td>
<td>.996</td>
<td>-6.91</td>
</tr>
</tbody>
</table>

*: The mean difference is significant at the .05 level.
Figure 11

*Lunch Eligibility and PASS Full Scale Score*

Table 12 provides a summary of all statistical tests and hypotheses conducted.
### Table 12

#### Summary of Statistical Tests & Hypotheses

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>$p$</th>
<th>Null Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender by Schedule</td>
<td>0.6</td>
<td>Accept</td>
</tr>
<tr>
<td>Race/Ethnicity by Schedule</td>
<td>0.23</td>
<td>Accept</td>
</tr>
<tr>
<td>Lunch Eligibility by Schedule</td>
<td>0.36</td>
<td>Accept</td>
</tr>
<tr>
<td>Disability/Special Education by Schedule</td>
<td>0.16</td>
<td>Accept</td>
</tr>
</tbody>
</table>

#### Testing of Hypotheses

- $H_{1a}$: Greater academic self-concept  
  - $p = 0.38$  
  - Null Hypothesis: Accept

- $H_{1b}$: Greater increase in LAL  
  - $p = 0.19$  
  - Null Hypothesis: Accept

- $H_{2a}$: Explanatory variables of a change/traditional  
  - $p = 0.025$  
  - Null Hypothesis: Reject*

- $H_{2b}$: Explanatory variables of a change/block  
  - $p = 0.013$  
  - Null Hypothesis: Reject*

- $H_{2c}$: Greater Explanatory power  
  - $p = 0.77$  
  - Null Hypothesis: Accept

#### Ancillary Analysis

- Lunch Eligibility & PASS General Ability Score  
  - $p = 0.005$  
  - Null Hypothesis: Reject*
CHAPTER V

DISCUSSION

Chapter V presents a discussion of results found in Chapter IV that are relative to the analysis of two urban 6th grade scheduling programs for LAL. These two types of schedules, a 45 minute traditional and a 90 minute block were examined in order to determine student characteristics including demographics, health, academic performance and academic self-concept. The academic performance portions were measured over a period of two years using 2004 and 2006 administration of the state-wide NJASK scores. Student academic self-concept was measured using the PASS, and administered by the examiner in this study. The study population consisted of a total sample of 62 students. There were 30 traditional students and 32 block scheduling students. According to Deuel (1999), Mattox et al, (2005) and Nichols (2005), more studies are needed that addresses middle school age populations that measure the effects of language arts strategies and more specifically block scheduling.

The continuous variables, LAL achievement and academic self-concept, were measured using the NJASK total, LAL score and the PASS Full Scale score, respectively. In determining significance for these variables, explanatory variables, LAL performance, and academic self-concept, scores were investigated to determine whether variables caused a change in LAL performance over a two year period of time. Both descriptive and inferential statistics were used to analyze the two research questions and five hypotheses in this study. The findings of this study indicates that there is no significant difference between block schedule school and traditional school when comparing 4th grade and 6th grade demographic, health, academic performance and academic self-
concept of students in a 6th grade setting (research question 2). Findings rejected both hypotheses (H1a) and (H1b) that there is greater academic self-concept and LAL performance in a block scheduling school than in a traditional school. Hypothesis H2a was found to be statistically significant and partially accepted when testing explanatory variables and in determining whether explanatory variables of demographic, health, academic characteristics and academic self-concept were significant in justifying a change in LAL (6th grade minus 4th grade) in 6th grade students in the traditional scheduling school. Explanatory variables for students in block scheduling schools were used to determine the dependent variable for “change in NJASK performance” (6th grades minus 4th grade scores), in the 6th grade student sample statistical analysis partially rejected H2a due to the variable health not being a predictor of change in NJASK scores (6th minus 4th grade scores). Findings indicated that the hypothesis (H2b) was accepted when evaluating the block student’s explanatory variables (4th through 6th grades) to determine whether demographic, health, disability, and 6th grade self-concept data had greater explanatory power in determining the gain in NJASK performance scores (6th grade minus 4th grade scores). The regression model included the variables of age, lunch eligibility, disability and PASS Full Scale score (academic self-concept). These variables did affect a change in NJASK scores (6th minus 4th grades) for the block scheduling student sample.

Lastly, when the explanatory variables from both traditional and block schools were compared to determine whether block scheduling had a greater explanatory power in justifying a gain in LAL (6th grade minus 4th grade scores), the adjusted R variables of
the traditional model and block model were not statistically significant, Therefore the null hypothesis was accepted and $H_{2e}$ was rejected.

An ancillary analysis evaluated the relationships between two explanatory variables such as lunch eligibility and PASS scores, which also revealed a positive correlation between the two areas. The study’s interpretations, limitations, conclusions and recommendations will be discussed in the culmination phase of this research.

**Interpretations**

The findings in Chapter IV of this study helped to compare current literature and to explain all variables in this section. The results presented will be used to contradict and align with past research.

**Descriptive Characteristics of Sample**

**Total Population Descriptives**

The total sample consisted of 30 traditional school participants and 32 block schedule participants ($n=62$). The gender characteristics of the total population consisted of 29 males and 33 females the average age of the 6th grade total sample was 12.11. The ethnic contributions to this research revealed that 77% of the total population was Black, 21% were of Hispanic descent and 1.6 % of the participants were Asian. The mean age of the total population was 12.11 years. The total sample ranged in age of 11 to 13 years old.

