1-1-2003

The impact of full-day and half-day kindergarten on the language arts achievement scores of first-grade students

Stefanie M Kujaczynski
University of Nevada, Las Vegas

THE IMPACT OF FULL-DAY AND HALf-DAY KINDERGARTEN ON THE LANGUAGE ARTS ACHIEVEMENT SCORES OF FIRST GRADE STUDENTS

by

Stefanie M. Kujaczynski

Bachelor of Science
University of Nevada, Las Vegas
1994

Master of Education
University of Nevada, Las Vegas
1998

A dissertation submitted in partial fulfillment
of the requirements for the

Doctor of Education Degree in Special Education
Department of Special Education
College of Education

Graduate College
University of Nevada, Las Vegas
May 2004

UNLV
UNIVERSITY OF NEVADA, LAS VEGAS

Dissertation Approval

The Graduate College
University of Nevada, Las Vegas

March 29, 2004

The Dissertation prepared by

Stefanie M. Kurjaczynski

Entitled

THE IMPACT OF FULL-DAY KINDERGARTEN AND HALF-DAY KINDERGARTEN ON THE LANGUAGE ARTS ACHIEVEMENT SCORES OF FIRST GRADE STUDENTS

is approved in partial fulfillment of the requirements for the degree of

Doctor of Education in Special Education

Examination Committee Chair

Dean of the Graduate College

Kyle Higgins
Examination Committee Member

Examination Committee Member

Graduate College Faculty Representative

1017-52

ABSTRACT

THE IMPACT OF FULL-DAY AND HALf-DAY KINDERGARTEN ON THE LANGUAGE ARTS ACHIEVEMENT SCORES OF FIRST GRADE STUDENTS

by

Stefanie M. Kujaczynski

Dr. Jeffrey Gelfer, Examination Committee Chair
Professor of Special Education
University of Nevada, Las Vegas

Full-day kindergarten programming is an increasing trend in early childhood education settings. Many school districts are beginning to offer such programs based on the needs and opinions of teachers and parents. These districts are making substantial financial commitments to this programming prompted by the belief that full-day kindergarten will produce greater academic gains for children, more specifically at-risk children.

This study investigated the impact of full-day and half-day kindergarten program enrollment on the language arts achievement scores of 237 first grade children considered to be at risk for academic failure. Gender differences and program enrollment differences were the primary categories for comparison.

Archival data were collected from a schools district criterion-referenced Standards-Based Assessment Program in five areas of language arts for the 2001 and 2002 school year. The students had completed kindergarten during the 2000 and 2001 school year. All data were analyzed using one-way ANOVAs. Four elementary schools from the same region of the school district participated in this study.

This study revealed that there is a difference in the mean scores in all areas of language arts in favor of full-day kindergarten female students. However, boys participating in full-day kindergarten tended to have the lowest mean scores in four of the five areas of the assessment. Female children outscored male children in all areas and were significantly higher in their ability to comprehend literature. Further, female students enrolled in full-day programs scored significantly higher in the area of comprehension of literature and writing mechanics.

While the results of this study demonstrated limited significance, it is recommended that full-day kindergarten continue to be offered for at-risk children as a result of their elevated mean scores. Full-day kindergarten programming is a positive alternative intervention for students lacking school readiness skills and related experiences which may prohibit them from achieving educational success.

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGMENTS

This study is a result of the support and academic leadership of several outstanding faculty members. First, I would like to thank Dr. Jeff Gelfer for his tireless encouragement, thought provoking conversations, scholarly guidance and educational mentoring throughout my college career. I am also grateful for the guidance and advice from other committee members, Dr. Kyle Higgins, Dr. John Filler, and Dr. Paul Jones. Each member contributed unique expertise and encouragement into the completion of this dissertation.

I would also like to thank my family who have supported me throughout my higher education. My three older brothers, Roger, Nate, and Voyd who have set the standards for achievement and guided me along the way. Thanks to my father, Steve, for never accepting anything less than the best. My mother, Gloria, for confidence, support, love, and friendship. I am happy to share this accomplishment with her. My children, Kayla and TJ you are the inspiration in all that I do and are truly my greatest accomplishments to date. Lastly, my husband, Terry, I can only say "Roll Me Away".

CHAPTER 1

INTRODUCTION

Academic demands have increased for all grades and kindergarten is no exception. With certainty all children are impacted due to the increasing demands of assessment and accountability being placed on schools nationwide. Standards have increased and the minimal levels of achievement are higher than ever before. New information is being incorporated into the school curriculum and children constantly are driven to achieve higher standards. First grade academic standards have filtered into kindergarten and there seems to be no plateau for the limitations of what is expected in kindergarten (Shepard & Smith, 1988). In general, children have more outside school experiences than ever before. Some children come to school with more sophisticated skills and there is a greater range of child developmental levels in schools than ever (Kelly, 1999).

The Kindergarten Movement

The kindergarten movement was begun in 1837 by the German philosopher and teacher Friedrich Froebel. His kindergarten was designed to encourage children to focus on society rather than self and targeted children ages two through seven (Spring, 2001). Prior to this time, children under the age of seven did not attend school except in the cases of religious instruction (Bosterman, 1997). Froebel

believed that there needed to be a system in place for educating infants and young children and he recognized the weaknesses of traditional education of the time (Bosterman, 1997). Teachers were encouraged to be more maternal in their approach and refrain from directive and interfering methods (Spring, 2001). Froebel also placed a great deal of emphasis on the importance of play and it's significance to the learning of the children (Ross, 1976). Many of Froebel's fundamental beliefs about the development and learning of children (e.g., child-sized furniture, room for play, colors, shapes, and sizes relative to early childhood) are still present in the modern movement (Shapiro,1983).

In the later part of the 1800s, the kindergarten concept was introduced in the United States in urban areas such as New York City and San Francisco. These private kindergartens were funded by wealthy individuals through charity organizations and specifically targeted children and families living in poverty (Cuban, 1992). The underlying ideals were to rescue children and their families from poverty, provide strong moral and social values, and teach children to be industrious and ready for formal schooling (Cuban, 1992).

In 1873, kindergarten became an addition to public schools in St. Louis, Missouri at the recommendation of Elizabeth Peabody and Susan Blowe (Ross, 1976). Susan Blowe became familiar with kindergarten while traveling in Europe as well as studying under Boelte (Ross, 1976). Blowe's experimental kindergarten was a preprimary class serving 20 children with the assistance of one instructional aide (Shapiro, 1983). Blowe and St. Louis Superintendent William Harris set the age limitations of children for this

kindergarten from three to six years. Enrollments increased quickly during the first year of implementation which prompted the addition of a second kindergarten (Shapiro, 1983; Ross, 1976). Blowe also kept anecdotal notes about the program and reported to the school board during the first year of implementation. These kindergartens were designed to reform the child living in poverty, to prepare the child for the requirements of formal education, and to provide the child with a strong moral foundation (Spring, 2001).

Soon after the successful implementation of the kindergarten into the public system, St. Louis became a training center and model for other urban areas. St. Louis was the only city, for more than a decade, to offer public kindergartens (Ross, 1976). Blowe was an integral part of the success and expansion of the American kindergarten as she continued to study the Froebel method of kindergarten, modeled appropriate teaching techniques, lectured on the topic, and added her own philosophical views to the movement (Shapiro, 1983). Due to the forward thinking of the St. Louis public school system, kindergarten became a popular addition to schools nationwide.

Kindergarten has become one of the longest lasting educational reforms introduced into public schooling and there is clear evidence it is an integral part of formal education (Cuban, 1992). However, kindergarten often has come under review concerning it's effectiveness and lasting impact on diverse populations of children (Bryant & Clifford, 1992). Kindergarten has continued to evolve in relation to societal changes, educational legislation, educator input

based on theory, research and practice, and changes in the individual needs of children.

Kindergarten Scheduling

One element of kindergarten that has not remained constant is its daily schedule. The early private kindergartens were generally conducted in half-day sessions leaving the afternoons for teachers to visit homes and conduct parent training and intervention sessions (Cuban, 1992). The purpose changed in 1911 when 546 of 867 cities providing kindergarten conducted double, half-day sessions (Cuban, 1992). It was no longer a primary purpose of the teacher to build home-school connections; rather it became a focus to prepare these children for first grade (Cuban, 1992). In 1984, two states provided full-day kindergarten programs for all children, 11 states provided lengthened day programs for 50% of the children, and 25% of all children in ten other states were provided with extended day programs (McConnell & Tesch, 1986).

Currently, school districts debate the length of the instructional day that best serves the needs of kindergarten children. Some kindergartens are in session every day for half-day, all day every day, or all day every other day (alternate day schedule). The National Center for Education Statistics (2000) reported: (a) twenty states require their districts to offer half-day programs, (b) five states require half-day or full-day programs, (c) five states require both half-day and full-day programs, (d) ten states require full-day programs, and (e) ten states do not require kindergarten programs to be offered. Furthermore, nine states require

students to attend half-day programs; six states require students to attend full-day programs; and 35 states do not require kindergarten attendance.

In the 21st century, urban areas will continue to grow and experience a large influx of diverse populations of children. It is essential that full-day programs will continue to grow in number as a result of more parents in the workforce, more single-parent families, and the greater academic needs of children (Clark, 2001). Many of these children will come from families living in poverty (Hofferth,1987). These children are most commonly referred to as at-risk children. They arrive at school lacking many of the basic readiness skills and are at-risk for failing in one or more of the content areas. In many cases these children have not had experiences or opportunities that equip them with the basic knowledge necessary for early school readiness or success (Rimm-Kaufman, Pianta, & Cox, 2000). It becomes the responsibility of the school system to bridge this learning gap and provide these children with additional educational resources and experiences (Cuban, 1992).

Literacy Instruction for Children

Literacy instruction for young children is an area of great concern when considering educational options for young children, especially at-risk populations. Literacy is the ability to read, write, speak, and listen in a given setting such as home or school (Morrison, 1998). Until the 1970s, these topics were considered isolated skills and it was believed children needed to acquire certain basic skills to demonstrate their readiness for reading (Crawford, 1995).

During the last three decades a paradigm shift has occurred. Researchers have conducted empirical studies and coined the term *emergent literacy* (Senechal et. al., 2001). This shift allowed educators to move from a maturationist view of literacy acquisition, acknowledge that children begin to acquire literacy at birth, and understand that there is no prescribed set of readiness skills necessary for reading (Crawford, 1995; Dickinson & McCabe, 2001; Vacca, Vacca, & Gove, 1991). Individual theories from a variety of researchers have demonstrated how early literacy is perceived in relation to their beliefs of maturation, learning, and development (Crawford, 1995). Individually, these views did little to define literacy acquisition. Viewed collectively, literacy is clearly defined as an integrated skill, as something that occurs naturally, and as a skill that involves all developmental domains (Morrison, 1998; Vacca, Vacca, & Gove, 1991).

Because at-risk children arrive at school lacking many experiences and exposure to activities or events, their level of literacy may be varied. Often these children are perceived by educators and policy makers as lacking essential literacy skills (Rimm-Kaufman, Pianta, & Cox, 2000). Learning to read is viewed as the greatest accomplishment for the first few years of formal schooling (Adler & Fisher, 2001). A child not able to read by 8-years-old is viewed as a failure in the American school setting (McGill-Franzen, 1992; P.L. 107-110). Therefore, effective developmental programs are necessary to foster academic growth and successful acquisition of literacy and related skills.

Purpose of Full-day Kindergarten

Full-day kindergarten is one proposed solution to the academic demands of modern classrooms because it allows children to spend greater amounts of time focused in developmentally appropriate activities. These activities can nurture the development of all skills, including literacy. Full-day kindergarten programming continues to gain popularity for a variety of reasons. Since the 1950s, economic situations have increased the amount of working mothers and full-day kindergarten is more attractive and convenient (Minor, 2001; Nelson, 2000). Child care costs are less or eliminated when children attend full-day programs and midday transportation between school and child care facilities is eliminated. Full-day kindergarten can provide a safe enriching place for children who are from disadvantaged backgrounds. This setting allows them to have more focused time working with materials, more enrichment activities, and more interactions with other children that will enhance their development (Housden & Kam, 1992). Full-day kindergarten offers children more consistency throughout the major portion of their day as opposed to being placed in more than one setting which may be philosophically different than the primary learning environment.

