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A COMPARISON OF THE EFFECTS OF FULL DAY VERSUS
HALF DAY KINDERGARTEN PROGRAMS

by
Deborah C. Gaw

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree in the Graduate
Division of Rowan University
Spring, 1998

Approved by

Date Approved April 20, 1998

Abstract

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A Comparison of the Effects of Full Day versus
Half Day Kindergarten Programs

1998

Dr. Stanley Urban
Learning Disabilities

The purpose of this study was to determine if the children in full day kindergarten programs made greater gains when compared to half day kindergarten programs as measured by an informal teacher made kindergarten screening test.

The subjects of this study were 81 kindergarten students (40 girls, 41 boys) from two elementary schools in southern New Jersey. Thirty-nine (39) students were enrolled in the full day program, and 42 were enrolled in the half day program. Both groups were pretested with a teacher made kindergarten screening test in the beginning of the school year (September/October) and then post tested in the middle of the school year (January/February). Individual scores were calculated as percentage of items correct and then recorded as group averages. A comparison was made between the two groups to determine the difference of gains made in each program.

Results indicate that both programs made gains in all categories of the test. Compared to the half day program, the full day program made greater gains in visual motor skills, and the half day program made greater gains in visual discrimination skills when compared to the full day program. When comparing the average scores of the entire test, there was no significant difference between the two programs.

The findings of this study indicate no meaningful difference in the gains made by the children enrolled in the two programs. Both programs made positive gains in all areas assessed with no regression on any of the variables.

Mini-Abstract

Deborah C. Gaw
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Table of Contents

	Page
I. Acknowledgements	
II. Abstract	
III. Mini-abstract	
IV. Chapter I - Statement of the Problem	1
Background	1
Research Question	1
Need for the Study	2
Value of the Study	3
Limitations	3
Overview	4
V. Chapter II - Review of the Literature	5
Overview	5
Testimonial Evidence	7
Supportive Research	11
Non-supportive or Inconclusive Studies	14
Summary	17
VI. Chapter III - Methodology and Procedures	19
Population	19
Method of Sample Selection	19
Instrumentation and Scoring	21
Collection and Analysis of Data	21

Table of Contents (cont.)

	Page
VII. Chapter IV - Analysis of Results	23
VIII. Chapter V - Summary and Discussion	28
Summary	28
Discussion	29
IX. Appendix - Kindergarten Screening Test	31
X. References	35

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Chapter I

Statement of the Problem

Background

The first kindergarten established by Friedrich Froebel in Germany in 1837 was two hours in length and took place in the afternoon. Length of day was not a consideration at this time. The first formal kindergarten in America was private and established in Wisconsin in 1855. In 1873, in St. Louis, Missouri, the first official public school kindergarten in the United States was inaugurated (Holmes & McConnell, 1990). All of these programs followed the one-half day model. Full day programs began to emerge in the 1960's and the 1970's, and recently, more and more full day programs are being implemented nationally. With the increase of two working parents, full day kindergartens are becoming more popular. Most families consist of mothers working outside the home, and children need an extended child-care program at a younger age. Full day kindergarten seems to offer an alternative to day care facilities.

One of the purposes of kindergarten is to prepare children for first grade. According to many experts, it is at the age of five and six in a child's life when the brain is most receptive to learning and establishes the foundation for later learning, as well as developing a positive attitude toward learning.

Research Question

The data obtained will be used to answer the following research

question: Do kindergarten children make greater gains in a full day program when compared to children enrolled in a half day program as measured by an informal teacher made kindergarten screening test?

Need for the Study

The benefits of a full day kindergarten has been a controversial issue for years. Debates continue as to whether this step should be taken and should be mandatory in all states. Kindergarten is not mandatory in many states and most states do not offer full day programs; therefore, children enter kindergarten with a wide diversity in background. It would be ideal for children to be at similar levels of readiness in first grade, but currently, this is not the case.

The question remains unresolved as to whether children enrolled in full day programs show more growth in critical skills than children enrolled in half day kindergarten programs. Proponents feel full-day programs give children more opportunity for social and academic growth, provide a more relaxed pace for learning, develop a more positive attitude toward learning in children, allow teachers to meet individual needs of the children, and provide more adequate preparation for first grade.

Opponents feel there has not been enough research to support the stated advantages of the full day program. Some feel it is not the length of day that matters, it is how the time is used, quality of time, not quantity. The transition from home to a full day school program and how it affects the child is also a factor. There is a concern among some parents who feel a full-day program will replace home nurturing and parent involvement with their children. Lastly, among others, school boards are concerned about the cost of full day programs.

It is evident when considering all factors discussed , that there is a legitimate need for further study in the evaluation of full day kindergarten programs versus half day kindergarten programs.