An analysis to determine the socioeconomic status of the sample was information ascertained from both schools' lunch eligibility forms. These forms indicated that of the total population, 54.8 % were eligible for free lunch status, 24.2 % were eligible for paid
lunch and 21% were eligible for reduced lunch services. Minority populations are disproportionately some of the poorest populations which effect student progress and learning (Snow et al, 1998; Harris, 2003; Sanders, 2000; Sturtevant, 2003). The populations in this study come from two economically disadvantaged locations. Fifty-four percent of the sample, which mirrors a significant part of the school population, engages in free lunch programs an indication of economic hardship.

The health category concentrated on those students with a categorical classification of learning disabled or special education. The health descriptions of the total sample revealed that 19.4% of the total population was classified as health impaired or pursuing special education program; 80.6% of the total population were non-disabled students. The mildly disabled students in the sample are educated amongst the general education population and were not placed in restrictive settings.

The 6th grade PASS Full Scale score and NJASK score descriptive (4th through 6th grades) indicated that the Pass Full Scale scores of the total sample ranged from a standard score of 33 to 72. The PASS mean score for the total population was 51.16 which indicate scores within the norm for both school samples. The NJASK performance utilized scores from the 4th grade and 6th grade administrations. There was a 4th grade and 6th grade LAL score for every student in the sample. The LAL standardized total scores revealed a score range of 126 (partially proficient) to 250 (advanced proficient). The 4th grade administration indicated a total score range from 139 (partially proficient) to 233 (proficient). The fourth grade analysis of total NJASK scores showed no advanced proficient scores and the 6th grade total score administration slightly made the cut-off with a high score of 250 which is the beginning score for advanced proficiency status.
The NJASK student sample scores were basically the same amongst both schools when obtained in both grades.

**Traditional Versus Block School Descriptive**

Chi-square was used to determine the differences in all demographic characteristics including PASS and NJASK scores, as well as to determine an equivalency between the two school samples. The differences in traditional and block schools as it relates to sample populations within both schools indicates that both school samples had very similar counts with the block scheduling school being slightly larger (n=32) than the traditional school’s total sample population (n=30). These numbers were significantly smaller than the number of students made available to this study. Moreover, many of the students were reluctant to send back permission slips even after the examiner made script calls to each student’s home.

Additionally, some students and parents refused the opportunity to participate. A reluctance to return permission slips and the refusal to participate created a decline in the sample pool from anticipated to actual student participation. According to Creswell (2005), examiners will need to employ a sufficient amount of students to ensure that the statistical procedures used in this study will incur a sufficient sample to obtain adequate results. A rough estimate of these numbers includes 30 participants needed in each group for a correlational design. Therefore, the sample numbers in both groups also appeared to be respectable for analysis.

The gender spread between both scheduling schools revealed that there was a total of 44.8 % of males who received traditional scheduling compared to 55.2 % of males who received block scheduling. A total of 51.5 % of females received block scheduling.
compared to 48.5% who received block scheduling. Gender samples in the study proved
not to be statistically significant ($p=.599$), although the block schedule school’s male-
female ratio was similar, the traditional profile demonstrated that females had a slight
gender on the male sample.

The traditional school sample consisted of 52.1% Black students compared to
47.9% of the traditional population, 30.8% Hispanic compared to 69.2% of the
traditional sample, and 0% of the block sample was Asian compared to 100% (all of the
Asian students) were in the traditional population. Ethnic percentages between the two
schools were not statistically significant. The Black student population was the largest
population in both traditional and block study schools as well as in each sample.
Research has demonstrated that schools with large minority populations tend to suffer
from inadequate school materials, facilities and teacher qualifications (Berends et al,
2002; Schnieder, 2004; Orfield & Lee, 2005; House, 2005; Sanders, 2000; Darling-
Hammond, 2000). Previous research has shown that Blacks and Hispanics fall below
their Caucasian and Asian counterparts when measuring academic performance
(Donahue, 1998). The findings of this study revealed no statistical significance in scores
between the ethnic populations in the study and the two school types analyzed, however
there still continues to be a need for research that addresses ethnic and minority
populations (Mattox et al, 2005; Nichols, 2005).

The socioeconomic investigation revealed no significant differences between the
two school samples and lunch eligibility status. The analysis indicated that 52.9% of the
total free lunch samples were traditional students compared to 47.1% of block students,
and 53.3% were paid traditional students compared to 46.7% within the block sample,
and 30.8% traditional reduced lunch participants compared to 62.2% in the block scheduling sample. There were slightly more students in the traditional setting categorized as "free and paid" status than in the block schedule sample. A higher percentage of the traditional sample was "reduced lunch" students than in the block scheduling school. Although, the sample within the block scheduling school consisted of students who had fewer "free and paid" lunch eligibility status. The reduced lunch status of the block scheduling students had a relatively larger percentage (29%) than the traditional school participants. The Public School Review (2006) examined both school districts, and found that 65% of the children in the block schedule district received "free" lunch compared to 50% of students in the traditional district. Findings in this study do not reflect the actual socioeconomic status within their larger school districts which depicts an overall lower socioeconomic disposition.

Although special education differences were not statistically significant between the two schools, the traditional sample had a larger (66.7%) sample of special education participants than the block scheduling special education sample (33.3%).