Parents also have conveyed their interest in academic rigor and the cognitive development of their children (Shepard & Smith, 1988). Furthermore, full-day programming supports most parents' work schedules and allows children to remain in quality educational environments for the majority of the day (Nelson, 2000). Educators prefer full-day programming and believe children are more able to accept

advanced curriculum (Egertson, 1987). The longer school day allows teachers to have more time to work on skills, especially for students with deficits in relation to school readiness and students with limited English (Natale, 2001). Full-day programs also include more time for play, field trips, and exposure to materials and experiences at-risk children may lack (Nelson, 2000). Educators also tend to believe full-day programming is more financially sound as it lowers the number of students who may be retained or in need of remedial services (Slavin, Karweit, & Wasik, 1992).

Finally, federal legislation known as the No Child Left Behind Act (NCLB) of 2001 (P.L. 107-110) requires that all children will read at grade level in English by the completion of third grade. It is safe to assume that children from affluent backgrounds already have access to suitable preschool programs and arrive at kindergarten with readiness skills in most areas. At-risk children tend to lack readiness skills and full-day kindergarten should be put in place for these children with an element of ongoing assessment and feedback of progress so the performance gaps are lessened (Weast, 2001). At-risk children will require more focused specialized attention early on to develop a lasting foundation for future formal education.

The reality of children living in poverty becoming at risk for school failure is not a new concept. In fact, Title I of the Elementary and Secondary Education Act (ESEA) of 1965 (P.L. 89-10) was created to compensate for inequalities low- income school districts would encounter (Carmicheal, 1997). The United States Department of Education (1992) maintains that students attending high-poverty schools are

three times more likely to be low achievers than those students who attend low-poverty schools. The U.S. Department of Education (1992) identifies high-poverty districts as those that have 22% or greater of the population living in poverty and low-poverty districts as those that have seven percent or less of the population living in poverty.

Title I Services

Title I grants are provided to schools for the establishment and maintenance of programs that will equalize the educational opportunities of at-risk students (U.S. Government Accounting Office, 2002). These funds are intended to assist with the instruction to ensure that students master challenging curricula and meet state standards of achievement. It is at the discretion of the individual school district as to the manner in which funds are used. For example on district-level activities, professional development, preschool programs, administration, school improvement initiatives, and parent involvement efforts (U.S. Government Accounting Office, 2002).

States are awarded monies based on the number of children participating in services from low-income families. This is measured by U.S. Census data, state-per-pupil education expenditures, and the amount of students receiving free or reduced lunches through the National School Lunch Program. Districts receive allocations from their State Department of Education and have flexibility in the distribution of funds. Specifically, they are required to target schools with high percentages of poor children (see Appendix A for exact poverty guidelines for 2002). Most

school districts allocate the majority of funds to elementary schools rather than middle or high schools (U.S. Government Accounting Office, 2002).

Title I legislation also has encouraged districts to be inclusive of all grades, yet their primary emphasis has been early childhood classes with instruction provided in English only. Traditionally, these funds have been used to set up half-day pre-kindergarten classes and to extend the day for half-day kindergarten students. Today, Title I is still the largest monetary federal commitment to education, accounting for 20% of the U.S. Department of Education (USDOE) total budget (Carmicheal, 1997).

Clark County School District

Currently, Clark County School District (CCSD) of Las Vegas, Nevada is the sixth largest school district in the United States (Taksel, 2001). Similar to other large urban areas, this city has experienced many growing pains such as a change in ethnic and economic background of the residents. This growth has placed financial strain on the school district as it has had to build, furnish, and staff an average of ten new schools each year for the past ten years as well as maintaining existing schools and refurbishing others. Title I funding has played a pivotal role for the CCSD by allowing schools in predominately low socioeconomic neighborhoods to receive assistance for professional development, to purchase educational materials, and to create and maintain programs that benefit all children.

Clark County School District operated 159 elementary schools, kindergarten through fifth grade, during the 2000

and 2001 school year (Taksel, 2001). Title I funding allowed 5 of the 159 schools to operate full-day kindergartens for the children living within the school's designated zone. An additional three schools were able to provide full-day kindergarten programming to students who tested achieving the greatest academic need within their designated zone. These schools are located in older neighborhoods and have large numbers of children living in poverty and culturally diverse backgrounds.

Not all schools in Las Vegas receiving Title I funds chose to offer full-day kindergarten. Schools offering full-day kindergarten for students have done so with careful planning and budgeting as well as having school-wide commitment from all faculty. Full-day kindergarten means schools need twice the number of kindergarten teachers than the district has allotted. These additional positions were funded with Title I grant monies. If these school sites offered any additional programs, it was through other grants they received. These sites were anomalies within the CCSD. They created their own schedule and expanded the curriculum as appropriate.

Statement of the Problem

The Nevada Association of School Boards and the Nevada Association of School Superintendents (2002) developed a proposal for the 2003 legislative session that asked for $15,240,533 to provide full-day kindergarten for those students defined as at-risk. The creators of this proposal believed that full-day kindergarten students perform better on standardized tests and are retained in Title I programs

less frequently. Furthermore, they believed full-day kindergarten would result in less student retention in the primary grades as well as a decrease in the achievement gap between at-risk students and the general population. Governor Guinn also proposed full-day kindergarten for at-risk schools in his State of the State Address in 2003 (Guinn, 2003).

The State of Nevada is ranked near the bottom in the nation for per pupil expenditures and continues to experience financial restrictions despite a continuous high percentage of growth in students (Guinn, 2003). A district the size of the Clark County School District that offers full-day kindergarten for all kindergarten students would have to commit to a sizable financial investment. The 2003 legislative request was for 24.2 million dollars to establish more than 400 full-day kindergartens statewide (Whaley, 2003). Full-day kindergarten for all students would require hiring twice the number of teachers in that grade level, doubling the amount of space and materials, as well as a reexamination of daily schedules, curriculum, availability of classes such as art, music, and physical education, use of support staff, and teacher-student ratios (Puleo, 1986). Considering the time needed for planning and implementation the Nevada Association of School Boards and the Nevada Association of School Superintendents (2002) proposed initiating the program in the fiscal year of 2005.

Since schools in the CCSD have begun providing full-day kindergarten, no study has been conducted to analyze the outcomes of full-day and half-day kindergarten within CCSD. Schools in Clark County School District that have offered

full-day kindergarten for one or more years have collected the standard data from district mandated tests. Title I schools annually are allowed to change their programming based on administrative and faculty input, as well as financial considerations. To this point, input has relied heavily on the opinions of first grade teachers and their observations of first grade readiness as demonstrated by the children from the two different kindergarten programs. Test scores have increased slightly, but the extent to which full-day kindergarten has influenced those scores is unknown. As more schools make the commitment to change to full-day programming it is imperative that an analysis of data be conducted to determine the effectiveness of full-day programs as measured by student language arts achievement.

The No Child Left Behind Act (NCLB) of 2001 (P.L. 107-110) has imposed more restraints on schools nationwide. Districts are required to assess their students, demonstrate achievement, and move all children forward to a common level of success. The No Child Left Behind Act (P.L. 107-110) has also had a strong message for educators regarding literacy. All students are required to read on grade level in English by the completion of third grade. Failure to meet such goals could result in a decrease in funding for the school district. District personnel, therefore, continue to reexamine their investment into remedial programs and/or preventative programs and are attempting to make choices based on accurate relevant research data.

Purpose of the Study

The primary purpose of this study was to examine the relationship between the type of kindergarten program enrollment and the language arts achievement scores as measured by the Standards Based Assessment Program (SBAP) (CCSD, 2001) at the completion of first grade. A secondary purpose was to determine if there was a correlation between at-risk boys and at-risk girls enrolled in half-day and full-day kindergarten as demonstrated by their language arts achievement scores. As CCSD examines the best kindergarten schedule for students, it has highlighted a need for analysis of current data in relation to student achievement.

This research was conducted to determine if and how several key variables affect language arts achievement scores. Achievement scores from four similar elementary schools in CCSD were analyzed, compared, and the results reported in this study. Specifically, the following questions were addressed:

1. Is there a significant difference in language arts achievement scores between at-risk students and enrollment in a half-day or full-day kindergarten program?
2. Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and boys who attended half-day kindergarten programs?
3. Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and girls who attended full-day kindergarten programs?

4. Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and boys who attended full-day kindergarten programs?
5. Is there a significant difference in language arts achievement scores between boys who attended half-day kindergarten and boys who attended full-day kindergarten programs?
6. Is there a significant difference in language arts achievement scores between boys who attended half-day kindergarten and girls who attended full-day kindergarten programs?
7. Is there a significant difference in language arts achievement scores between girls who attended full-day kindergarten and boys who attended full-day kindergarten programs?

Significance of the Problem

The findings of this study provide schools in CCSD data regarding the student achievement outcomes of full-day kindergarten. Student achievement and school accountability are important issues for the school district. This study benefits the CCSD as well as the targeted school sites offering full-day kindergarten as they reevaluate kindergarten scheduling of full-day classes and half-day classes.

This study conducted a comparative analysis of language arts achievement scores as measured by the Standards-Based Assessment Program (CCSD, 2001) at the conclusion of grade one between students who had completed full-day kindergarten

and students who had completed half-day kindergarten during the 2000-2001 school year. The results of this study were made available to the school sites in which data were collected as well as to the Superintendent of Schools. The results may be used to assist the CCSD in making a sound decision and commitment to the type of kindergarten programming students should receive in the future.

Definitions

Academically Inadequate. A school is designated academically inadequate when 25% or more of the student population tested scores in the bottom quartile of three or more academic areas

At-risk Students. Students who are from low income families and are, therefore, eligible for free or reduced lunch through the federal lunch program.

English Language Learner Students. ELL students are students who are nonnative speakers of English. Specifically, for this study, students who's primary language is Spanish.

Full-day Kindergarten. A full-day kindergarten is one which children attend kindergarten five days a week for 5 hrs and 21 mins.

Half-day Kindergarten. A half-day kindergarten is one which children attend kindergarten five days a week for 2 hrs and 30 mins.

Language Arts Achievement. Language Arts Achievement is a measure of the students' knowledge in the area of reading and language arts as established by their percent correct score on the Standards-Based Assessment Program.

Standards-Based Assessment Program (SBAP). The standards-based assessment program (SBAP) is the assessment tool created and developed by the Clark County School District based on the Nevada standards for literacy and the districtwide mandated curriculum (CCSD, 2001). This tool is criterion referenced and not required to be given to students in first grade.

Title I. Title I of the Elementary and Secondary Education Act (P.L. 89-10) is responsible for providing the largest amount of federal aid to public schools. Title I supports students who are at risk of failing in reading and/or math. Title I only provides materials and support programs in English.

Limitations

1. The data from this study were collected from four schools within the same region of CCSD that have a high transiency rate, large populations of ELL students, and are located in low socioeconomic status (SES) areas of Las Vegas. Because other schools and/or districts may have different demographics and standards, the findings of this study should be generalized with caution.

2. Student achievement scores were collected nearly one full academic year after their completion of half-day or full-day kindergarten which means many other unmeasured variables may have effected the correlation as well.

3. The data were limited to one academic year of achievement scores, due to the fact that various grade levels required different assessments to be administered.

4. No pretest data existed for initial comparison of the mean level of achievement for these students.

5. The usage of the SBAP (CCSD, 2001) for data collection specifically restricts the universality of results to CCSD because it was created in reference to Nevada State Standards and the Clark County School District mandated curriculum.

6. The SBAP (CCSD, 2001) as a measurement tool may be a limitation. It has been recommended that group-adminstered, multiple-choice standardized achievements tests in reading and writing skills should be avoided with children until the fourth grade (International Reading Association & the National Association for the Education of Young Children, 1998). It is more difficult to obtain reliable and valid measurement of abilities when using these tools with young children.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Chapter 2 is divided into four major sections. The first section provides a historical overview of kindergarten. The second section provides an overview of how literacy is defined and acquired in the kindergarten setting. The third section discusses the current movement towards full-day kindergarten programs and possible shortcomings. The final section is divided into three subsections that reviewed studies of full-day versus half-day kindergarten: (a) in relation to student achievement, (b) longitudinal studies examining achievement, and (c) studies which specifically focus on reading achievement.