Value of the Study

Continued research in this area will address many of these concerns. If substantial growth is shown in a full day program, then the community in which this study took place may wish to consider mandating the program. If no growth is shown in this sample, then districts may want to reconsider the purpose for implementing these programs, and the justification used for expending funds on these programs.

In addition, this study will contribute to the body of data which is attempting to determine if a full day kindergarten program is beneficial. Data gathered will address the general issues currently being debated: whether the full day program is worth the time, resource allocation, and whether it better prepares a child for first grade and their life-long education.

Limitations

Limitations must be noted when considering the results of this study. One must be cautious when generalizing the results, considering the make-up of the sample studied and the demographics of the community in which the study took place. Teacher experience and the individuals that administered the test used should be considered, since these factors are not uniform. One must also take into account the content of the specific program being evaluated.

Finally, the researcher did not have the opportunity to select the instrument being used to evaluate the progress made by the children in the half day versus the full day program; therefore, issues of appropriateness, reliability

and validity of the measurement instrument pose threats to the conclusions drawn in this study. In addition, the time between the pre and post test given for the purpose of this study was approximately three months. This only shows growth over that time period, not over an entire school-year's length.

Overview

A review of the literature is presented in Chapter II, and the methodology and research strategy is contained in Chapter III. Included in this chapter is a description of the sample, instrumentation, and method of data analysis. The data is analyzed and research findings are interpreted in Chapter IV. A summary and discussion of the research findings are included in Chapter V.

Chapter II

Review of the Literature

Overview

There continues to be controversy as to whether students should attend a full day or half day kindergarten program. One useful perspective in examining this issue is to determine the purpose of kindergarten in order to determine the length of day. Ogens (1990) states three purposes of kindergarten: (1) to meet the needs of a five-year old which includes the diverse abilities, developmental levels, learning styles, and interests of each child; (2) to lay the foundation for a child's life-long education; and (3) to help the child medically, nutritionally, and psychologically. Kindergarten should not just focus on academics, all three purposes should be addressed in the program. Ogens feels a full day program will address these purposes in a stimulating, non-stressful, educational environment. Providing parents a choice of whether to enroll their child in a full day or half day program, according to Ogens, will meet the needs of today's society. In addition, special education and remedial instruction will be reduced.

Cruikshank (1986 a & b) concurs with Ogens' (1990) opinion and feels three areas of a child's development needs to be addressed in a kindergarten program, regardless length of day. Cognitive, social/emotional, and psychomotor development all need to be considered and balanced for kindergarten students. Motivation and skills for success must be developmentally

appropriate, not provided through a watered down first grade curricula. In addition, consideration must be given so that kindergartners develop at different rates, and they learn best from concrete, hands-on experiences. According to Cruikshank, creating a full day program must be done considering many factors. These factors include: busing, lunch, rest periods, provisions for children who cannot handle a full day, aides, participation in school programs (music, gym, assemblies, etc.), and parental involvement (Cruikshank, 1986a). How the additional time is used is also a critical factor in the development a full day program (Cruikshank, 1986b). Increased oral and written language activities, increased use of integrative projects, use of learning centers, and increased individualized instruction are suggested by Cruikshank on how to use this additional time. Cruikshank feels if a full day kindergarten is carefully planned to be developmentally appropriate for a five-year old, it can leave a positive impact on the child's life-long education.

Gullo (1990) is another proponent of a full day kindergarten program, if it is developmentally appropriate. Gullo elaborates on the advantages of a full day program. One, it meets the societal needs of working parents. It also lessens the workload of teachers, having approximately 25 students all day, as opposed to two groups of 25 students in a half day program. A teacher is able to identify the individual needs of the children more easily, and it lessens the pressure to complete the curriculum. The full day program can also alleviate the pressure on the children to succeed early.

Karweit (1992) agrees with Cruikshank and Ogens in that a kindergarten program must be developmentally appropriate; however, she disagrees that the length of day will provide this better than a half day program. Karweit feels that

too much focus is on the amount and scheduling of time, as opposed to the curriculum. According to Karweit, research does not provide strong evidence that a full day program provides the most developmentally appropriate education for all kindergarten children. She feels that more focus must be put on the curriculum, not length of day, and “quality” of time matters, not “quantity”.

Literature relating to the effectiveness of full day kindergarten programs versus half day kindergarten programs can be organized from several perspectives. This review will divide the literature according to opinions of the full day kindergarten program, supportive research of the full day program, and non-supportive and inconclusive research of the full-day kindergarten program.