Upon examinations of both the dependent variables of PASS and NJASK performance, much can be learned about both samples of the students' academic self-concept relative to their educational programming and abilities, as well as how these students have progressed in their LAL literacy within a 2 year time span. The first investigation will discuss the traditional sample and their 6th grade PASS performance scores. The traditional students with a mean age of 12.07 received a group mean of 51.50 on their PASS administration. The block schedule 6th grade sample mean age was 12.16 with a PASS mean of 50.84. These academic self-concept scores, although they show no
significance when both schools were compared, indicates that all scores for the total Pass Full Scale were within the accepted range for the 6th grade sample in both the traditional and block scheduling school. Scores, however did appear to spread more amongst the traditional sample, whereas in the block scheduling analysis there appeared to be less variability with more of the scores clustering closer toward the mean of 50.84. The scores on the PASS Full Scale are from 0-70, with high scores indicative of a positive academic self-concept (Boersma & Chapman, 1992).

The results of the group administration rendered a group PASS Full Scale mean of 51.50 for the traditional group and a mean of 50.84 for the block group. These results indicate that although there was no significant difference between the PASS scores between the two groups, the examination of PASS scores from both schools indicated that they were within the norm with a mean of 46.9. The authors do warn, however, that local norms should be established and used. The norm population for the PASS consisted of individuals across three states with small minority populations inclusive of populations from countries such as Canada, New Zealand (Boersma & Chapman, 1992; Hay et al, 1997), and Africa (Akande, 1997). Authors Boersma & Chapman, (1992) suggest that adequate indicators of actual self-concept measures need further evaluation to determine whether results signify actual academic work and behavior or overall student attitude.

The traditional school’s NJASK assessments taken in 4th grade and 6th grade were examined. When comparing NJASK scores from the traditional and block schools, the data indicated that the scores for both the traditional and block groups were within acceptable limits. The 4th grade NJASK traditional school sample received a mean score of 202.3 compared to a 6th grade NJASK mean score of 194.43. The block schedule
samples’ analysis of 4th and 6th grade scores demonstrated a 4th grade mean score of 196.38 compared with a 6th grade mean score of 184.87. Skewness and kurtosis tables (see Figure 2 and Figure 3) visually display the results of both school and year comparisons. Explanatory variables in 4th grade were the same as those taken in 6th grade except for the dependent variable, NJASK scores (6th grade minus 4th grade scores). Administration in both 4th and 6th NJASK grades for traditional and block scheduling samples were within acceptable standards.

The skewness and kurtosis of the NJASK change variable was also within normal limits. This result demonstrates that not only were these populations similar in demographic and health characteristics (4th through 6th grades), they were also alike in 6th grade academic self-concept, and in their academic achievement levels of 4th and 6th grades. The differences between traditional sample and block sample were insignificant. These findings are similar to previous findings in block scheduling research indicative of little or no differences between schools with block scheduling and/or a lack of indication that block scheduling students did better academically than traditional students (Nicolas, 2005; Bateson, 1990; Rapheal et al, 1986). Other researchers proclaimed that the effects of block scheduling on student achievement remains inconclusive, especially for students working at grade level or above (Irmsher, 1996; CER, 1996; Lindsay, 2005).

**Inferential Hypothesis Testing**

The five hypotheses in this research utilized t-tests which were used to compare means in the traditional and block schedule sample. Multiple regression analyses were used to study the relationships between one dependent variable and one or several independent variables used to predict outcomes in this study. The adjusted $R^2$, a better
population estimate, was used to target the proportion of variance or the amount of variance within the dependent variable that is caused by the independent variable.

**Block Scheduling Has Greater Academic Self-concepts (H₁a)**

The first Hypothesis (H₁a) compared both groups of students in traditional and block scheduling schools to determine which school had a significantly greater academic self-concept. The findings revealed that those students in a 90-minute block schedule and those in a 45-minute traditional setting had similar academic self-concept. The similarities within both schools are apparent when both samples are examined.

According to several studies (Halsey, 2004; Pajares & Schunk, 2001; Boresma & Chapman, 1992; Akande, 1997), a student's academic self-concept, relative to their academic abilities and their perceptions, are strongly based on their academic and instructional programs, as well as their school environment. Both schools in this study have implemented mandatory remedial programs and lessons that seek to improve academic functioning as well as enhance social and emotional growth.

This implementation may offer some reasoning for the similarities in academic self-concept PASS Full Scale scores between the two schools and the fact that both populations had similar demographic characteristics and academic functioning on the performance measure. The block scheduling 90-minute period acts as a strategy of extended time to infuse various learning modules into their instructional time. Inadvertently, the types of materials and lessons utilized in the classroom during LAL instruction, also play a role in the academic impact on a student's LAL learning, and lifts a student's morale (Irmsher, 1996; Lindsay, 2005; CER, 1996; Nichols, 2005; Slate & Jones, 2000). However, in this research there clearly was no difference observed between
the traditional and block scheduling group’s PASS scores when the total scale score was assessed on both samples.