A Historical Overview of Kindergarten

Kindergarten was created in 1837 by Friedrich Froebel. This German program enrolled children aged three through seven. The program was designed to give the child freedom of movement and sequential instruction was provided using gifts and occupations, as well as including a storytelling, rhyming, and finger plays element (Decker & Decker, 1997). Froebel's philosophy also included the mothers and was intended to be a full-day program. Margaret Schurz is credited with opening the first kindergarten in America in 1856. She was a German immigrant and a student of Froebel's.

Schurz eventually influenced Elizabeth Peabody and converted her to be a supporter of kindergarten. Peabody opened her English Speaking kindergarten in Boston in 1860 (Morrison, 1996). Later, Peabody opened several charity kindergartens, organized the first teacher-training center for kindergarten teachers, and made the kindergarten movement public (Bryant & Clifford, 1992). Elizabeth Peabody and Susan Blowe convinced the Superintendent of St. Louis Public Schools to open the first public kindergarten in 1873 which quickly grew to 53 kindergartens in the St. Louis area over the next six years (Bryant & Clifford, 1992). The kindergarten movement began to grow from that point and spread to other parts of the country with a strong Froebelian influence for many years.

In the late 1800s the child study movement and the progressive education movement, along with the large growth of public kindergartens, began to change the philosophy of Froebel's kindergarten (Decker & Decker, 1997). The influence of publicizing kindergarten on a large scale and including these programs into public schools led to more diversity in the curriculum. This also raised the need for increased accountability and assessment. Dewey believed the curriculum of Froebel was contrived and he wanted the children to learn from real-life experiences (Decker & Decker, 1997). The debate over philosophy continued to undermine the kindergarten throughout this period and by the mid 1900's Froebel's philosophy was very loosely interpreted as new ideas, new materials and research came into place (Bryant & Clifford, 1997).

In the 1960s Sputnik changed the face of education by causing an outcry for more focused teaching in the mathematics and science areas and people became more concerned with the problems of the poor (Bryant & Clifford, 1997). Kindergarten also changed under this pressure to be a place to prepare children for first grade. The freedom of choice and self-directed learning became less apparent. New technology and new ideas continued to permeate the kindergarten structure and cause continual change, sometimes with little or no consideration for the educational benefit to children.

In the 21st century kindergarten programs are still under the microscope and experiencing growing pains. Many educators have a different opinion concerning the purpose of kindergarten education. It is debated as to whether the primary purpose is socializing children, providing them with readiness skills for first grade, or stimulating creativity and cooperation with others (Bryant & Clifford, 1997). Organizations such as the National Association for the Education of Young Children (NAEYC) have encouraged appropriateness of kindergarten for all children based on their developmental needs. However, public schools must struggle to achieve high test standards, face funding dilemmas, and educate very diverse populations of children.

Research has become essential to the effectiveness of various kindergarten programs, to include half-day programs, full-day programs, skills-based instruction, developmentally, appropriate instruction, and assessment formats. It is evident that kindergarten will continue to evolve through this research process and continue to change just as the

children and times change the educational foundation. One certainty, Froebel would likely not even recognize the program that has spawned from his original creation.

Literacy

Literacy, simply defined, is the ability to read, write, speak, and listen to a language in a given setting such as home or school (Morrison, 1998). Literacy instruction remains to be one of the areas of greatest concentration for early childhood educators. A predictor of later school success is determined by the child's ability to read and write (International Reading Association & the National Association for the Education of Young Children, 1998). Literacy integrates a range of individual skills, requires various forms of instruction, and involves all developmental domains (Morrison, 1998, & Vacca, Vacca, & Gove, 1991). Children have immense pressure in the early years because learning to read is viewed as the greatest accomplishment for the first years of formal education (Adler & Fisher, 2001). Unfortunately, a child not able to read by 8 years old is viewed as a failure in the American school setting (McGill-Frazen, 1992).

Historically, literacy was viewed as many individual skills, such as letter recognition, phonology, concepts of print, and word knowledge. It was believed children needed to acquire certain basic skills in a variety of areas to demonstrate their readiness for reading (Crawford, 1995). During this time is was unlikely to see integration of literacy into areas such as math and science since it was viewed as an isolated skill.

A little more than three decades ago, a paradigm shift occurred in relation to how educators would view literacy acquisition and instruction. Researchers conducted many empirical studies in the area of literacy acquisition and coined the term *emergent literacy* (Senechal, LeFevre, Smith-Chant, & Colton, 2001). In existence already were theories of early literacy acquisition that were diversified and specific to various beliefs of human growth and development (Crawford, 1995). With the presence of the new research, educators were able to move from the dominant maturationist view of literacy acquisition, acknowledge children begin to acquire literacy at birth, and realize children do not have a set of prescribed readiness skills (Crawford, 1995, Dickinson & McCabe, 2001, & Vacca, Vacca, & Gove, 1991). Viewed collectively, historical theories and modern research have led to a more clearly defined definition of literacy acquisition. Reading and writing abilities do not develop naturally and careful planning and instruction is needed to engage children with print rich environments (International Reading Association & the National Association for the Education of Young Children, 1998). Literacy is no longer viewed as solely as a cognitive task but as a complex activity involving social, linguistic, and psychological components (Strickland, 1990).

Children do not arrive at school with a set of prerequisite skills for learning rather they arrive with a wide range of experience and gaps in readiness skills. Kindergarten then becomes a crucial year for the development of literacy skills, primarily for at-risk children. Kindergarten teachers must be able to provide direct and

individual instruction to account for the differences in a variety of literacy skills to include vocabulary development, concept of word, letter and symbol connections, phonemic awareness, and exposure to print (International Reading Association & the National Association for the Education of Young Children, 1998). High-quality programs will integrate skill-based and whole language techniques, utilize ongoing assessment for all children, and offer additional help for children who may need it (Shellard, 2001). Children who are successful in acquiring these basic skills are likely to be more ready and more successful with the rigorous first grade literacy programs.

Full-Day Movement in Kindergarten

A current movement in kindergarten research and practice is the shift from half-day every day programs to full-day every day programs. This movement has surfaced for a variety reasons such as: parental preference; academic demands; the need for more individualized instruction; a need to limit special education referrals; grade level retentions; and an avoidance to raising the entrance age of children.

Most recent research has yielded many results which have changed some common practices in education. It is now widely accepted that many screening tests for preschool and kindergarten are inappropriate and are simply a creation of a more advanced curriculum (Egertson, 1987). Countless studies have also examined the effects of retention and have determined it to be a harmful practice for children (Kelly, 1999). Educators believe full-day programming reduces the need of students for remedial education services as well as

reducing the amount of students who are retained (Slavin, Karweit, Wasik, 1992). Extra year programs have also proven to be ineffective in increasing achievement outcomes of the students (Kelly, 1999). Despite the better judgment of most educators, others have suggested raising the entrance age of kindergarten students so they are better able to handle the demands of the advanced curriculum (Shepard & Smith, 1988 & Karweit, 1992). It is also evident that compulsory attendance is a requirement in many districts for kindergarten students (Karweit, 1992).

Perhaps the most fundamental reason for establishing full-day kindergarten programs is based on parent requests and needs. Ninety-five percent of all children attend kindergarten, which demonstrates an increase over previous years (Cotton & Conklin, 1995). Since the 1950s mothers have entered the work force due to economic demands and full-day kindergarten is more convenient (Minor, 2001). Child-care costs are lessened or eliminated when children attend school all day. Many child-care facilities are not highly rated for the services they provide and do little to encourage the proper growth and development of children. Parents feel more comfortable having their children participate in more structured, academically guided programs (Cotton & Conklin, 1995). Full-day kindergarten programming also provides a more consistent place for children. Disadvantaged children will enhance their development by having more focussed individual time with materials and activities that are appropriate for their levels (Housden & Kam, 1992).

Parents have expressed the desire for their children to receive more rigorous instruction (Shepard & Smith, 1988).

Many parents also believe full-day kindergarten increases the likelihood of their child being successful in first grade (Hough & Bryde, 1996). Additionally, full-day kindergarten teachers are able to establish better relationships with parents (Damian, 1997).

Full-day kindergarten has the potential for yielding many other positive outcomes as well. Longer days provide greater opportunities for children to receive more individualized instruction as well as more appropriate exploration if a developmental model is followed (Karweit, 1992). Children who are ready to learn more advanced instruction as well as children in need of remediation of basic skills can be accommodated in the full-day kindergarten (Schubert, 1997). Full-day kindergarten can allow for more flexible groupings and child-centered learning (Rothenberg, 1995). Children can become more comfortable at school in the full-day setting as well as having greater opportunities to attend special classes such as music, art and physical education. Full-day kindergarten also allows teachers to deliver instruction at a more suitable pace for the level of students (Damian, 1997). Full-day kindergarten teachers are more accurate in evaluating their students' performance levels (Gullo & Maxwell, 1997).

Full-day kindergarten offers many benefits but has a few shortcomings as well. Both parents and teachers have expressed a concern that students are fatigued in full-day programs yet there is no conclusive research supporting such claims (Puleo, 1986). When schools commit to full-day kindergarten programming they must also consider changes in budget (Fromberg, 1992). More staff, space and materials are

required to operate full-day programs. Karweit (1985), determined the length of the day may not play a role in academic achievement for children. She Concluded if children spent more time fully engaged in their learning rather than wasting time on transitions a half-day program would be all they would require. Finally, it is evident that not all full-day kindergarten programs are implemented in the same manner because it is not a model of instruction (Gullo & Maxwell, 1997). Academic full-day programs may be overwhelming for many disadvantaged children since not all programs follow a child-centered model (Egertson, 1987). Quality of education should not be compromised at the expense of quantity of time. Full-day kindergarten programs may simply deliver breadth of content and neglect the need for depth in the core areas.

Full-day Versus Half-day Kindergarten

Robertson (1984), conducted a study in Ohio to compare half-day kindergarten programs to full-day alternate-day kindergarten programs. The school operated half-day kindergarten for one school year and full-day alternate-day kindergarten for an entire school year. The McCarthy screening Test was used at the start of each year to determine initial levels of the children and there were no significant differences between the two groups found prior to beginning their kindergarten year.

At the conclusion of each school year the children were assessed using the Hahnemann Elementary School Behavior Rating Test (HESB) and the Metropolitan Readiness Test (Robertson, 1984). Full-day alternate-day students scored

significantly higher in three areas on the HESB, one of which indicated more negative behavior than half-day peers. The remaining 13 areas had no significant differences among the tow groups. The Metropolitan Readiness Test (MRT) demonstrated no significant differences in any category. Finally, attendance patterns were examined and there were no significant differences relating to days missed for either program. Interestingly, all variables were similar throughout both academic years such as socioeconomic status, gender ratio, and ethnic ratio. Robertson (1984), concluded outcomes were similar because in the full-day programs children would spend the second portion of their day in musical or physical activities, not academics.

Holmes and McConnell (1990), based their study on differences between children who had attended full-day kindergarten and children who had attended half-day kindergarten in relation to achievement on six measures of the California Achievement Test (CAT): (a) visual recognition, (b) sound recognition, (c) vocabulary, (d) comprehension, (e) language expression and, (f) math concepts and applications. The research was unique because it was an experimental study based on the desire of the school board's decision to move from half-day programming to full-day programming over a two year period. In this study involving 20 schools, 10 schools were randomly selected to extend their kindergarten day while the other 10 continued with half-day programming. Half of the schools selected were Chapter I schools and the other half of the schools were determined to be affluent. The groups were comprised of 311 half-day students and 326 full-day students. The Brigance Inventory

of Early Development was administered to all children initially to determine if the groups were equivalent.

Analysis of covariance was used to determine if an interaction between length of the school day and gender existed with scores from the CAT (Holmes & McConnell, 1990). Only two significant differences existed in the six areas. Half-day female students scored significantly higher than full-day boys in the area of comprehension. This difference could not be attributed to programming differences. It was not determined as to why full-day males students scored significantly higher than half-day males on math concepts and applications. Half-day kindergarten students had higher scores than full-day students in the remaining four areas but were determined not to be of significance.