Testimonial Evidence

Even though expert opinions are not standardized data, they are critical in the education field. Parent, teacher, and administrative input can be very useful when making decisions about a child’s education. Several studies have included parent and teacher surveys regarding their feelings toward the full day kindergarten program. Of the studies reviewed, parent attitudes towards the full day kindergarten program generally are positive, especially of those whose children have participated in the program. Anderson (1983) conducted research on full day kindergarten programs in the Huntington Beach City School District in southern California, comparing it to half day programs. Parent attitudes were surveyed through a questionnaire during this study. Parents of the full day program felt more change occurred in their child than the parents whose children attended the half day program. Parents of the full day kindergarten program felt the full day program provided more rigorous academics, encouraged greater social development, self-esteem, responsibility,

and greater reinforcement of skills taught, and it provided a better foundation and transition for their child's future education in comparison to the half day kindergarten program. In addition, they felt the full day kindergarten program met the needs of working parents, it decreased the boredom their child may have if at home for a half day, and their child was able to walk to and from school with other children in other grades. Parents in favor of the half day program felt that five-year olds were not ready for a full day program, as opposed to full day parents who felt their children were ready. Half day parents felt a full day program would not benefit their children because more home-nurturing was needed, fatigue would result, transition needs to occur gradually, and children benefit from some unstructured time at home.

Teachers were also asked their opinion in Anderson's (1983) study. Teachers of the full day program believed the extended day was in best interests of the children, and the program provided a better foundation for the preparation of first grade than the half day program. The half day teachers felt that some additional time may be advantageous for kindergartners; however, a full day may be too long.

A longitudinal study was conducted by the Evansville-Vanderburgh School Corporation starting in 1978 (ERIC, 1988). This study evaluated the consequences of full day kindergarten programs of four schools from kindergarten through eighth grade. The experimental group was all kindergarten students who attended a full day program in four pilot schools. The control group was selected by using a random sample of half day kindergartens from four schools of similar socioeconomic areas of the experimental group. Data were collected from standardized tests, report cards,

school records, questionnaires, and interviews.

Opinionnaires were created to obtain the opinions of teachers who taught in the full day program to determine its disadvantages and advantages. Full day teachers felt advantages included receiving a good lunch, more time for instruction in art, music, physical education, reinforcement of skills, individual instruction, adult-student interaction, participation in school programs, and the opportunity for children to come to and from school with an older brother or sister. Full day teachers found disadvantages in the large class size and increased work load.

Primary teachers in grades 1-3 also completed a opinionnaire. In 12 of the 16 statements, the primary teachers indicated that the full-day program was superior compared to the half day program. There was highest agreement in the areas that full day programs had more time to develop basic listening and language skills, that students were not bored, and that students were exposed to more skills. Least agreement was indicated in that the full day program developed better socialization, difference in ability, and full day kindergartners were more excited about coming to school.

Parents of children attending a full day and half day kindergarten programs were interviewed through the use of a structured questionnaire. A greater number of full day kindergarten parents indicated their child made greater gains in cognitive, psychomotor, affective, and linguistic growth compared to responses of parents whose children attended half days. If the parent had a choice of programs, 91.6% full-day kindergarten parents would choose full-day and 52.9% half day parents would choose full day. Eighty-nine percent full day parents were pleased with the program, and 16% of them felt a

smaller class size would have enhanced their child's kindergarten experience. Thirty-nine percent of the half day parents were pleased with the half day program, and 16% of them felt a longer day would have enriched their child's experience in kindergarten more. Most parents of children in a full day program were positive about the program and indicated the same opinion in later years.

Greer-Smith (1990) conducted a study to determine the effects of a full day on kindergarten students' performance. Conclusions were determined through a questionnaire filled out by half day and full day teachers. Concerns regarding the full day program by half day teachers were reported as: students leaving school tired, added academic pressures, and transition from home. Most of the teachers agreed that a half day program provides quality time to provide a positive attitude in the children toward education.

Full day teachers felt the full day program met the day-care needs of working parents, have more enrichment activities and experiences, and more individualized instruction for the students. There was agreement between the full day and half day teachers in that a negative effect may have occurred in children participating in the full day program, though the effects were not specified.

Hough and Bryde (1996) recently reported a study to determine if a full day program was beneficial or detrimental to students compared to a half day programs. Research began in October of 1994 and was concluded in June of 1995 using six pilot schools. Data was collected through means of observations, questionnaires, norm-referenced and criterion-referenced tests, as well as surveys. Results indicated that all parents were satisfied with the program. Full day parents were more satisfied and believe the full day program

increased their child's success in first grade. Another significant difference was found in that full day parents felt that full day teachers provided more suggestions and advice to help their children at home. Both parents and teachers felt that the full day program allowed children more time to learn under less stressful circumstances.

Supportive Research

The Wichita Public Schools in Kansas established full day programs in five schools during the 1988-89 school year (ERIC, #ED 317 603, 1989). They evaluated these programs through scores on the Iowa Tests of Basic Skills (ITBS), a motor skills test, attendance, mobility, attendance, special education placement, surveys of teachers, administrators, and parents, and observations. Results of the opinionnaires indicated that teachers, administrators, and parents support the full day kindergarten program. The ITBS was given to both groups in the spring of 1989. These scores indicate no statistical differences in the areas of listening, vocabulary, or language. Statistical differences were found in favor of the full day program in word analysis, math, and the composite score. Motor skill testing, attendance, and mobility data showed no significant differences between the groups.