**Block Scheduling Has A Greater Increase in LAL (H_{1b})**

The second hypothesis (H_{1b}) compared traditional and block students to determine whether the block scheduling group had a significantly greater increase in LAL achievement (6^{th} grade minus 4^{th} grade NJASK scores). This hypothesis was rejected. The data demonstrated that there was no statistical difference between the two groups of students NJASK scores (6^{th} grade scores minus 4^{th} grade scores). Studies have been found to be still inconclusive about the impact block scheduling has on student academic performance. There is no substantial difference in block scheduling programs in certain groups of students, or between students in traditional and block scheduling settings (Irmsher, 1996; CER, 1996; Lindsay, 2005; Bateson, 1990; Rapheal et al, 1986). In contrast, studies do strongly argue the benefits of block scheduling and how this strategy can improve academic achievement both in standardized measures and grade scores (Deuel, 1999; Mattox, 2005; Nichols, 2005). Moreover, demographic, health, and academic self-concept similarities between the school samples can also determine similarities in LAL functioning scores (Hay et al, 1997; Schneider, Mattox et al, 2005; Nichols, 2005).

**Explanatory Variables Determine Change in Traditional Sample (H_{2a})**

The third hypothesis (H_{2a}) looked at demographics and health. Academic characteristics (4^{th} through 6^{th} grades), 6^{th} grade academic self-concept, and LAL achievement (6^{th} grade minus 4^{th} grade NJASK scores) in 6^{th} grade students experiencing a traditional 45-minute LAL instructional period. The variable of “NJASK Change” was
reciprocated in order to decrease variability. Of the several models that were tested, the model which included PASS score, age and lunch eligibility proved to be statistically significant in the traditional sample, however the variable health was not a predictor of NJASK Change, therefore the third hypothesis ($H_{2a}$) was partially accepted for the variables PASS Total score, age, and lunch eligibility. The explanatory variable “health” was not a predictor of NJASK Change for the traditional group. The health variable referred to children who were disabled or placed in a least restrictive form of special education services; these children were placed in a general education class with in-class help from a special education teacher one or two periods a day. The health variable was not a predictor of change in NJASK scores for this group, therefore the disability of a student did not affect any relationship between “NJASK Change” and the “health” variable.

Researchers (Pajares & Valiante, 1997; Halsey, 2004; Bandura, 1994) have found that low performing students find benefits in experiencing extended time learning where there is time for more intensive learning activities. They indicate that when academic achievement goes up so does the student’s academic self-concept. Halsey (2004) found in an empirical study conducted that students engaged in a remedial type reading program had greater academic self-concept than students in more traditional learning instructional programs. However, health was found not to be a predictor of “NJASK Change” because the special education students in this study had mild disabilities which were not significant enough to affect change. Moreover, this may also be a reflection of remedial programming and how it appears to closing the gap between mildly impaired special education populations and general education populations in this study.
Explanatory Variables Determine NJASK Change in Block Sample (H2b)

The fourth hypothesis (H2b) also examined whether demographic, health, academic performance (4th through 6th grades) and sixth grade academic self-concept were significantly explanatory for the change in NJASK scores (6th grade minus 4th grade scores) in 6th grade block scheduling students. Findings showed that when several models were tested the best model was that which contained the variables of age, lunch eligibility and disability/special education, and the PASS Full Scale scores. These variables were predictors in this study of a change in NJASK performance (6th minus 4th grade (scores). This model was statistically significant, and the hypothesis (H2b) was accepted and the Null Hypothesis was rejected. Therefore in the model after several explanatory variables were tested, better predictors of the statistical model which included the variables of age, lunch eligibility, disability/special education, and PASS Full Scale Score for the block scheduling sample demonstrated a relationship to academic NJASK change.

Previous research has shown that student academic development and perceptions can impact academic achievement (Boersma & Chapman, 1992; Chapman & Tunmer, 2003; Harter, 1999; Pajares & Schunk, 2001; Bandura, 1994). Studies also have shown that there are factors that impact student achievement and learning which include student disability and types of student academic programming (Berends et al, 2002; Queen et al, 1996), and that student abilities, teacher and school characteristics may predict student achievement outcomes in language arts literacy areas (Rice, 2005; Goodlad, 1984; Atkinson et al, 2002; Darling-Hammond, 2002; Lewis et al, 1999; Berends et al, 2002; Earthman, 2002; Moussiax & Norman, 2004; Applefield et al, 2001). In the block
scheduling sample the variable heath/disability/special education revealed to be a predictor of change in NJASK scores (6th grade minus 4th grade scores). Other studies have found that block scheduling settings significantly improved academic performance and the perceptions of teachers who believed their students improved academically, as well as behaviorally, with the development of a block scheduling program (Queen et al study, 1996; Wilson & Stokes, 2000) revealed significant results in improved student academic performance.

Although the result of this model demonstrated a positive relationship between “NJASK Change”, and the predictors of age, socioeconomic, special education and academic self-concept, Berends et al (2002), in an academic ability study showed similar findings that students in special education scored significantly lower than other students and that special education students who were not exempt from TAAS examinations or those with mild deficits, were still below other students taking the test. In addition, the study also found that classes with higher male populations had lower average reading scores. After controlling for all student classroom and school characteristics, the authors failed to find a significant effect in the relationship between student academic ability and the implementation of schools with NAS reform models. The survey analysis in the study revealed no statistically significant difference between student or teacher characteristics between the school district and survey sample (Berends et al, 2002).