Similarly, Hough and Bryde (1996), conducted a study to determine ways in which full-day kindergarten programming is beneficial and/or detrimental to students as compared to those who attend half-day programs. Specifically, they examined the following questions: (a) does length of school day affect curricula and instruction, (b) do students attending full-day programs experience more fatigue than half-day counterparts, (c) does length of school day affect socialization skills, (d) do students attending full-day programs score higher on criterion-referenced tests, (e) do students attending full-day programs score higher on norm-referenced tests, (f) what are the views of parents and teachers as to the benefits and shortcomings of full-day and half-day programs, and (g) do attendance patterns differ?

They applied a matched-pairs design of six schools which offered full-day kindergarten and six schools which offered

half-day kindergarten. The pairs were located in the same geographic area, were similar in size, and had similar percentage of students receiving free or reduced lunches (Hough & Bryde, 1996).

Based on observational data, interviews, and questionnaires, the length of the school day does not significantly alter the curriculum, however instructional practices tend to differ (Hough & Bryde, 1996). Full-day programs tended to utilize more small group activities than half-day programs. It was determine based on Chi Square statistic and analysis of variance of observations that no significant differences of child fatigue existed between programs. Children in full-day programs engaged in social interactions for greater lengths of time, however the quality of these interactions was not measured and failed to produce significant criterion differences. Full-day kindergarten students scored significantly higher on 5 of 9 reading items based on the student report cards, with awareness of printed symbols yielding the greatest difference and the most significance. Full-day students had significantly higher math scores on 2 of the 11 items that included basic addition and subtraction and the ability to make reasonable predictions with numbers. Full-day students scored significantly higher than half-day students on every item of the Early School Assessment norm-referenced achievement test as well.

Parent surveys were collected from 417 participants and it was determined that parents expressed high levels of satisfaction regardless of the program enrollment of their child (Hough & Bryde, 1996). Overall, the findings revealed

that parents of full-day kindergarten children: (a) felt a better connection with the teacher, (b) greater enthusiasm was demonstrated from their child, and (c) believed their child had an increased chance for success in first grade. Finally, the study indicated that full-day students attend more regularly than half-day students; on average, 40 hours more throughout the school year. An assumption was that parents of full-day children feel school is more serious when it is a full-day but the actual difference is attendance rates is not known. Hough and Bryde (1996), therefore, concluded full-day programming offers more benefits than half-day programs overall.

Similar to the parent questionnaire of Hough and Bryde (1996), Greer-Smith (1990), developed a questionnaire to determine teacher opinions of half-day and full-day kindergarten. The questionnaire was sent to 10 half-day and 10 full-day kindergarten teachers. Eight teachers from each group responded. The findings suggest that teachers support the program they operate. Teachers from both programs tended to agree that too much school at an early age could have a negative effect. Half-day kindergarten teachers felt their programs offered quality time and full-day kindergarten teachers felt their programs allowed for more enrichment activities and met the daycare needs of parents. Teachers of half-day programs felt children needed time to transition from home to school and teachers of the full-day programs felt students had already made this transition with their exposure to preschool.

Greer-Smith (1990) concluded that the results are mixed regarding full-day and half-day programming. Both programs

appear to have advantages and disadvantages. Teachers tended to be pleased with their particular program as well. Finally, she determined length of day is only one element of kindergarten and other program factors should be carefully evaluated such as program quality and appropriateness of curriculum.

Wang and Johnstone (1999), conducted a study as a second-year evaluation of full-day programs to determine if the district in their study should expand full-day kindergarten to more schools. They used a stratified random sampling strategy so students were selected proportionately from each school for each area of analysis. All kindergarten students who remained in the same program during the pretest and posttest periods were included in at least one of the four areas of analyses. Classes and students were further classified by monolingual or bilingual program participation.

Results from each of the four assessment tools were reported in mean scores from full-day English speaking kindergarten, full-day Spanish speaking kindergarten, half-day English speaking kindergarten, and half-day Spanish speaking kindergarten on pretest and posttest items. All students demonstrated improved scores between pretest and posttest measures on the IPT Oral Language Assessment (Wang & Johnstone, 1999). Full-day English speaking kindergarten students had the highest overall score. Mathematics achievement was measured using the Mini-Battery of Achievement (MBA). Again students demonstrated growth between pre and posttest measures and full-day English speaking kindergarten students again had the highest mean score. These findings were consistent on the Observation

Survey of Early Literacy Achievement and the Irving ISD Report Card Social/Emotional Developmental Checklist as well.

Findings did favor full-day kindergarten programming for English speaking students, however, there appeared to be no significant differences for Spanish speaking children in half-day or full-day programs (Wang & Johnstone, 1999). Regardless of the lack of significant effect for Spanish speaking children it was determined the full-day students still made greater improvements than did their half-day counterparts. The findings from this study concluded full-day kindergarten should be expanded throughout the designated district.

Nunnelley (1996), conducted a study to compare Title I half-day kindergarten and Title I full-day kindergarten in relation to academic achievement and parent involvement. Both groups were similar in attendance patterns and demographics, however half-day students had a greater percentage of working parents. Half-day students had had slightly higher mean gains on the Peabody Picture Vocabulary Test but the Work Sampling System demonstrated both groups were similar. The Early Childhood Environment Rating Scale demonstrated both programs were similar in their design and approach. Finally, their was greater parent participation in workshops in relation to the full-day program.

Nunnelley (1996) concluded that when all things are essentially the same such as demographics, parent involvement, attendance, and curriculum quality, there were no measurable differences for children who participated in full-day or half-day kindergarten programs. Due to the small sample size of this study she cautions generalization to

other populations and highlights a need for further studies with larger sample sizes.

Longitudinal Studies

Cryan, Sheehan, Wiechel, and Bandy-Hedden (1992), conducted a statewide longitudinal study to compare children who had completed half-day programs to children who had completed full-day programs. Final analysis of data determined children who had completed full-day programs were more involved in the classroom, had greater independent learning abilities, worked more effectively with peers, and demonstrated more socially positive behaviors. These children were only tracked through the completion of second grade.

Evans and Marken (1983, also conducted a longitudinal study in a large metropolitan area to determine if full-day kindergarten did produce greater results. This quasi-experimental design selected all 174 children available from two schools in first, second, and third grades who had participated in half-day programming or full-day programming. Data was collected from student scores on the California Achievement Test (CAT), the Early Childhood School Sentiment Scale, teachers' ratings of classroom behavior based on Likert-type scales of 24 seven point items, and teachers' ratings of 16 five point items to measure attitude.

Evans and Marken (1983) concluded there were no significant long-term differences in achievement or attitude of children who had completed half-day or full-day kindergarten programs in first, second, or third grades. The only slight difference they discovered was children who had

completed half-day kindergarten had a more positive attitude towards reading than did their full-day counterparts, however there was no significant difference between the cohorts of scores in reading achievement. Teacher opinions did favor full-day programming but overall findings demonstrated length of time did not make a significant difference for the students on any measures.

Another study (Humphrey, 1983) was conducted to determine the long-term benefits associated with enrollment in full-day kindergarten versus half-day kindergarten. Students were selected based on their enrollment in kindergarten during the 1978-1979 and 1979-1980 school years at specific school sites. Humphrey (1983), gave third and fourth grade students who had completed full-day kindergarten a questionnaire and found these students favored their full-day experience. Students who completed half-day programs were not given the questionnaire. It is unknown, however half-day students may have favored their kindergarten experience as well.

Using the Piers-Harris Children's Self-Concept Scale, it was determined full-day kindergarten students from the 1978-1979 school year had a statistically significant higher self-concept than their half-day counterparts (Humphrey, 1983). Students from the 1979-1980 had no significant difference in their scores, however, the mean scores for the full-day program students were higher. Students were also given the Survey of School Attitudes. The findings suggested elevated mean scores in favor of the full-day students in three areas and significantly higher scores in science for the 1978 and 1979 cohort. Half-day students had higher

scores in all areas and were significantly higher in social studies than their full-day counterparts for the 1979 and 1980 cohort.

Humphrey (1983) made 23 academic grade comparisons. Eleven of those comparisons were significantly associated with program enrollment in favor of full-day students in both cohorts. Students who had completed full-day kindergarten received more satisfactory marks and fewer less-than satisfactory marks. Further, full-day students who had better marks for conduct were retained less, had greater vocabulary and comprehension scores, had higher standardized scores, but had worse handwriting than half-day students.

Humphrey (1983) also administered the Gates-MacGinitie Reading Test to the 1978-1979 cohort during third grade and to the 1979-1980 cohort during second grade. Children who had attended full-day kindergarten scored significantly higher and had higher mean scores in vocabulary and comprehension. Full-day students also scored higher in all 14 areas of the Comprehensive Tests of Basic Skills.

Finally, questionnaires were given to parents and teachers of both cohorts and both program types (Humphrey, 1983). Parents and teachers favored the full-day kindergarten experience over the half-day program.

Koopmans (1991) also examined the longitudinal effects of all-day kindergarten attendance on achievement among two cohorts of children. Cohort one began first grade in 1987 and cohort 2 began first grade in 1988. Reading and math scores were consistently higher for students who had participated in full-day kindergartens programs. These full-day students clearly entered first grade in a more

advantageous position for school success. Full-day kindergarten was recommended as a result of this analysis. However, it was also determined that the differences in both cohorts loses statistical significance after first grade. It is unknown as to why scores begin to decline but it can be noted that both groups experience similar levels of decline in scores, however math computation scores for both groups remain constant. Koopmans (1991) concluded full-day programming offers a better start for children despite lon-term effects which decrease scores over time.

Reading Achievement Studies

One study was conducted to determine the nature of differences between full-day and half-day kindergartens in the area of reading and reading readiness (Hoffman & Daniels, 1986). Two checklist-type questionnaires were sent to 83 full-day teachers and 83 half-day teachers asking questions related to instruction, materials, management, and student performance. First grade teachers assessed the performance of incoming students as well. Fifty percent of the questionnaires were returned for scoring.

Overall, there were few significant differences between full-day and half-day programs according to Chi square analysis. Half-day programs did favor basal instruction and full-day programs approached instruction in a more appropriate manner for young children. The actual amount of time teacher claimed for reading instruction was proportional in relation to their program. First grade teachers noted a few advantages for children who had participated in full-day kindergarten but overall indicated the students were very

similar in their experience and abilities upon beginning first grade.

Mongiardo (1988) compared full-day kindergarten and half-day kindergarten in relation to the impact on first grade reading achievement scores. Subjects for this study consisted of 44 students in 1985, who had completed half-day kindergarten previously, and 80 students in the first grade in 1986, who had previously completed full-day kindergarten. The Science Research Associates Achievement Series (SRA) had been administered to both groups of children after completion of eight months of first grade instruction in the Economy Reading Program. Full-day kindergarten students scored higher but there was no significant difference.

Harrison-McEachern (1989) conducted a study to determine if attendance in full-day or half-day kindergarten had an effect on first grade reading achievement. Sixty-seven students who had attended half-day kindergarten and 66 students who had attend full-day kindergarten were given the first grade Comprehensive Tests of Basic Skills (CTBS) after eight months of first grade instruction in the Macmillan Reading Series. Students who had attended full-day kindergarten scored significantly higher than their half-day counter parts.

Summary

The literature review of program attendance and achievement, specifically language arts achievement for full-day kindergarten participants offers support to the study of the problem. This study will examine the reading test scores of students who have completed full-day kindergarten and

students who have completed half-day kindergarten to determine if a significant difference exists between the two programs. The intent of this study is to add to the body of research which already exists and aid educators in making sound decisions as to what length of kindergarten day to offer for the benefit of all students.

CHAPTER 3

METHOD

Overview

This was a quantitative quasi-experimental study designed to examine the effect of full-day and half-day kindergarten programs on first-grade language arts achievement test scores for at-risk students. Gender differences in performance between and within the program types also were investigated. Student gender was the primary variable to determine the significance of the relationship of language arts achievement with half-day or full-day kindergarten enrollment. The criterion variable for this study was language arts achievement as measured by the Standards-Based Assessment Program (Clark County School District, 2001).

Research Questions

This study focused on seven questions:

1. Is there a significant difference in language arts achievement scores between at-risk students and enrollment in a half-day or full-day kindergarten program?
2. Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and boys who attended half-day kindergarten programs?

3. Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and girls who attended full-day kindergarten programs?
4. Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and boys who attended full-day kindergarten programs?
5. Is there a significant difference in language arts achievement scores between boys who attended half-day kindergarten and boys who attended full-day kindergarten programs?
6. Is there a significant difference in language arts achievement scores between boys who attended half-day kindergarten and girls who attended full-day kindergarten programs?
7. Is there a significant difference in language arts achievement scores between girls who attended full-day kindergarten and boys who attended full-day kindergarten programs?

Schools

The sample groups selected for the purpose of this study are representative of the population to which these findings will be generalizable. The four schools selected for the purpose of this study are in the Northeast Region of the Clark County School District (CCSD), located in Las Vegas, Nevada. These sites were selected because they are very similar in student enrollment, socioeconomic status, overall academic achievement, and transiency rates. One major

difference is that two schools provided full-day kindergarten for all students while the other two schools provided half-day kindergarten for all students. Table 1 identifies the TerraNova CTBS/5 (CTB/McGraw-Hill, 2002) fourth grade standardized test scores for the schools participating in this study (Clark County School District, 2002). This information indicates the academic ability of the students attending schools A, B, and D was similar as well as showing the relationship to the district and national average.

Table 1

TerraNova CTBS/5 Fourth Grade Results

School	Reading	Math	Language	Science
National	50	50	50	50
CCSD	50	61	55	46
A	29	38	31	32
B	29	51	36	29
C	--	--	--	--
D	38	45	38	32

Note. Dashes indicate no scores exist for school C because they do not have fourth grade students.

School A was the largest elementary school within the CCSD and served 1,346 students during the 2001-2002 school year. Average daily attendance for school A was 94.4% with a transiency rate of 49%. Sixty-nine percent of the students were identified as English Language Learners (ELL) and were

predominately Spanish speakers. Ninety-one percent of the students received free or reduced meals compared to the CCSD average of 29%. Expenditures per student were reported at $5,572 compared to CCSD average of $5,422. School A was identified as a Title I school and used the additional monies to operate full-day kindergarten classrooms during the 2000-2001 school year and nine full-day kindergartens during the 2001-2002 school year. This site received $820,272 in state and federal grants for remedial education during the 2001-2002 school year. School A was not identified as an academically inadequate school by CCSD standards.

School B was also identified as a Title I school and served 877 students during the 2001-2002 school year. Average daily attendance for school B was 94.6% with a transiency rate of 52%. Sixty-three percent of the students were identified as ELL, predominately primary speakers of Spanish. Ninety percent of the students received free or reduced meals. Expenditures per student were reported at $5,713. School B used the additional Title I monies to fund full-day kindergarten during the 2000-2001 and 2001-2002 school years. This site received $596,777 in state and federal grants for remedial education during the 2001-2002 school year. School B was not identified as an academically inadequate school by CCSD standards.

School C served 788 kindergarten, first and second grade students during the 2001-2002 school year. Average daily attendance for school C was 92.5% with a transiency rate of 52%. Twenty-nine percent of the students were identified as ELL, predominately primary speakers of Spanish. Seventy-two percent of the students received free or reduced meals.

Expenditures per student were reported at $5,354. School C was not identified as a Title I and operated half-day kindergarten during the 2000-2001 and 2001-2002 school years. This site received $2,560 in state and federal grants for remedial education during the 2001-2002 school year. School C was not identified as an academically inadequate school by CCSD standards.

School D enrolled 619 students during the 2001-2002 school year. Average daily attendance for school D was 93.8% with a transiency rate of 47%. Seventy-four percent of the students were identified as ELL, predominately primary speakers of Spanish. Eighty-one percent of the students received free or reduced meals. Expenditures per student were reported at $6,403. School D was identified as a Title I, and operated half-day kindergarten during the 2000-2001 and 2001-2002 school years. This site received $615,837 in state and federal grants for remedial education during the 2001-2002 school year. School D was not identified as an academically inadequate school by CCSD standards.

Students

In order for student data to be relevant for the purpose of this study the following criteria will be used:

1. The student must have been enrolled at schools A, B, C, or D for kindergarten during the 2000-2001 school year for a minimum of 140 days.
2. Students identified using the first criteria further had to be enrolled at schools A, B, C, or D for first grade during the 2001-2002 school year on the test dates for the CCSD mandated SBAP.

3. Student data from children who had been retained in either kindergarten or first grade were omitted.

There were 237 students included in this study. Full-day students attended classes at school sites A or B and half-day students attended classes at school sites C or D. Table 2 shows the amount of students included by program and gender.

Table 2

Student Demographics

Group	N	% of total N
Female		
Half-day	66	27.85
Full-day	43	18.14
Male		
Half-day	72	30.38
Full-day	56	23.63

Materials

The Standards-Based Assessment Program (CCSD, 2001) is a criterion referenced test. The Clark County Curriculum Essentials Framework is directly based on the Nevada State Content Standards for English and Language Arts. The SBAP (CCSD, 2001) was developed by asking first grade teachers to submit test items they felt directly correlated with curricular items. The CCSD Testing and Evaluation Department

then selected the actual test items from the pool and further specified the element or elements of the curriculum and State Standards that the test item actually measures. The test is revised whenever state standards or local curriculum changes are made. As each test was administered items that appeared to be poor based on the results were replaced with different items from the pool.

The CCSD has not generated reliability data for the SBAP (CCSD, 2001). Reliability was calculated using Kuder-Richardson Formulae 21 (KR-21) for the purpose of this study (Gay, 1996). The KR-21 was selected because of it's ease to apply and it's results are a more conservative estimate of reliability. The KR-21 coefficient for the SBAP was .96. The standard error of measurement was calculated to be 3.68. This indicates how often one can expect errors of a given size (Gay, 1996). The SBAP is based on a 100 point scale. For the purpose of this study, the reliability and standard error of measurement were acceptable (see Appendix B for statistical formulae).

The SBAP (CCSD, 2001) was administered in the spring of 2002 at all selected school sites. Clark County school District maintains strict policies regarding testing procedures. All sites followed the CCSD testing protocol procedures guaranteeing consistency in test administration at these school sites. Further, all sites had the tests scored at the district level to ensure accuracy and unbiased analyses of the results.

Permission to conduct this study was made to the University of Nevada, Las Vegas Social/Behavioral Sciences Institutional Review Board (see Appendix C). Permission for use of the test scores and attendance data was made to the Superintendent of Schools for the Clark County School District (see Appendix D). Specific research protocol was also submitted to the Department of Testing and Evaluation of the Clark County School District. Principal consent was then requested to access students attendance records and individual SBAP scores at the selected school sites (see Appendices E & F).

Data Collection

Attendance Data

Archived student attendance data from the four selected school sites was retrieved for all students enrolled in kindergarten during the 2000-2001 school year and all students enrolled in first grade during the 2001-2002 school year. Students who had been present at one of the four selected sites for a minimum of 140 days during their kindergarten 2000-2001 school year initially were selected. It was then determined if these students were also present at the same school site for a minimum of 140 days during their first grade 2001-2002 school year.

Standards Based Assessment Program

Using the names of students selected from attendance requirements, archival data was collected from the CCSD Standards-Based Assessment Program (SBAP) for the 2001-2002 school year in the academic areas of language arts and writing mechanics at the four participating school sites.

Once test data were obtained for the individual students their name was replaced simply with their gender designation and program affiliation.

Treatment of the Data

Data from the Standards Based Assessment Program (SBAP) were analyzed to answer the following questions:

Research Question One: Is there a significant difference in language arts achievement scores between at-risk students and enrollment in a half-day or full-day kindergarten program?

Analysis: In order to identify significant differences between students who attended half-day kindergarten and students who attended full-day kindergarten in the five areas of language arts, a one-way ANOVA was conducted on the SBAP scores of the students. An alpha level of .05 was set.

Research Question Two: Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and boys who attended half-day kindergarten programs?

Analysis: In order to identify significant differences between girls who attended half-day kindergarten and boys who attended half-day kindergarten in the five areas of language arts, a one-way ANOVA was conducted on the SBAP scores of the students. An alpha level of .05 was set.

Research Question Three: Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and girls who attended full-day kindergarten programs?

Analysis: In order to identify significant differences between girls who attended half-day kindergarten and girls who attended full-day kindergarten in the five areas of language arts, a one-way ANOVA was conducted on the SBAP scores of the students. An alpha level of .05 was set.

Research Question Four: Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and boys who attended full-day kindergarten programs?

Analysis: In order to identify significant differences between girls who attended half-day kindergarten and boys who attended full-day kindergarten in the five areas of language arts, a one-way ANOVA was conducted on the SBAP scores of the students. An alpha level of .05 was set.

Research Question Five: Is there a significant difference in language arts achievement scores between boys who attended half-day kindergarten and boys who attended full-day kindergarten programs?

Analysis: In order to identify significant differences between boys who attended half-day kindergarten and boys who attended full-day kindergarten in the five areas of language arts, a one-way ANOVA was conducted on the SBAP scores of the students. An alpha level of .05 was set.

Research Question Six: Is there a significant difference in language arts achievement scores between boys who attended half-day kindergarten and girls who attended full-day kindergarten programs?

Analysis: In order to identify significant differences between boys who attended half-day kindergarten and girls who attended full-day kindergarten in the five areas of language

arts, a one-way ANOVA was conducted on the SBAP scores of the students. An alpha level of .05 was set.

Research Question Seven: Is there a significant difference in language arts achievement scores between girls who attended full-day kindergarten and boys who attended full-day kindergarten programs?

Analysis: In order to identify significant differences between girls who attended full-day kindergarten and boys who attended full-day kindergarten in the five areas of language arts, a one-way ANOVA was conducted on the SBAP scores of the students. An alpha level of .05 was set.

CHAPTER 4

RESULTS

This study was conducted to determine if there was a significant difference between the type of kindergarten program enrollment and the language arts achievement scores of students at the completion of first grade. A secondary purpose was to determine if there was a correlation between at-risk boys and at-risk girls enrolled in half-day and full-day kindergarten as demonstrated by their language arts achievement scores.

For the purpose of this study seven research questions were addressed. Archival SBAP test data were obtained for 237 students from four school sites in the Clark County School District, Las Vegas. The data were analyzed using SPSS. Several one-way ANOVAs were conducted with an alpha level of .05 to determine significance. Descriptive statistics were included in relation to gender and program enrollment in each of the five subtest areas.

Children who attended full-day and half-day kindergarten programs took the SBAP in the Spring of 2002 near the completion of their first grade year. Individual raw scores in each of five areas of the language arts portion of the test were collected for each student who met the selection criteria previously mentioned. The five areas of the first grade language arts portion of the SBAP (CCSD, 2001) are: (a) writing-mechanics (Writ Mech), (b) reading comprehension-

informational texts (RCP Texts), (c) reading comprehension-literature (RCP Lit), (d) reading comprehension-process skills and strategies (RCP Strat), and (e) word knowledge-phonics, vocabulary, and spelling (Word Knowl). One-way ANOVAs were calculated in each of the five areas to compare mean scores with a .05 level of significance.

Analysis for Research Question One

Question One: Is there a significant difference in language arts achievement scores between at-risk students and enrollment in a half-day or full-day kindergarten program?

A summary of the results for this research question are presented in Table 3. Results of the ANOVAs indicated there was no significant difference between gender groups on the subtest Writ Mech, [F (1,235)= .588, p= .444] and no significant difference between the program type, [F (1,235)= .006, p= .939]. However, females in the full-day program had significantly higher scores on the subtest Writ Mech, [F (1,235)= 4.320, p= .039]. There were no significant main effects for gender or program on the subtest RCP Texts and no interaction effect as well. Gender had a significant main effect in favor of females in the area of RCP Lit, [F (1,235)= 11.332, p= .001]. Program had no significant main effect, [F (1,235)= 2.323, p= .129]. Females in full-day programs also scored significantly higher on RCP Lit, [F (1,235)= 4.221, p= .041]. In the RCP Strat and Word Knowl areas there were no significant main effects for the gender of the children or their program enrollment. In either area there also were no significant interaction effects between gender and program.