During the 1982-83 school year, the Huntington Beach City School District in southern California offered an experimental full day instructional kindergarten program. Anderson (1983) conducted research on this program comparing it to half day programs in two other district schools. Two full day programs were evaluated. The make-up of the students in one of the full day programs was of more mature students identified by scores on developmental tests. The other full day program consisted of randomly chosen students at

least five years of age. The comparison group was chosen to closely match the full day students in age, socioeconomic status, entry-level scores on the Kindergarten Skills Assessment, and boy/girl ratio. The classroom characteristics were also identified in this study. The full day program did not have paid aides, as opposed to the half day programs, which had paid aides part of the day. All programs recruited parent volunteers. Half day programs used two teachers sharing the teaching responsibilities at least part of the day. Anderson does not note whether or not the full day programs used more than one teacher. All, but one full day program, was implemented in large double-sized rooms. Results of the study show that more time was scheduled in the full day program for reading, mathematics, science, social studies, music, and art than the comparison group. Observations evaluated student engaged learning time. The engaged learning time in reading/language was two and one-half times greater and fifty percent greater in mathematics when compared to the half day program. The Stanford Early Achievement Test was used at the end of the year to compare academic achievement. The results revealed that children in the full day program scored significantly better on the average in terms of their skills, knowledge, and understanding in reading, mathematics, social studies, and science. No significant differences were found between the two groups in the amount of time spent for psychomotor activities, time spent in fine arts activities, and the providing of a healthy psychological environment.

The longitudinal study conducted by the Evansville-Vanderburgh School Corporation (1988) evaluated the full day program through student achievement. School records of the two groups were compared. Children who attended full day kindergarten programs earned a higher percentage of

satisfactory conduct marks on their report cards in all but one area. Half day kindergarten students received more satisfactory marks in “self-control”. When comparing report card grades and grade point averages in grades six, seven, and eight, students who attended full day kindergarten averaged higher in all areas. Full day kindergarten students also had a higher percentage on scholarship ratings in the middle school years. Six standardized tests were used to assess academic progress. All, but one, showed the students who participated in the full day program as receiving higher average scores. The children who attended half day programs scored higher in handwriting.

Harrison-McEachern (1989) compared reading achievement of first grade students who attended a full day kindergarten program to those who attended a half day program. Students were selected from urban Newark, New Jersey, and represented 67 from the half day program, while 66 came from the full day program. The Comprehensive Tests of Basic Skills (CTBS) was given to the students in the eighth month of first grade. Results indicate that students who attended the full day program scored significantly higher than the half day students.

A study reviewed by Hatcher and Schmidt (1980) showed a significant academic difference in favor of the full day program as measured by the Metropolitan Readiness Test. Using the same sample one year later, students in the full day program scored higher on the Stanford Primary Test Battery.

Neiman and Gastright (1970) found a positive relationship between students who attended preschool and full day kindergarten, as opposed to students who attended preschool and a half day kindergarten program. This study was conducted over a four year period using five different standardized

tests. Significant differences were found in intelligence quotient, readiness and achievement at the end of preschool, kindergarten, first, and second grades.

The research conducted by Hough and Bryde (1996) supports that full day kindergarten programs are beneficial to academic growth. Data on report cards indicated that full day kindergarten students outperformed the half day students in eight of nine language arts/reading criteria, especially awareness of printed symbols. Of 13 math criteria only two significant results were found favoring full day students. The Early School Assessment norm-referenced achievement test was also used for comparison. Full day students scored higher on every criterion measured by this test, especially on reading and mathematics.

Non-supportive or Inconclusive Studies

Harman (1982) conducted research to compare achievement of students participating in a full day versus a half day kindergarten program. The sample chosen to participate was selected randomly and was chosen from schools of similar ethnic composition, mobility rate, and economic status. The California Achievement Test was administered in order to compare the achievement of both groups in reading and math. The results of the full day kindergarten students showed mean gains in both areas; however, statistical analysis indicated a lack of significance in the data.

A similar study done by Sergesketter and Gilman in 1988 does not support Harrison-McEachern's (1989) research. Reading achievement was compared at the end of first grade for students who attended a full day and half day kindergarten program. The results of the MacGinitie Reading Test showed no significant difference between the two groups. A large sample was used in

this study consisting of 148 students attending the full day and 96 from the half day program. Both groups were from similar socioeconomic areas, which included a majority of at-risk students.