**Explanatory Variables and Greater Power Traditional Verses Block (H2o)**

The last hypothesis (H2o), examined the 6th grade block sample’s explanatory variables to determine which variables or variable had a greater explanatory power in predicting the gain in LAL over a group of 6th grade students participating in traditional
scheduling. The investigation revealed that there was no statistical difference between the $R^2$ of the traditional sample (.216) and the $R^2$ of the block scheduling sample (.29). The $R^2$ of this study was used to determine the amount of variability in the “NJASK change” independent variable and predictor (explanatory) variables. A Chi-square test of the regression models indicated that there was no significance difference between the two schools, therefore, hypothesis $H_2c$ was rejected and the null hypothesis was accepted. Block scheduling did not have a greater explanatory power over traditional schedule sample scores in interpreting “NJASK Change”.

A supplemental or ancillary analysis was conducted using the lunch eligibility data and PASS Full Scale scores on the total study sample. This ancillary analysis found that the predictor variable of lunch eligibility on the dependent variable of academic self-concept (PASS scores) were statistically significant, ($p=.005$). Looking even deeper into this relationship which utilized the Scheffe Post Hoc Comparison, a test which helps one to make comparisons after an ANOVA declared a significant F-value, the significant differences were indicated to be between “free lunch” and “paid lunch” and between “free lunch” and “reduced lunch” categories. The positive relationship indicated that students in paid and reduced lunch in both samples tended to receive favorable PASS scores, and that the students who were eligible for free lunch in the sample received significantly lower PASS and academic self-concept scores than students in paid and reduced lunch programs.

This finding is indicative of both student samples who are from homes and communities of a low socioeconomic status, tend to lack adequate academic self-concept in the areas measuring general ability, math, reading spelling, penmanship/neatness,
school satisfaction and in their confidence of academic ability. According to Boersma & Chapman, (1992) there are studies that suggest that socioeconomic status can impact PASS scores, and studies have demonstrated that academic self-concept strongly correlates with academic achievement in school and weakly to socioeconomic status. However, student samples in this study demonstrated the opposite and showed a positive correlation between lunch eligibility and PASS self-concept scores.

**Study Implications**

Concepts, theories and findings concerning the LAL strategy of block scheduling have been explained through this study. The findings relative to this topic will help educational systems and lawmakers to define and refine educational structures to include relevant developmental strategies created to improve LAL progress. This research will help to focus on the functioning and creation of strategies and research that will enhance not only language arts functioning but academic functioning in general. The issues concerning block scheduling as a LAL strategy should take into consideration the following ideas.

1. This study about block scheduling strategy, completed in two significantly similar schools, demonstrated no significant differences in demographics, health, academic self-concept and LAL achievement. One element of this finding is the process of how block scheduling is utilized in the classroom. Although both schools had NJASK performances which were quite similar in mean scores, and that traditional school did not participate in extended time learning, it inevitably did not significantly affect their NJASK scores in LAL. The argument can also be made that the experience of block scheduling
incurred by the students in this sample may not have been structured to significantly improve LAL beyond its previous traditional program, however, the block scheduling descriptive data showed that 4th and 6th grade scores were not significant. Ensuring proper LAL instructional activities to meet individual classroom needs is equally important as discussing block scheduling and its impact on improving academic achievement.

2. Findings in this study have demonstrated that in both school samples, students had a reasonably adequate self-concept. Both schools were very similar in their PASS Full Scale scores which infused general ability, math, reading/spelling, penmanship/neatness, school satisfaction and perceptions regarding confidence in academic ability. The mean score in both schools was slightly above the stated 1992 norms indicated. One would assume that sample schools with large percentages of students who are considered to be educationally and economically deprived, and who are not engaged in programs targeted specifically to improve academic achievement, may exhibit low academic self-concept, however this was not demonstrated in this study. Students revealed similar academic self-concepts, and the types of school program did not matter. This suggests that there may be other factors that impact students' academic self-concept which allows for positive perceptions about their academic progress. Moreover, with measures of academic self-concept, how much of it is overall student attitude opposed to strictly perceptions of academic work and behavior related to school. In addition, academic programming and instructional activities, educationally and
environmentally, can strongly impact and give false results on academic self-concept scales.

3. Looking deeper into the impact of academic self-concept, study findings generated through multiple regression, measured several explanatory variables including demographic, health, academic (4th through 6th grades) and 6th grade academic self-concept in order to determine a predictor of a change in NJASK scores (6th grade score minus 4th grade scores). After an analysis of several models there was a positive correlation depicted between lunch eligibility (socioeconomic status) and PASS Full Scale scores. Students in the sample categorized as receiving “free” lunch tended to have lower scores than those sample students who participated in “paid” or “reduced” lunch programs. These findings suggest that the socioeconomic status of a student can ultimately affect their academic self-concept which consequently can have an affect on student learning. This information benefits schools with overall programming that emphasizes student motivation, self-concept and self esteem; specifically this information enhances learning environments of students from low socioeconomic households.

4. The study conducted appears more like an investigative process in examining two urban schools, one practicing traditional schedules for LAL, and the other using a block scheduling program first implemented approximately 2 years ago. This program tried to address weaknesses in those students scoring below average in LAL. Retrospective portions of the study evaluated NJASK scores from a test administration taken in 4th and 6th grades. Although the
mean scores did not indicate that block scheduling students had a significantly higher “NJASK Change” performance, the dependent variable “NJASK Change” was significantly impacted by selective explanatory variables. This finding is helpful in knowing that variables of age, lunch eligibility (socioeconomic status) and academic self-concept are predictors and have relationships to NJASK Change. This finding benefits academic programming and how the influence of environmental and educational circumstances may affect their progress. It is also helpful to know which predictor variables negatively affect the learning process.