Table 3

Summary of ANOVAs for Gender and Program

Dependent Variable	Source	F	P
1. Writ Mech			
	Gender	.588	.444
	Program	.006	.939
	Gender*Program	4.320*	.039
2. RCP Texts			
	Gender	2.214	.138
	Program	.866	.353
	Gender*Program	2.118	.147
3. RCP Lit			
	Gender	11.332*	.001
	Program	2.323	.129
	Gender*Program	4.221*	.041
4. RCP Strat			
	Gender	1.779	.184
	Program	1.005	.317
	Gender*Program	.658	.418
5. Word Knowl			
	Gender	1.684	.196
	Program	1.101	.295
	Gender*Program	1.994	.159

*p<.05.

The means and standard deviations for the five language arts areas of the SBAP are presented in Table 4. Females who had completed full-day kindergarten had higher mean scores in all language arts areas of the SBAP. Females who had completed half-day kindergarten had higher mean scores than males who had completed either kindergarten program in the areas of RCP Texts, RCP Lit, RCP Strat, and Word Knowl. However, half-day females had a lower mean score in Writ Mech (M = 8.24, SD = 2.19) than did half-day males (M = 8.53, SD = 2.34). Males who had completed half-day programs had the lowest mean score on RCP Strat than all other groups (M = 4.75, SD = 1.30). Males who had completed full-day programs had the lowest mean scores in the areas of Writ Mech, RCP Texts, RCP Lit, and Word Knowl.

Analysis for Research Question Two

Question Two: Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and boys who attended half-day kindergarten programs?

A summary of the results for this research question are presented in Table 5. Results of the ANOVAs indicated there were no significant main effects in any of the five subtesting areas for the gender of children in half-day programs.

Table 4

Means and Standard Deviations for the Standards-Based Assessment Program

Dependent Variables	Means	Standard Deviation
1. Writ Mech		
half-day female (n=66)	8.24	2.19
full-day female (n=43)	8.95	2.12
half-day male (n=72)	8.53	2.34
full-day male (n=56)	8.00	2.30
2. RCP Texts		
half-day female (n=66)	4.82	1.68
full-day female (n=43)	5.40	1.53
half-day male (n=72)	4.75	1.68
full-day male (n=56)	4.68	1.80
3. RCP Lit*		
half-day female (n=66)	12.53	2.98
full-day female (n=43)	14.07	2.16
half-day male (n=72)	11.86	3.19
full-day male (n=56)	11.80	3.05
4. RCP Strat		
half-day female (n=66)	4.86	1.31
full-day female (n=43)	5.19	.76
half-day male (n=72)	4.75	1.30
full-day male (n=56)	4.80	1.41

Table continues

5.	Word Knowl		
	half-day female (n=66)	7.27	1.91
	full-day female (n=43)	7.88	1.45
	half-day male (n=72)	7.24	1.75
	full-day male (n=56)	7.20	1.72

*p<.05.

Table 5

Summary of ANOVAs for Half-day Girls and Boys

Dependent Variable	Half-Day	F	P
1. Writ Mech	Gender	.545	.462
2. RCP Texts	Gender	.057	.812
3. RCP Lit	Gender	1.614	.206
4. RCP Strat	Gender	.261	.610
5. Word Knowl	Gender	.014	.907

*p<.05.

Analysis for Research Question Three

Question Three: Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and girls who attended full-day kindergarten programs?

One-way ANOVAs were calculated in each of the five areas to compare mean scores with a .05 level of significance. A summary of the results for this research question are presented in Table 6. Results of the ANOVAs indicated there were no significant main effects in four subtesting areas among girls attending either program. However, there was a significant main effect for the program enrollment in the area of RCP Lit [F (1,107)= 8.092, p= .005]. Girls who had participated in full-programs scored significantly higher in reading comprehension of literature than did their half-day counterparts.

Table 6

Summary of ANOVAs for Half-day and Full-day girls

Dependent Variable	Girls	F	P
1. Writ Mech	Program	2.817	.096
2. RCP Texts	Program	3.290	.073
3. RCP Lit	Program	8.092*	.005
4. RCP Strat	Program	2.125	.148
5. Word Knowl	Program	3.195	.077

*p<.05.

Analysis for Research Question Four

Question four: Is there a significant difference in language arts achievement scores between girls who attended half-day kindergarten and boys who attended full-day kindergarten programs?

One-way ANOVAs were calculated in each of the five areas to compare mean scores with a .05 level of significance. A summary of the results for this research question are presented in Table 7. Results of the ANOVAs indicated there were no significant differences in any subtesting areas among girls attending half-day programs and boys attending full-day programs.

Table 7

Summary of ANOVAs for Half-day Girls and Full-day Boys

Dependent Variable	Source	F	P
1. Writ Mech	Gender*program	.354	.553
2. RCP Texts	Gender*program	.196	.659
3. RCP Lit	Gender*program	1.763	.187
4. RCP Strat	Gender*program	.010	.921
5. Word Knowl	Gender*program	.053	.818

*p<.05.

Analysis for Research Question Five

Question Five: Is there a significant difference in language arts achievement scores between boys who attended half-day kindergarten and boys who attended full-day kindergarten programs?

One-way ANOVAs were calculated in each of the five areas to compare mean scores with a .05 level of significance. A summary of the results for this research question are presented in Table 8. Results of the ANOVAs indicated there were no significant main effects in any subtesting areas among boys attending either program.

Table 8

Summary of ANOVAs for Half-day and Full-day Boys

Dependent Variable	Boys	F	P
1. Writ Mech	Program	1.626	.205
2. RCP Texts	Program	.054	.817
3. RCP Lit	Program	.011	.918
4. RCP Strat	Program	.141	.708
5. Word Knowl	Program	.016	.898

*p<.05.

Analysis for Research Question Six

Question Six: Is there a significant difference in language arts achievement scores between boys who attended half-day kindergarten and girls who attended full-day kindergarten programs?

One-way ANOVAs were calculated in each of the five areas to compare mean scores with a .05 level of significance. A summary of the results for this research question are presented in Table 9. Results of the ANOVAs indicated significant differences in main effects among boys who attended half-days and girls who attended full-days.

Girls who had attended full-day programs scored significantly higher in four of five language arts subareas than did boys who had attended half-day programs. Girls performed significantly better than boys in the area of RCP Texts [F (1,113)= 4.255, p= .041], RCP Lit [F (1,113)= 15.635, p= .04], RCP Strat [F (1,113)= 4.017, p= .047], and Word Knowl [F (1,113)= 4.178, p= .043]. There was no significant difference among the two groups in the area of writing mechanics [F (1,113)= .957, p= .330].

Analysis for Research Question Seven

Question Seven: Is there a significant difference in language arts achievement scores between girls who attended full-day kindergarten and boys who attended full-day kindergarten programs?

One-way ANOVAs were calculated in each of the five areas to compare mean scores with a .05 level of significance. A summary of the results for this research question are

presented in Table 10. Results of the ANOVAs indicated there were significant main effects in four of the five subtesting areas for the gender of children in full-day programs.

Girls who had attended full-day programs scored significantly higher in four of five literacy subareas than did boys who had attended full-day programs. Girls performed significantly better than boys in the area of Writ Mech [F (1,97)= 4.470, p= .037], RCP Texts [F (1,97)= 4.384, p= .039], RCP Lit [F (1,97)= 16.611, p= .000], and Word Knowl [F (1,97)= 4.436, p= .038]. There was no significant difference among the two groups in the area of RCP Strat [F (1,97)= 2.181, p= .143].

Table 9

Summary of ANOVAs for Half-day Boys and Full-day Girls

Dependent Variable	Source	F	P
1. Writ Mech	Gender*program	.957	.330
2. RCP Texts	Gender*program	4.255*	.041
3. RCP Lit	Gender*program	15.635*	.000
4. RCP Strat	Gender*program	4.017*	.047
5. Word Knowl	Gender*program	4.178*	.043

*p<.05.

Table 10

Summary of ANOVAs for Full-day Girls and Boys

Dependent Variable	Full-day	F	P
1. Writ Mech	Gender	4.470*	.037
2. RCP Texts	Gender	4.384*	.039
3. RCP Lit	Gender	16.611*	.000
4. RCP Strat	Gender	2.181	.143
5. Word Knowl	Gender	4.436*	.038

*p<.05.

CHAPTER 5

DISCUSSION

As we transition into the 21st century, the trend for full-day kindergarten for all students has emerged. Doubling the amount of time spent in the kindergarten program does not necessarily equate to increased program quality (Weast, 2001). Educators should remain mindful when they consider offering full-day kindergarten simply as another way to increase content instruction and learning rigor. Perhaps what is most important to consider is what children do in kindergarten not how long they spend there (Clark & Kirk, 2001).

However, educators understand not all children have equal opportunities for quality preschools which translates into a performance gap early for children and full-day kindergarten may provide an appropriate alternative to assist these children (Weast, 2001). Most educators recognize these learning deficits exist, children have little or no experience with books and some children have little or no ability to speak English upon kindergarten entrance (Natale, 2001). Furthermore, if designed with the children in mind, full-day kindergarten can provide for increased opportunities for the children to be engaged in meaningful activities, receive more focused small-group instruction, and receive these services in a more child-centered environment (Clark & Kirk, 2001).

Most recent research on full-day kindergarten suggests positive benefits for the students in academic achievement and behavior standards (Clark & Kirk, 2201; Nelson, 2000). There still seems to be inconsistency with how full-day programs are designed. There are programs that focus on academics, other combine elements of child-care settings for a portion of the day, and still others included increased amounts of time for activities such as art, music, physical education, and field trips (Nelson, 2000). Perhaps research of larger samples with results more generalizable to greater populations would limit these differences and lead to the creation of kindergartens designed with the children in mind. Careful consideration must be made when considering using the additional time to increase the developmental appropriateness of the program or to increase less appropriate skills instruction (Elicker & Mathur, 1997).

Conclusions

Eight conclusions may be drawn from this study. They are based on the quantitative data collected.

1. Full-day kindergarten does enhance the Standards-Based Assessment Program language arts achievement scores, specifically in reading comprehension of literature for female students.

2. Full-day kindergarten had no significant effect on the Standards-Based Assessment Program language arts achievement scores for male students.

3. Actual significance between students who attended full-day and students who attended half-day kindergarten may be due to a lack of difference related to the two program

types or may simply be a limitation of using the SBAP scores as dependent variables.

4. Regardless of program enrollment, female students typically had greater mean achievement scores than did their male counterparts.

5. There were no significant differences in Standards-Based Assessment Program scores among girls attending half-day programs and boys attending full-day programs.

6. Program enrollment did not produce significant differences among Standards-Based Assessment Program scores for male students.

7. Gender and program enrollment produced significant differences in favor of full-day girls over half-day boys in all areas except writing mechanics.

8. Significant differences of Standards-Based Assessment Program scores in favor of female students were evident when full-day students were compared.

Recommendations for Further Study

Currently, the body of research that exists focusing on full-day and half-day kindergarten programs favors full-day programming in most studies. This research also favors full-day kindergarten for students despite the overall lack of significance in all test areas. This study adds to the research base, however, the following areas are suggested for future study.

1. Further qualitative research is needed to examine the difference between half-day programs and full-day programs with smaller class sizes to determine if class size

or length of instructional day is the greater predictor of academic achievement.

2. Further qualitative research should examine English language acquisition results based on pretest and posttest results in relation to half-day and full-day kindergarten program enrollment.

3. A longitudinal study comparing students with very similar demographics enrolled in a half-day and full-day kindergarten would be beneficial to determine if there is a point at which achievement score differences are significant and can be attributed to program enrollment.

4. Studies within the school district used in this study should examine the outcomes of half-day and full-day kindergarten using more authentic forms of assessment and measure overall growth using pre-kindergarten and post-kinderagrten data.

5. Because it is recognized that boys develop literacy skills at a slower rate than girls, a study that examines these specific differences and various approaches to literacy instruction would be beneficial.

6. Based on the findings of this study boys in full-day programs had the lowest achievement scores in language arts. Further research should examine math and behavior outcomes for boys, specifically to determine the area of full-day programming that produces the greatest benefit.

7. If full-day kindergarten is to be implemented as an intervention for at-risk students, it is recommended that other types of intervention (e.g. class size reduction, pullout programs, extended-day programs, approaches to curriculum delivery) be examined to determine the most cost

effective approach that will produce the greatest academic gains for these students.