Hatcher and Schmidt (1980) summarized results of various studies addressing the full day and half day kindergarten programs. They found inconclusive and inconsistent results. A pilot study in Texas (Schmidt, 1972) found no significant differences between students in the two programs using the Boehm Test of Basic Concepts and the Metropolitan Readiness Test as the assessment data. Using the same assessment, the Metropolitan Readiness Test, the Governor's Office of Research and Planning in Texas (1974) conducted a study comparing the two kindergarten programs. Results indicate that the differences in scores were not related to whether the child attended a full day program. Inconclusive results were also found by the New York Center for Field Research and School Services (1969) of the advantages of a lengthened kindergarten day. A study done by Hatcher (1978) revealed no significant difference in achievement of Mexican-American and Anglo students in effective or psychomotor achievement measured by three instruments between full day and half day kindergarten students. Hatcher and Schmidt (1980) also reviewed longitudinal studies. Johnson (1974) conducted a three year study of middle-class and disadvantaged lower-class pupils using the Walker Readiness Test and the Stanford Early Achievement Test. He found no significant difference between those who attended the full day program and those who attended the half day program at the end of first and second grades.

An experimental study was conducted by Holmes and McConnell (1990) comparing the achievement of full day and half day kindergarten students.

Students were chosen to participate in the full day program at random. Chapter I schools and schools from affluent areas were chosen. Subjects included 311 from the half day program and 326 from the full day program. Scores from six measures of academic achievement on the California Achievement Test were used as data to compare the two groups' performance. Four of the measures showed no significant difference. A significant difference was shown on two measures, Comprehension and Mathematics Concepts and Applications. The difference in the Comprehension subtest was higher in girls in the half day program than boys in the full day program; therefore, conclusions reveal that this difference wasn't a result of the program itself. The other difference in the Mathematics subtest was boys in the full day program scoring higher than the boys in the half day program. Holmes and McConnell did not elaborate on whether this difference could be a result of the program. Results of this study seem to be inconclusive.

Many of these studies also evaluated other areas, besides opinions and academic achievement and performance. The question of whether a full day program may cause fatigue, and in turn, irregular attendance was addressed. Most results indicate through observation and attendance, that fatigue was not significantly different than that of students in the half day program (Anderson, 1983; Evansville-Vanderburgh School Corporation, 1988; Wichita Public Schools, 1989; Hough & Bryde, 1996). Even though Hough and Bryde's (1996) research shows no significant difference in fatigue, they found more regular attendance in the full day program.

Cost was another factor analyzed in some of the studies. Two studies are contradictory in this regard. Anderson's (1983) study revealed that the cost

of the full day kindergarten programs did not exceed the cost of the half day programs. On the other hand, the Wichita Public Schools (1989) found the only disadvantage of the full day program was that it was costly.

No significant differences were found in the participation of middle school extra-curricular activities, promotion, and socialization between the students in the full day program and the half-day program (Evansville-Vanderburgh School Corporation, 1988; Wichita Public Schools, 1989). One study revealed that retention rates were higher and there were fewer special education placements from the full day kindergarten program (Wichita Public Schools, 1989).

Summary

As should be considered when generalizing all research, Anderson (1983) took into consideration other factors that may have influenced student growth, besides the amount of time in the program. Teacher expectations, classroom management styles, adult/student ratio, quality and amount of assistance, and parent expectations were pointed out as most likely being different in each classroom, which in turn could have affected student growth.

Glazer (1985) also reviewed the issues and problems with studies relating to full day kindergarten programs; for example, few of the studies define "time" as a variable; it is not always clearly stated how the children are selected for the participation in the programs; differences exist in the assessment tools which evaluated the programs; standardized tests receive too much emphasis; and only a few studies give attention to the curriculum content which is generally not defined. In addition, if the program is voluntary, children who attend the full day program are most likely to be more motivated at home to perform better. Glazer noted many of the studies are inconclusive and

contradictory, especially in the areas of: 1) the lasting effects of the full day program; 2) the positive impact on the child's social, emotional, physical, and cognitive development; 3) the cost-effectiveness of a longer day based on available resources and district needs; 4) the appropriateness of standardized tests being used to evaluate the programs; and 5) the relation between day care centers, preschool, and graded elementary schools in structure, curriculum, and outcomes.

The research results are equivocal in that the superiority of full day programs over half day programs has not been consistently demonstrated. Many researchers agree that a kindergarten program must be developmentally appropriate, and as Karweit (1992) points out, "quality" of time is more important than "quantity" of time.

Chapter III

Methodology and Procedures

Population

The population for the study consisted of all the students enrolled in full day and half day kindergarten programs in a small district in southern New Jersey with a total enrollment of approximately 1,166 students. The district contains two individual schools and provides two full day programs and four half day kindergarten programs which were the subjects of this study. This was the first year this district was offering full day kindergarten programs. Students enrolled in the full day program were chosen by lottery. The remaining kindergarten students participated in the half day program. Each classroom was taught by a certified teacher with the assistance of a full time teacher's aide. The enrollment of the kindergarten programs is shown in Table 1.