Conclusions

Throughout this study, comparisons between two urban schools, one with a block schedule program and another with a traditional program for LAL were investigated. Descriptive data from the two schools indicated that there were no statistical differences between demographic, health, academic self-concept and school standardized test achievement between the two schools. This helped lessen the internal validity of the study and maintain some type of uniformity and consistency of sample characteristics. Five hypotheses were also tested and indicated that the strategy of block scheduling did not demonstrate significance over the traditional school setting in academic self-concept, and NJASK functioning (6th grade minus 4th grade scores). Explanatory variables were utilized to determine whether there were inadequacies within the two schools and to verify any extraneous variables that may also influence the outcome of this study, all descriptive variables tested indicate that there was no statistical significant difference between the two schools.
A multiple regression statistical measurement of explanatory variables and the independent variable of "NJASK Change" created a statistical model utilizing age, lunch eligibility (socioeconomic) and PASS scores as predictors of a change in NJASK achievement (6th minus 4th grade scores) within the traditional sample. The health variable did not predict this change and perhaps one can infer that the special education students in the study did not demonstrate significant differences in NJASK performance between this sample and their general education counterparts. Therefore, this hypothesis was partially accepted for 6th graders experiencing a traditional schedule. A correlation of explanatory variables and "NJASK Change" revealed a model consisting of the explanatory variables of age, lunch eligibility and disability and PASS performance which indicated significance between these relationships. A more in depth ancillary analyses revealed a significant positive correlation between lunch eligibility and PASS scores.

These findings are helpful in the development and understanding the block scheduling process versus traditional programming when looking at variables that may cause or affect change in NJASK progress. This study examined several explanatory variables and found out that the predictor variables of age, lunch eligibility and PASS Full Scale scores expressed a relationship in traditional block participants. In testing the block scheduling sample in this study's explanatory variables of age, lunch eligibility, disability and PASS full Scores demonstrated significance in "NJASK Change" performance. These finding support variables that impact change in academic scores studied over several years.
Limitations

Although this study has rendered results that lead to the examination of issues surrounding the block scheduling controversy, there are limitations that need to be addressed. These limitations are as follows:

1. This study examined a sample of students, from one block scheduling school and one traditional school. This school was chosen because of scheduling types. Therefore, the student population consisted of a purposive sample which limits the ability to generalize to other populations. Study results can only be generalized to the sample of student participants due to the non-randomization of this study.

2. The study focused on the comparison of explanatory variables, and standardized assessment of the PASS and NJASK performance scores of LAL. The strategy of block scheduling was the only strategy examined in this study. Other remedial/learning activities utilized in both schools were not addressed to the extent of the impact they might have on the samples being evaluated.

3. The study did not examine other forms of academic performance such as student GPA or report card grades.

4. Teacher interviews and perceptions were not included in this study.

5. This study focused on a time span of two years of block scheduling strategy which may not have been adequate time to demonstrate time in achievement scores.
6. Other forms of block scheduling were not presented in this study for comparison.

7. The student numbers in each group were the minimal number expected in order to obtain substantial results. Higher group numbers may be more powerful for interpreting significance of data tested.

8. The PASS measure was out of print and the norms did not include significant minority populations, an alert issued by the authors of the inventory when interpreting findings.

9. This study did not strategically look into ethnic comparisons on PASS or NJASK administrations, traditional versus block scheduling schools.

10. PASS findings for this study sample may be influenced by overall student attitudes rather than actual perceptions of student work and behavioral aspects.

**Recommendations for Future Study**

The limitations of the study lead to areas of future research. According to the limitations, the following recommendations are in order.

1. Alternative sampling techniques: This study engaged in purposive sampling due to the convenience and accessibility of the schools. However, further research should seek to strengthen the "generalizability" of educational research and include sample populations and groups that are randomly chosen, as much as possible.

2. Expand sample populations: Future research should look to broaden sample populations to strengthen the power of real effect, and prepare
for the exiting of students and the lack of student and parental support before the data collection process.

3. **Additional explanatory variables:** Further research should include more explanatory variables such as GPA, teacher perceptions of student's progress, and include variables that measure the differences in instructional methods and designs in block and traditional schools.

4. Further research should continue studies on middle school students and middle school learning schedules, including additional types of block scheduling techniques.

5. More studies that employ qualitative and action research that incorporate observational information are needed.

6. **Longer retrospective research:** Additional studies should concentrate on a longer time in order to allow the block scheduling or other methods time to determine significant changes in achievement levels.

7. Future studies should employ variables that determine what role academic self-concept plays in development of learning over years in block scheduling schools. These studies may seek to determine actual reasons for more definitive associations and cause and effect relationships, if they exist.

8. Future research should focus on studies that incorporate broader ethnic diversities that reflect growing urban populations as much as possible, such as growing urban populations of students with Asian and Arabic descent.
9. Reliability and validity studies that compare administrations of the PASS to other tests of academic self-concept.

10. Further research is needed on the NJASK to determine content validity relative to areas of state curriculum requirements especially in LAL.