Summary

The Clark County School District will increase full-day kindergarten programming during the 2004-2005 school year. Fifty-four schools in the CCSD will operate full-day programs. Thirty-five schools will use Title I monies to provide this programming for all students at no charge (Richmond, 2004). The remaining 19 schools will offer full-day kindergarten to parents at a cost of $300 per month. Parents still may select only the half-day program at no cost. The CCSD officials feel full-day kindergarten is worthwhile and beneficial to all students. Despite lack of funding from the state legislature during the last session officials remain dedicated to implementing full-day kindergarten and will begin the tuition supported programs as a pilot study ("Fully Fund," 2004). The implementation and data collection at these sites will be integral in identifying the outcome of full-day kindergarten in the CCSD as well as other urban areas nationwide. As the sixth largest school district in the nation, the CCSD will have the opportunity to set future trends regarding kindergarten programming based on research and practical experience.

Much of the current research on the topic of full-day kindergarten versus half-day kindergarten favors full-day programs in relation to academic achievement and behavior outcomes (Clark & Kirk, 2000). However, not all studies determine the significance of full-day programming. Gullo (1990) highlights the potential outcomes of full-day

kindergarten, but also cautions that the length of the day may not be as important as the teaching and learning that occurs during the day. When the time in school is increased, the academic model must also be changed to take appropriate advantage of the change (Weast, 2001). Full-days can be used equally as an intervention for students at risk for school failure or to enhance the learning for those children who come to school with greater readiness skills that will develop their learning on a more advanced level (Schubert, 1997).

New legal changes at all levels, including NCLB, have placed stronger academic requirements on schools and children and programming changes are necessary to meet those challenges (Natale, 2001). An important consideration is the class-size. Without question, when class sizes are smaller, distractions are limited and teachers are more able to provide one-on-one instruction regardless of the length of the day (Nelson, 2000). Young children have the greatest benefit when they are instructed in small groups or individually (International Reading Association & the National Association for the Education of Young Children, 1998).

Determination of which program produces the greatest benefit for children will be difficult to ascertain. Actual effectiveness of a program may rely on instructional methods, teacher philosophy, teacher training, curriculum, and class size (Elicker & Mathur, 1997). Quantity of time does not necessarily equate with quality of program. Full-day kindergarten does appear to facilitate greater achievement in the literacy development of children but

concrete conclusions can not yet be established (Fusaro, 1997). Until further studies are conducted examining the many variables and outcomes of kindergarten, the ascertaining of the length of day that produces the greatest student achievement will be difficult (Hatcher & Schmidt, 1980). However, full-day kindergarten continues to gain momentum and popularity for a variety reasons despite the lack of concise and consistent research based evidence.

APPENDIX A

POVERTY GUIDELINES

Table A

2002 Health and Human Services Poverty Guidelines

Family Size	48 Contiguous States and D.C.	Alaska	Hawaii
1	$8,860	$11,080	$10,200
2	$11,940	$14,930	$13,740
3	$15,020	$18,780	$17,280
4	$18,100	$22,630	$20,820
5	$21,180	$26,480	$24,360
6	$24,260	$30,330	$27,900
7	$27,340	$34,180	$31,440
8	$30,420	$38,030	$34,980
For each additional person, add	$3,080	$3,850	$3,540

Note. Adapted from United States Department of Health and Human Services. (2002). The 2002 hhs poverty guidelines: One version of the [U. S.] federal poverty measure. Retrieved, March 3, 2004, from http://aspe.os.dhhs.gov/poverty/02poverty.htm

APPENDIX B

STATISTICAL FORMULAE

The Kuder-Richardson formula 21 (KR-21) was used to determine the estimate of reliability for the SBAP (Gay, 1996). The formula is as follows:

$$r_{\text{total test}} = \frac{(K)(SD^2) - \overline{X}(K - \overline{X})}{(SD^2)(K - 1)}$$

where K = the number of items in the test

SD = the standard deviation of the scores

X = the mean of the scores

Suggested values used for KR-21 calculation were provided by the Clark County School District Testing and Evaluation Department. The KR-21 reliability for the SBAP was calculated to be $r = .96$.

The standard error of measurement was also calculated as another form of reliability estimation. The formula is as follows:

$$SEm = SD\sqrt{1 - r}$$

Where SEm = standard error of measurement

SD = standard deviation of the test scores

r = the reliability coefficient

The standard error of measurement for the SBAP was calculated as $SEm = 3.68$.

APPENDIX C

HUMAN SUBJECTS APPROVAL

UNLV

UNIVERSITY OF NEVADA, LAS VEGAS

Expedited Review of Social/Behavioral Protocol
Approval Notice

DATE: May 21, 2003

TO: Stefanie Kujaczynski
Special Education

FROM: Dr. Paul Jones, Expedited Reviewer
UNLV Social/Behavioral Sciences IRB

RE: Status of Human Subject Protocol Entitled: *The Impact of Full-day and Half-day Kindergarten on the Language Arts Achievement Scores of First Grade Students*

OPRS# : 305S50503 -144
Approval Date: May 20, 2003

This memorandum is official notification that protocol for the project referenced above has met the criteria for exemption from full committee review by the UNLV Social/Behavioral Sciences Institutional Review Board (IRB) as indicated in regulatory statues 45CFR 46.101. The protocol has been submitted through the expedited review process and has been **approved**. The protocol is approved for a period of **one year** from the date of this notification. Work on the project may proceed.

Should the use of human subjects described in this protocol continue beyond **May 20, 2004** it would be necessary to **request an extension 30 days before the expiration date. Should there be any change(s) to the protocol, it will be necessary to request such change in writing through the Office for the Protection of Research Subjects.**

If you have any questions or require assistance, please contact the Office for the Protection of Research Subjects at 895-2794.

cc: OPRS File

APPENDIX D

CLARK COUNTY SCHOOL DISTRICT APPROVAL

AN AFFIRMATIVE ACTION
EQUAL OPPORTUNITY EMPLOYER

CLARK COUNTY SCHOOL DISTRICT

2832 EAST FLAMINGO ROAD LAS VEGAS, NEVADA 89121 TELEPHONE (702) 799-5011

August 27, 2003

Stefanie M. Kujaczynski
3204 Beamery Court
N. Las Vegas, NV 89032

Dear Ms. Kujaczynski:

The Clark County School District Committee to Review Cooperative Research Requests reviewed your proposal entitled: The Impact of Full-day and Half-day Kindergarten on the Language Arts Achievement Scores of First Grade Students. The committee is pleased to inform you that your proposal has been approved.

Please provide a copy of your research findings to this office upon completion. We look forward to the results. If you have any questions or require assistance please do not hesitate to contact Cheryl King at 799-5195 or e-mail at cherylk@interact.ccsd.net.

Sincerely,

Karlene McCormick-Lee

Karlene McCormick-Lee, Ed.D.
Assistant Superintendent
Research, Accountability, & Innovation Division
and
Committee to Review Cooperative Research Requests

KML/clk

C: Andre Denson
Roger Gonzalez
Craig Kadlub
Michael Robison
Eva White
Christy Falba
Carol Lark
Kelly Sturdy
Elena Villa
Marie Wakefield

APPENDIX E

PRINCIPAL CONTACT LETTER

Principal Contact Letter

Dear _____:

I am a CCSD teacher and a doctoral student in the Department of Special Education. This project is the focus of my dissertation.

The CCSD superintendent recently addressed the school board and proposed full-day every day kindergarten for all students. The state of Nevada is ranked 45th in the nation for per pupil expenditures and continues to experience financial restrictions despite a continuous six to seven percent growth in students since 1983. A district of this size offering this type of programming for all kindergarten students would have to commit to a sizable financial investment. Full-day kindergarten for all students would require hiring twice the current number of teachers in that grade level, doubling the amount of space and materials, as well as a reexamination of current daily schedules, curriculum, and availability of classes such as art, music, and physical education. CCSD schools which have offered full-day kindergarten for one or more years have collected the standard data from district mandated tests, however, no one has attempted to do any comparative analysis of full-day and half-day programs within the district.

Since schools in the CCSD have begun providing full-day kindergarten, no study has been conducted comparing the

outcomes of full-day and half-day kindergarten. Title I schools are annually allowed to change their programming based on administrative and faculty input, as well as financial considerations. To this point input has relied heavily on the opinions of first grade teachers and their observations of first grade readiness as demonstrated by the children from the two different kindergarten programs. Test scores have had slight increases but to what extent full-day kindergarten has influenced those scores is unknown. As more schools make the commitment to change to full-day programming and as the Nevada Legislature considers future funding for this programming it is imperative that an analysis of data be conducted to determine the effectiveness of full-day programs as measured by student achievement.

The primary purpose of this study is to examine the relationship between kindergarten program enrollment and the language arts achievement scores as measured by the Standards-Based Assessment Program (SBAP) at the completion of first grade. A secondary purpose will be to determine if there is a correlation between at-risk boys and at-risk girls enrolled in half-day and full-day kindergarten as demonstrated by their language arts achievement scores. As the CCSD examines the best kindergarten schedule for students it has highlighted a need for analysis of current data in relation to student achievement.

This is a quantitative study designed to examine the effect of full-day and half-day kindergarten programs on first grade language arts achievement test scores for at-risk students. Gender differences in performance between and within the program types will also be investigated. Student

gender will be the primary variable to determine the significance of the relationship of language arts achievement and half-day or full-day kindergarten enrollment. The criterion variable for this study is language arts achievement as measured by the Standards-Based Assessment Program (SBAP) developed by Clark County School District.

Archived data will be collected from the CCSD Standards-Based Assessment Program (SBAP) in the subjects of reading and Language Arts taken from the 2001-2002 school year. Individual scores for students will be collected on the language arts portion of the SBAP based on the previously mentioned criteria at each school site. Mean scores will then be recalculated for each selected school site in overall language arts total score, in each of the five individual areas of the language arts categories, and for each test item. Data reduction for the study will be provided using Analysis of Variance to determine if there are any significant differences between mean scores of the samples in each specific area. These areas are to include word knowledge, reading comprehension strategies, reading comprehension literature, reading comprehension information texts, and writing mechanics. The level of significance for each test statistic will be .05.

Attendance records from each school site will be needed to cross reference student names to test scores only. Once the actual test scores are obtained the student name will simply become male or female designated enrolled at school a, b, c, or d. Names will be deleted from records once scores have been obtained, retaining only gender designation. The records without names will be kept in a locked filing cabinet

in the Special Education Department at UNLV for three years after the study is completed and then shredded after the expired time limit.

The findings of this study will allow these four schools to see results of kindergarten scheduling. They will then have information to make decisions based on the findings as to which kindergarten schedule produces the greatest results. The findings will also pave the way for further examination of methodology, philosophy, and curriculum. On a state and federal level, these findings will add to the small body of literature that already exists and assist districts and legislative bodies to make better decisions regarding kindergarten scheduling. Students will directly benefit when those in power have suitable information to create programs that are most appropriate for their needs and assist them in achieving greater academic outcomes.

If you decide to participate I will need attendance records for kindergarten 2000-2001 and first grade records for 2001-2002. I will then need individual SBAP scores for first grade students in 2001-2002. Once the data is collected and the final copy is accepted by UNLV, your school will receive an onsite presentation by myself outlining the findings of this project. Your school name or the name of any child will not appear in the study. Schools will simply be referred to as A, B, C, or D, and students will have gender designations only. The four school sites I have selected are similar in demographics but each of you will have your confidentiality protected to the fullest extent.

I look forward to working with you and your school. I feel this is a very useful and timely topic and all parties involved will surely benefit. Please feel free to contact me via e-mail or in the evenings at home if you have any further questions or concerns.

Sincerely,

Stefanie Kujaczynski

For further information about this study, please contact:

Dr. Jeff Gelfer
Department of Special Education
University of Nevada, Las Vegas
Las Vegas, NV 89154
(702) 895-3205

For information of Rights of Research Subjects, please contact:

Office of Sponsored Programs (702) 895-1357

For information about Clark County School District Authorization, please contact:

Cheryl King (702) 799-5195

APPENDIX F

PRINCIPAL CONSENT FORM

Principal Consent Form

To: Cheryl King Department of Testing and Evaluation

From:_____

School:_____

Please check and initial the following:

_____ I herby authorize Stefanie Kujaczynski to collect attendance and SBAP data from archived records at my school for the purpose of conducting research for UNLV. Further, I understand all identifying information will be provided for the purpose of data collection but will be removed when the results are reported.