Method of Sample Selection

In order to obtain permission to review students' progress, a letter was sent to all kindergarten parents. The sample used in this study was determined by the amount of permission obtained. A total of 48 permission slips were returned from parents whose children were enrolled in the full day program, and a total of 55 permission slips were returned from parents whose children were enrolled in the half day program. Table 2 shows the number of children whose parents gave permission to review their child's progress for this study.

Table 1

Number of Students Enrolled in Kindergarten Programs (N=136)

	School 1	School 2	Total
Full Day Program	24	25	49
Half Day Program			
Morning	25	23	48
Afternoon	20	19	39
Total Enrolled	69	67	136

Table 2

Number of Students Participating in the Study (N=81)

	School 1	School 2	Total
Full Day Program	21	18	39
Half Day Program			
Morning	12	9	21
Afternoon	7	14	21
Total Participating	40	41	81

The total outcome which determined the sample used in this study consisted of 81 students (40 girls, 41 boys). The ages of the sample used ranged from 5 years, 1 month to 6 years, 5 months old. The sample consisted of

diverse backgrounds, predominantly of White students. The full day sample consisted of 30 White, 6 Black, and 3 Hispanic and other races. The half day program sample consisted of 36 White, 3 Black, and 3 Hispanic and other races.

Instrumentation and Scoring

The instrumentation used in this study was an informal assessment created by teachers and referred to as a “kindergarten screening test”. The test assessed each students’ knowledge of personal information (name, age, address, birthday, and phone number), visual discrimination (recognition of name, same/different, and colors), shape recognition, number recognition, counting skills, identification of body parts, knowledge of spatial and positional words, alphabet knowledge, visual motor skills, and letter recognition (lowercase).

Each item on the test was given one point; therefore, results were recorded as the child knows the skill or doesn’t know it. The total score was recorded as the percentage correct. A child could earn up to a total of 86 points which would equal 100%. See the Appendix for a sample of the test.

Collection and Analysis of Data

Data for this research was gathered by administering the kindergarten screening test on a pre and post test basis. Each child was administered the test individually by either a basic skills teacher, the kindergarten teacher, or the teacher’s aide. The test was given once in the beginning of the school year by the end of October, and then again in the middle of the school year by the end of February. Each item on the test was given one point; therefore, results were recorded as the percentage correct within each category. Percentage gains

were recorded by finding the difference between the post test and pretest scores. For example, if a child answered correctly 5 out of 10 items in one category (50%) on the pre-test and 9 out of 10 items (90%) on the post test, the child made a 40% gain. The average percentage gains of the full day program were then compared to the gains of the half day program. It was determined that a difference of ten points between the two programs' average gains would be considered significant progress over the other program. Overall, the number of items the test contained that were used for this study was 86 items; therefore, a criterion of 10 percentage points was selected because it represented growth over the comparison group. This analysis enabled a comparison of the growth of the students' progress in each of the programs.

Chapter IV
Analysis of Results

Interpretation of Assessment Results

The data gathered from the assessment tool was analyzed by comparing differences between pretest and post test results. This information was used to answer the following research question:

Do kindergarten children make greater gains in a full day program when compared to children enrolled in a half day program as measured by an informal teacher made kindergarten screening test?

A total of 81 children were evaluated; 42 from the half day program and 39 from the full day program. Results were recorded as percentage correct in each category. The results of the evaluation are presented in Tables 3, 4, and 5. The ten variables assessed are coded using the letters A through J which represent each variable as follows:

A=Personal Information	F=Visual Motor Skills
B=Visual Discrimination	G=Body Parts
C=Shape Recognition	H=Spatial and Positional Words
D=Number Recognition	I=Alphabet Knowledge
E=Counting	J=Lowercase Letter Knowledge

An inspection of Table 3 shows the percentage of items correctly answered within each category of variables by the full day kindergarten program; for example, on variable A (Personal Information) the children in both school 1 and school 2 answered an average of 67% of the items correctly on the pretest. On the post test, the children answered an average of 77.5% of the items correctly on the personal information category.