Chapter V Summary

Based on the findings of Chapter IV, the present Chapter V discussed the sample's characteristics, results, study limitations and future research recommendations. This study indicated that there were no significant differences in the samples of two schools, traditional and block, when explanatory variables (4th through 6th grades), academic self-concept and academic achievement (6th grade minus 4th grade NJASK scores) were tested. However this study found that selected explanatory variables may have different effects on the dependent variable of "NJASK Change". Variables that demonstrated a better relationship included age PASS Full Score, and lunch eligibility within the traditional sample. The health/disability characteristic proved not to be a predictor of change in achievement scores (6th grade minus 4th) in a sample of 6th grade students experiencing a traditional schedule. Explanatory variables of age, lunch eligibility, and disability/health and PASS academic self-concept scores revealed a relationship with "NJASK Change" in block scheduling participants. Further correlational research revealed a positive relationship between lunch eligibility (socioeconomic status) and PASS self-concept assessment in the total sample.

This study will help to benefit educational research and policy which encourages the development of educational programs that look to improve student functioning across
the board. Although the generalization of these findings are limited, additional research is needed to address the need for additional urbanized studies that address other explanatory and educational components to determine the relationship they have to 90-minute block scheduling and academic achievement areas. Longer retrospective studies should address the concern and usage of learning techniques presented during extended block time. Validity and reliability studies that measure the quality of school achievement and academic self-concept instruments as they relate to current trends in student populations, academic curriculums and achievement should also be considered.
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Appendix A

Student Record Data Form
Appendix A
Student Record Data

Part 1: Student Records Data

Directions: (This form will be filled out by examiner)

1. Student’s Code Number: ______________________________

2. 1=Traditional or 2=Block Scheduling

Demographic and School Characteristics 6th grade

3. Gender: 1=Male 2=Female

4. Year of Birth: _______ Age: _______

5. Race/Ethnicity: 1=Black 2=Hispanic 3=White 4=Asian 5=Native American

6. Lunch eligibility category: 1=Free 2=Paid 3=Reduced

7. Disability/Special Education: 1=Yes 2=No

8. PASS Full Scale Score T score = _____ %ile= _______

Academic Characteristics 4th grade (retrospective data)

9. NJASK Subtest Scores: Language Arts Literacy: 4th Grade NJASK total score _______

Academic Characteristics 6th grade (current data)

10. NJASK Subtest Scores: Language Arts literacy: 6th Grade NJASK total score _______

Language Arts Literacy Change:

11. Language Arts literacy Change: 6th grade NJASK total score minus 4th Grade NJASK total score _______
Appendix B

Student Survey Instrument
### PERCEPTION OF ABILITY SCALE FOR STUDENTS (PASS)

**Directions (read aloud):** Read each of the statements on this form. If a statement describes the way you feel about yourself in school circle the Y for YES. If a statement does not describe you, circle the N for NO. Choose an answer for each statement even though it is hard to decide. Choose the answer that is closest to the way you feel most of the time. Do not fill in both the Y and N for the same statement. Remember there is no right or wrong answers. Just answer each statement honestly. Any questions? You may begin.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I always understand everything I read</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>2. My schoolwork is usually untidy.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>3. All new words are easy for me to spell.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>4. I find it hard to understand what I have to do</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>5. I think my schoolwork is really good</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>6. I usually have problems understanding what I read</td>
<td>Y</td>
<td>N</td>
<td></td>
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<tr>
<td>7. I am one of the smartest kids in class.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>8. I have neat printing.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>9. I usually finish my schoolwork.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>10. I am unhappy with how I read.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>11. I like reading.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>12. My printing is perfect.</td>
<td>Y</td>
<td>N</td>
<td></td>
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<tr>
<td>13. I am good in spelling.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>14. I make many mistakes in school.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>15. I have problems in spelling.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>16. I like to read to my parents.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>17. I am happy with the way I spell.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
18. I like making up endings to stories.  Yes  No
   Y  N
19. My teacher thinks I write poor stories.  Y  N
20. I am poor at subtraction.  Y  N
21. I like to answer questions.  Y  N
22. Working with my hands is hard.  Y  N
23. I like doing printing.  Y  N
24. I have trouble drawing pictures.  Y  N
25. I am poor at silent reading.  Y  N
26. I have problem printing neatly.  Y  N
27. I am good with my times tables.  Y  N
28. I am good at drawing.  Y  N
29. When school gets tough I give up  Y  N
30. I like to do story problems  Y  N
31. My friends read better than I do.  Y  N
32. I am good at printing.  Y  N
33. I always do neat work.  Y  N
34. I have difficulty getting my math finished on time.  Y  N
35. I have difficulty working with numbers.  Y  N
36. I like spelling.  Y  N
37. I like math.  Y  N
38. I am a messy writer.  Y  N
39. Tests are easy for me to take.  Y  N
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>40. I like to sound out words.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>41. My teacher often makes me write my work again.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>42. I have difficulty looking up words in the dictionary.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>43. I like to use big words when I talk.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>44. I like telling my friends about schoolwork.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>45. My teacher thinks I’m dumb in math.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>46. I like going to school.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>47. I like playing spelling games</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>48. I have difficulty thinking up good stories.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>49. My spelling is always right</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>50. Saying new words is hard for me.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>51. I am unhappy with how I do math.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>52. I am a smart kid.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>53. I have difficulty doing what my teacher says.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>54. I find spelling to be hard.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>55. I usually get my math right.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>56. I find reading hard.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>57. I am unhappy with my printing.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>58. I am a good reader.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>59. I am slow at spelling.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>60. I am a slow reader.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>61. In school I find new things difficult to learn.</td>
<td></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>62. I usually spell words right.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>63. My teacher thinks I’m good at printing.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>64. All new words are hard for me to understand.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>65. I have trouble telling others what I mean.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>66. I am good at math.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>67. I like to tell stories in class.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>68. I feel that I often say the wrong things.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>69. I find multiplication fun.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>70. I always get everything in math right.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

APPENDIX C
Permission to use Perception of Ability Scale for Students (PASS)
Hello Luana

Western Psychological Services have indeed stopped publishing the PASS. This was news to me and the other author, and it was disappointing to hear about it from people who had attempted to obtain copies.