_____ I do not wish for my school to participate in the study described at this time.

Principal Signature_____ Date_____

REFERENCES

Adler, M. A. & Fisher, C. W. (2001). Early reading programs in high-poverty schools: A case study of beating the odds. *The Reading Teacher, 54*(6), 616-619.

Bosterman, N. (1997). *Inventing kindergarten.* New York: Harry N. Abrams, Inc., Publishers.

Bryant, D. M. & Clifford, R. M. (1992). 150 years of kindergarten: How far have we come? *Early Childhood Research Quarterly, 7*(2), 147-154.

Carmichael, P. H. (1997). Who receives federal title I assistance? Examination of program funding by school poverty rate in new york state. *Educational Evaluation and Policy Analysis, 19*(4), 354-359.

Clark County School District. (2002). *Grade 4 norm-referenced test results 2001-2001.* Las Vegas, NV: Testing and Evaluation Department.

Clark County School District (2001). Standards-Based Assessment Program (SBAP). Las Vegas, NV: Department of Testing and Evaluation.

Clark, P. (2001). *Recent research on all-day kindergarten.* Champaign, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED453982)

Clark, P. & Kirk, E. (2000). All-day kindergarten: Review of research. *Childhood Education, 76*(4), 228-231.

Cotton, K. & Conklin, N. F. (n.d.). Research on early childhood education. Retrieved November 13, 1998, from http://www.nwrel,org/scpd/sirs/3/topsyn3.html

Crawford, P. A. (1995). Early literacy: Emerging perspectives. *Journal of Research in Childhood Education, 10*(1), 71-86.

Cryan, J. R., Sheehan, R., Wiechel, J., & Bandy-Hedden, I. G. (1992). Success outcomes of full-day kindergarten: More positive behavior and increased achievement in the years after. *Early Childhood Research Quarterly, 7*(2), 187-203.

Cuban, L. (1992). Why some reforms last: The case of the kindergarten. *American Journal of Education, 100*(2), 166-194.

Damian, B. (1997). Full-day kindergarten perspective. *Early Childhood Research Quarterly, 12*(4), 485-486.

Decker, C. A. & Decker, J. R. (1997). *Planning and administering early childhood programs (6th ed.).* New Jersey: Prentice-Hall, Inc.

Dickinson, D. K. & McCabe, A. (2001). Bringing it all together: The multiple origins, skills, and environmental supports of early literacy. *Learning Disabilities Research and Practice, 16*(4), 186-202.

Egertson, H. A. (1987). The shifting kindergarten curriculum. Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED293630)

Elementary and Secondary Act (ESEA) of 1965, Pub. L. No. 89-10, 20 U.S.C.

Elicker, J., & Mathur, S. (1997). What do they do all day? Comprehensive evaluation of a full-day kindergarten. *Early Childhood Research Quarterly, 12*(4), 459-480.

Evans, E. D. & Marken, D. (1983, April). *Longitudinal follow-up comparison of conventional and extended-day public school kindergarten programs.* Paper presented at the annual conference of the American Educational Research Association, New Orleans.

Fromberg, D. P. (1992). Implementing the full-day kindergarten. *Principal, 71*(5), 26-28.

Fully fund full-day kindergarten. (2004, March 8). *Las Vegas Sun,* p. 10A.

Gay, L. R. (1996). *Educational research: Competencies for analysis and application* (5th ed.). New Jersey: Prentice-Hall, Inc.

Greer-Smith, S. (1990). *The effect of a full-day kindergarten on the student's academic performance.* Unpublished master's thesis, Dominican University, San Rafael, CA.

Guinn, K. C. (2003, January 20). State of the state address. Retrieved March 4, 2003, from http://gov.state.nv.us/sos2003.htm

Gullo, D. F. (1990). The changing family context: Implications for the development of all-day kindergarten. *Young Children, 45*(4), 35-39.

Gullo, D. F., & Maxwell, C. B. (1997). The effects of different models of all-day kindergarten on children's developmental competence. *Early Childhood Development and Care, 139,* 119-128.

Harrison-McEachern, R. (1989). *Half-day kindergarten versus all-day kindergarten and it's effect on first grade reading achievement.* Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED313684)

Hatcher, B. & Schmidt, V. (1980). Half-day vs. full-day kindergarten programs. *Childhood Education, 57,* 14-17.

Hofferth, S. L. (1987). Implications of family trends for children: A research perspective. *Educational Leadership, 44*(5), 78-84.

Hoffman, A. R. & Daniels, S. J. (1986). *Reading and reading readiness instruction: A comparison of all-day and half-day kindergarten practices.* Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED271226)

Holmes, C. T., & McConnell, B. M. (1990, April). *Full-day versus half-day kindergarten: An experimental study.* Paper presented at the annual conference of the American Educational Research Association, Boston.

Hough, D., & Bryde, S. (1996, April). *The effects of full-day kindergarten on student achievement and affect.* Paper presented at the annual conference of the American Educational Research Association, New York.

Housden, T., & Kam, R. (1992). *Full-day kindergarten: A summary of the research.* Carmichael, CA: San Juan Unified school District.

Humphrey, J. W. (1983). A comparison of full-day and half-day kindergartens. *Spectrum, 1*(2), 11-16.

International Reading Association & the National Association for the Education of Young Children (1998). Learning to read and write: Developmentally appropriate practices for young children. *Reading Teacher, 52*(2), 193-216.

Karweit, N. (1992). The kindergarten experience. *Educational Leadership, 49*(6), 82-86.

Kelly, K. (1999, May). Preserving kindergarten in a high-stakes environment. Retrieved July 23, 2002, from http://www.edletter.org/past/issues/1999-mj/kindergarten.shtml

Koopmans, M. (1991). *A study of the longitudinal effects of all-day kindergarten attendance on achievement.* Newark, NJ: Newark Board of Education.

McConnell, B. B. & Tesch, S. (1986). Effectiveness of kindergarten scheduling. *Educational Leadership, 44*(3), 48-55.

McGill-Franzen, A. (1992). Early literacy: What does "developmentally appropriate" mean? *The Reading Teacher, 46*(1), 56-58.

McGraw-Hill (1997). Form A TerraNova comprehensive Tests of Basic Skills (5th ed.). City, ST: CTB/McGraw-Hill.

Minor, J. L. (2001). The relationship between full-day and half-day kindergarten on the reading and mathematic scores of first grade students. (UMI No. 3014266).

Mongiardo, K. (1988). *Half-day kindergarten versus extended-day kindergarten and it's effect on first grade reading achievement.* Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED292079)

Morrison, G. S. (1998). *Early childhood education today (7th ed.)*. New Jersey: Prentice-Hall, Inc.

Natale, J. A. (2001). Early learners: Are full-day kindergarten academic kindergartens too much, too soon? *American School Board Journal 188*(3), 22-25.

National Center for Education Statistics. (2001, May). Ages for compulsory school attendance, special education services for students, policies for year-round schools and kindergarten programs, by state: 1997 and 2000. Retrieved March 5, 2003, from http://nces.ed.gov/pubs 2002/digest2001/tables/dt151.asp

Nelson, R. F. (2000). Which is the best kindergarten? *Principal, 79*(5), 38-41.

Nevada Association of School Boards and the Nevada Association of School Superintendents. (2002, October). *Investing in Nevada's education, students, and teachers: A funding and accountability proposal*. Retrieved October 10, 2003, from http://www.ccsd.netimages/iNVest

No Child Left Behind Act (NCLB) of 2001, Pub. L. No. 107-110, 20 U.S.C. § 1111-1120 *et seq*. Formerly titled the Elementary and Secondary Education Act originally enacted as Public 89-10 (1965).

Nunnelley, J. (1996). *The impact of half-day kindergarten programs on student outcomes: A pilot project*. Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED396857)

Puleo, V. T. (1988). A review and critique of research on full-day kindergarten. *Elementary School Journal, 8*(4), 427-439.

Puleo, V. T. (1986). Current research perspectives on full-day kindergarten. *Spectrum, 4*(4), 32-38

Richmond, E. (2004, March 16). Poor schools receive additional $9.5 million in federal aid. *Las VEgas Sun,* pp.1A, 4A.

Rimm-Kaufman, S. E., Pianta, R. C., & Cox, M. J. (2000). Teachers' judgments of problems in the transition to kindergarten. *Early Childhood Research Quarterly, 15*(2), 147-166.

Robertson, L. F. (1984). Why we went back to half days. *Principal, 64,* 22-24.

Ross, E. D. (1976). *The kindergarten crusade: the establishment of preschool education in the United States.* Athens, Ohio: Ohio University Press.

Rothenberg, D. (1995). *Full-day kindergarten programs.* Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED382410)

Schubert, E. (1997). Half-day kindergarten perspective. *Early Childhood Research Quarterly, 12*(4), 481-483.

Senechal, M., LeFevre, J. A., Smith-Chant, B. L., & Colton, K. V. (2001). On refining theoretical models of emergent literacy: The role of empirical evidence. *Journal of School Psychology, 39*(5), 439-460.

Shapiro, M. S. (1983). *Child's garden: The kindergarten movement from Froebel to Dewey.* University Park and London: The Pennsylvania State University Press.

Shellard, E. (2001). Critical issues in developing a high-quality reading program. *ERS Spectrum 19*(4), 4-11.

Shepard, L. A. & Smith, M. L. (1988). Escalating academic demand in kindergarten: Counterproductive policies. *The Elementary School Journal, 89*(2), 135-145.

Slavin, R. E., Karweit, N., & Wasik, B. A. (1992). Preventing early school failure: What works? *Educational Leadership, 50*(4), 10-18.

Spring, J. (2001). *The American school 1642-2000 (5th ed.).* New York: McGraw-Hill.

Strickland, D. S. (1990). Emergent literacy: How young children learn to read. *Educational Leadership, 47*(6), 18-23.

Taksel, G. F. (2001, March 02). *Facts & Figures 2000-2001.* Retrieved October 10, 2003 from http://www.ccsd.net/news/index.phtml

United States Department of Education (USDOE). (1992, June). *National assessment of the Chapter 1 program: The interim report.* Washington, DC: Author.

United States Department of Health and Human Services. (2002). The 2002 hhs poverty guidelines: One version of the [U. S.] federal poverty measure. Retrieved, March 3, 2004, from http://aspe.os.dhhs.gov/poverty/02poverty.htm

United States General Accounting Office. (2002, January). Title I funding: Poor children benefit through funding per poor child differs (Publication No. GAO-02-242). Retrieved February 8, 2003, from http://www.gao.gov/new.items/d02242.pdf

Vacca, J. L., Vacca, R. T., & Gove, M. K. (1991). *Reading and learning to read (2nd ed.).* New York: HaperCollins Publishers Inc.

Wang, Y. L. & Johnstone, W. G. (1999). Evaluation of a full-day kindergarten program. *Spectrum, 17*(2), 27-32.

Weast, J. D. (2001). Why we need rigorous, full-day kindergarten. *Principal, 80*(5), 6-9.

Whaley, S. (2003, January 21). State budget proposal: New spending in mix but most money pays for growth in existing programs. *Las Vegas Review-Journal*. Retrieved April 28, 2003, from http://www.reviewjournal.com/lvrj_home/2003/Jan-21-Tue-2003/new...

VITA

Graduate College
University of Nevada, Las Vegas

Stefanie Kujaczynski

Home Address:
3204 Beamery Court
North Las Vegas, Nevada 89032

Degrees:
Bachelor of Science, Elementary Education, 1994
University of Nevada, Las Vegas

Master of Education, Special Education, 1998
University of Nevada, Las Vegas

Dissertation Title: The Impact of Full-day and Half-day Kindergarten on the Language Arts Achievement of First Grade Students

Dissertation Examination Committee:
Chairperson, Dr. Jeff Gelfer, Ph.D.
Committee Member, Dr. Kyle Higgins, Ph.D.
Committee Member, Dr. John Filler, Ph.D.
Graduate Faculty representative, Dr. Paul Johns, Ed.D.