Table 3

Percentage of Items Answered Correctly for Students in the Full Day Program

Pretest Means

	A	B	C	D	E	F	G	H	I	J		Total
School 1	* 67	61	58	84	95	87	58	66	80	55		71.1
School 2	67	70	65	81	95	63	71	81	70	51		71.4
Average	67	65.5	61.5	82.5	95	75	64.5	73.5	75	53		71.25

Post Test Means

	A	B	C	D	E	F	G	H	I	J		Total
School 1	* 75	75	80	99	100	97	80	91	80	71		84.8
School 2	80	74	97	95	100	97	90	100	90	80		90.3
Average	77.5	74.5	88.5	97	100	97	85	95.5	85	75.5		87.55

*Data in each cell expressed as percentage of items answered correctly for that variable

Table 4 presents the same information as presented in Table 3 for the half day programs. When analyzing the results of the half day programs,

pretest results of shape recognition, knowledge of body parts, and knowledge of spatial and positional words (variables C, G, and H) in school 1 were not included, since the students were not assessed at that time in these areas; therefore, their average gains (Table 5) were also not included when analyzing the results.

Table 4

Percentage of Items Answered Correctly for Students in the Half Day Program

Pretest Means

	A	B	C	D	E	F	G	H	I	J	Total
School 1-AM	* 60	45	30	91	100	95	34	37	80	53	62.5
School 2-AM	60	87	62	75	85	60	64	73	80	32	67.8
School 1-PM	67	18	N/A	66	85	88	N/A	N/A	90	44	N/A
School 2-PM	65	84	70	72	90	72	56	81	50	27	66.7
Average	63	58.5	54	75.8	90	78.8	51.3	63.7	75	39	65.7

Post Test Means

	A	B	C	D	E	F	G	H	I	J	Total
School 1-AM	* 72	96	83	98	100	97	74	100	90	71	88.1
School 2-AM	77	89	87	95	90	80	80	97	90	60	84.5
School 1-PM	77	99	67	82	95	98	64	87	90	58	81.7
School 2-PM	77	97	85	88	90	85	66	96	60	51	79.5
Average	75.8	95.2	80.5	90.8	93.8	90	71	95	82.5	60	83.5

*Data in each cell expressed as percentage of items answered correctly for that variable

Table 5 presents the gains each program made and the difference between the two programs using the average percentages for the pretest and post test results. For example, in Variable A (Personal Information) for the full day program, the difference between the pretest average (67%) and the post test average (77.5%) is 10.5%. This shows the children in the full day program answered an average of 10.5% more items correctly on the pretest than the post test. The half day program made a 12.8% gain; therefore, this is a difference of 2.3% between the two programs. The half day program answered an average of 2.3% more items correctly more than the full day program. The full day programs made the most gains in shape recognition (variable C) and the least gains in counting (variable E). The half day programs made the most gains in visual discrimination (variable F) and the least gains in counting (variable E).

Table 5
Comparison of Gains Made in each Program

	A	B	C	D	E	F	G	H	I	J	Total
Full Day	*10.5	9	27	14.5	5	22	20.5	22	10	22.5	16.3
Half Day	*12.8	36.7	26.5	14.8	3.8	11.2	19.7	31.3	7.5	21	17.8
Difference	2.3	27.7	0.5	0.3	1.2	10.8	0.8	9.3	2.5	1.5	1.5

*All cells in this row expressed as the difference between the percentage of items answered correctly on the pretest compared to the post test

When comparing the gains of both programs, a meaningful difference was interpreted as programs increasing the rate of correct responses by more than ten percentage points. All gains analyzed were positive. There was only one area in which each program made significant difference over the other program. The full day program made significant progress in visual motor skills (variable F) as compared to the half day program. The half day program made significant progress in visual discrimination (variable B) as compared to the full day program. The half day program also showed a large difference over the full day program in knowledge of spatial and positional words (variable H), although it was not considered significant. When analyzing the score of the entire test, the full day program made a 16.3% gain and the half day program made a 17.8% gain. This is only a 1.5% difference when comparing the two programs.

Chapter V

Summary and Discussion

Summary

The purpose of this study was to determine if the children in full day kindergarten programs made greater gains when compared to half day kindergarten programs as measured by an informal teacher made kindergarten screening test.

The subjects of this study were 81 kindergarten students (40 girls, 41 boys) from two elementary schools in southern New Jersey. Thirty-nine (39) students were enrolled in the full day program, and 42 were enrolled in the half day program. Both groups were pretested with a teacher made kindergarten screening test in the beginning of the school year (September/October) and then post tested in the middle of the school year (January/February). Individual scores were calculated as percentage of items correct and then recorded as group averages. A comparison was made between the two groups to determine the difference of gains made in each program.

Results indicate that both programs made gains in all categories of the test. Compared to the half day program, the full day program made greater gains in visual motor skills, and the half day program made greater gains in visual discrimination skills when compared to the full day program. When comparing the average scores of the entire test, there was no significant

difference between the two programs.

The findings of this study indicate no meaningful difference in the gains made by the children enrolled in the two programs. Both programs made positive gains in all areas assessed with no regression on any of the variables.

Discussion

The data generated by this study supports the conclusion that progress was made in both full day and half day programs with no meaningful difference between the two programs. There are many factors to consider when generalizing these findings such as the difference in implementation of the curriculum, the administration of the test, and the test itself.