However, I can send you a copy of the PASS and at this stage you are free to copy and use it for research purposes. Until I find alternative publishing arrangements, this is probably the best that can be done. In terms of referencing, it is still probably appropriate to reference the scale as being published by WPS.

I'll send you a copy of the scale in the air mail tomorrow (Modnay NZ time).

Kind regards

James Chapman

-----Original Message-----
From: Luana Bruce
Sent: Mon 10/16/2006 2:57 AM
To: Chapman, James
Cc: 
Subject: RE: Perception of Ability Scale for Children
Hi Dr. Chapman:

This is Luana Bruce from Lynn University checking back with you to see if you were able to get any information for me on the PASS (Perception of Ability Scale). I have been trying to contact Ms. Weinberg at the Western Psychological Services, but she has not responded to me as of yet.

Still searching, not giving up just yet!
Luana Bruce

From: Chapman, James
Sent: Tue 9/26/2006 4:47 PM
To: Luana Bruce
Subject: RE: Perception of Ability Scale for Children

Hello Luana

I'm sorry you haven't been able to obtain the PASS from Western Psychological Services. It is news to me that they no longer carry the scale. I'll make inquiries.

I'm happy for you to use the scale but WPS own the copyright. I'll check and get back to you.

Regards
Dear Dr. Chapman,

I am a doctoral student at Lynn University in Boca Raton, Florida and have chosen to complete my dissertation on the relationship the language arts strategy of block scheduling versus traditional schedules, have on student achievement, student characteristics, self efficacy and student perceptions. I have obtained information regarding the Perception of Ability Scale and I feel it has all the constructs that I need to answer my hypothesis. I would like to request your written permission for me to use your inventory.

In addition, I have been trying to locate the measure and have run into difficulties. I called the publisher, Western Psychological Services,
and they stated that they no longer carry the inventory. If you can be
of any help to me I would surely appreciate locating a manual and
assessments to use in my study.

Presently, I am employed in a school district in Paterson New Jersey as
a school psychologist. Thank you for your time and consideration.

Respectfully Submitted,

Luana Bruce
Appendix D

Permission from Schools to Conduct Research
Ms. Lucine Bruce

Dear Ms. Bruce,

This letter is to inform you that I am approving your request to conduct research at the Dr. Frank Napper School of Technology. If you need further assistance, please contact Dr. Israel Carreiras, Assistant Superintendent for that school.

I wish you luck in completing your doctoral studies.

Sincerely,

Dr. J. Michael Rush

Cc: Dr. Israel Carreiras, Assistant Superintendent

"Children First"
Ms. Bruce,

I have spoken to the principal of Washington Academy about your request. You will be allowed to work with the staff, if they consent to participate in the project. Please contact Mr. Sangster, the principal, to proceed.

Good Luck!!

cch
April 27, 2007

Ms. Luana Bruce
Lynn University
Doctoral Candidate

Dear Ms. Bruce:

You are granted permission to gather data for your Doctoral research at Washington Academy of Music of the East Orange School District.

Please contact my office at [redacted] to receive your appointment dates.

Sincerely,

[Signature]

Principal
APPENDIX E
IRB APPROVAL
Date: 10/30/07
Principal Investigator: Luana Opiach-Bruce

Project Title: Student Characteristics, Academic Self-Concept and Language Arts Literacy Performance in Traditional and Block Scheduling in Two Urban Schools
IRB Project Number: 2007-030

Application and Protocol for Review of Research Involving Human Subjects of a New Project, Request for Exempt Status: Expedited Review: Convener Full Board:

IRB Action by the Convener Full Board:
Date of IRB Review of Application and Research Protocol: 10/30/07

IRB Action: Approved: X. Approved w. provision(s): __ Not Approved: __ Other: __

COMMENTS:
Consent Required: __ No ______ Yes ______ X ______ Not Applicable ________ Written ______ X ______ Signed ______ X ______

Consent forms must bear the research protocol expiration date of: __10/30/08_____

Application to Continue/ Renew including an updated consent is due:
(1) For a Convener Full Board Review, two months prior to the due date for renewal: X ______
(2) For and Expedited IRB Review, one month prior to the due date for renewal: ______
(3) For review of research with exempt status, one month prior to the due date for renewal: ______

Other Comments, Parental consent and child assent are required. Parental consent must be signed by parental guardian. Child assent must be read to the participants.

Faniela Faraazmand, Ph.D.
Institutional Review Board Chair

CC: Dr. DeVue

Institutional Review Board for the Protection of Human Subjects
Lynn University
3601 N. Military Trail Boca Raton, Florida 33431