Each program was implemented by a different teacher. Even though the same curriculum was being taught; teacher styles and implementation of the curriculum was not uniform. Each teacher have their own style and approach of teaching. For example, one teacher may focus more on academics, where as another will emphasize social skills. Also, the instructional time spent on skills assessed on the test may not have been uniform across classrooms.

The standardization procedures in the administration of the test must also be considered. The test was administered by several people and the same person may not have given the same student the pre and post test. The rapport between the student and the administrator could have had an affect on the results. In addition, time of day the test was taken could have altered results. Subjectivity and bias of the administrator is a critical factor. What one administrator thinks is correct another may not. For example, personal information was one area assessed. The child was asked their first name, full name, birth date, address, phone number, and age. One administrator may

have counted a child responding to their address as correct when only street address was given; however, another administrator may have required the student to respond with street address, city, state, and zip code in order for the item to be counted as correct. In addition, the visual motor skills section required students to copy figures. The figures were a cross, a horizontal line, and a circle. Subjectivity certainly may have entered into the scoring of this latter type of item. It can be concluded that the test lacked standardization; therefore, reliability and validity were limited.

Finally, the amount of time between the pre and post test was approximately three months. This is a very brief period in which to generalize a child's progress in these programs. A follow-up study on the analysis of the children's growth at the end of the school year on the assessment tool used would give a better comparison of the two programs.

The results of this study should not be used to determine the effectiveness of full day programs over half day programs. The issues discussed above must be considered. Further research should be done and other assessment procedures used including observations, how time is used in each program, experience of teachers, and teaching approaches.

Appendix

Kindergarten Screening Test

Name: _____ Date of Birth: _____ KRT: ____%

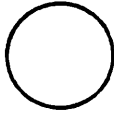
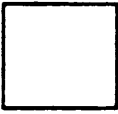




Personal Information (verbal response)

	Oct./Nov.	Jan./Feb.	Apr./May
First Name			
Full Name			
Age			
Address			
Birthday			
Phone Number			

Visual Discrimination

	Oct./Nov.	Jan./Feb.	Apr./May
recognize first name			
recognize last name			
identify same/different			
recognize colors			
white			
yellow			
orange			
red			
green			
blue			
brown			
black			
recognize colors (spring)			
gray			
pink			

Shape Recognition

						
Oct./Nov.						
Jan./Feb.						
Apr./May						

Number Recognition

	Oct./Nov.	Jan./Feb.	Apr./May
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

	Apr./May
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

Counting

Counts orally to what number? _____
(Oct./Nov.) (Jan./Feb.) (Apr./May)

Counts objects using one to one correspondence?

	Oct./Nov.	Jan./Feb.	Apr./May
10			
20			

Ordinal numbers? 1st 2nd 3rd 4th 5th (spring only)

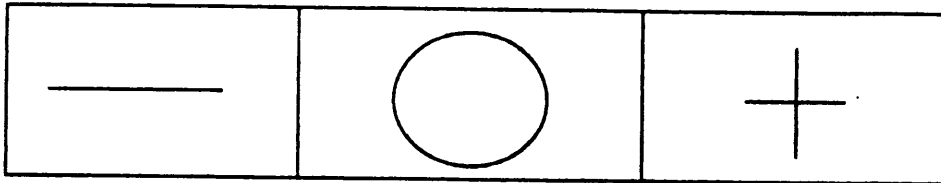
Visual Motor

	Oct./Nov.	Jan./Feb.	Apr./May
copies correctly			
1			
2			
3			
prints first name			
capitals?			
reversals?			
prints last name (spring)			
capitals?			
reversals?			
Handedness (Right/Left)			
Grasps Pencil Correctly			
Grasps Scissors Correctly			

1.

2.

3.



Have child draw shapes and write name below:

Body Parts

	Oct./Nov.	Jan./Feb.	Apr./May
chin			
fingernails			
heels			
ankles			
shoulders			
elbows			
hips			
waist			

Understands Spatial And Positional Words

	Oct./Nov.	Jan./Feb.	Apr./May
in front of			
behind			
next to			
on top			
on bottom			
inside			
outside			

Alphabet Knowledge

Recites alphabet orally? Oct./Nov. Jan./Feb. Apr./May

	O/N	J/F	A/M
A			
B			
C			
D			
E			
F			
G			
H			
I			
J			
K			
L			
M			
N			
O			
P			
Q			
R			
S			

	O/N	J/F	A/M
T			
U			
V			
W			
X			
Y			
Z			
a			
b			
c			
d			
e			
f			
g			
h			
i			
j			
k			
l			

	O/N	J/F	A/M
m			
n			
o			
p			
q			
r			
s			
t			
u			
v			
w			
x			
y			
z			
a			
b			

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