

**THE EFFECT OF KINDERGARTEN ATTENDANCE ON  
READING TEST SCORES AT THE END OF  
THE FIRST GRADE**

**BY**

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THE EFFECT OF KINDERGARTEN ATTENDANCE ON READING  
TEST SCORES AT THE END OF THE FIRST GRADE

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A Research Paper  
Presented to  
the Graduate Council of  
Austin Peay State University

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts  
in Education

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by  
Mary Josephine Sanford

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To the Graduate Council:

I am submitting herewith a Research Paper written by Mary Josephine Sanford entitled "The Effect of Kindergarten Attendance on Reading Test Scores at the End of the First Grade." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts in Education.

Elizabeth H. Stokes  
Major Professor

Accepted for the Council:

Wayne C. Stamps  
Dean of the Graduate School

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## Chapter I

### Introduction

The United States Office of Education (1969) gathered these statistics for James E. Allen, who was at the time Commissioner of Education:

1. One of four students nationwide has significant reading deficiencies.
2. More than three million illiterates are in the nation's adult population.
3. About one-half of the unemployed youth, ages 16 - 21 are functionally illiterate.
4. Three-quarters of the juvenile offenders in New York City are two or more years retarded in reading.
5. A USOE report estimates that from one to five percent of a school population could have severe reading disability requiring technical diagnosis and treatment in a reading clinic.

Assuming the figures from the United States Office of Education are accurate, the question presents itself -- how can the public schools best prepare children to learn to read? It is the objective of this study to determine the effect of kindergarten attendance on reading achievement at the end of the first grade.



### Statement of the Problem

The kindergarten was first organized as an induction into learning through play. Although some kindergarten theorists included work projects planned to develop certain skills, the child's freedom to explore, to inquire, to discover, to add to his fund of knowledge and to grow in the ability to socialize with others of his age became the predominant theoretical influence in the United States. Learning to read has only been recently emphasized as a reason for making kindergarten an integral part of the elementary school (Gans, 1963).

For the past twenty years or so a lot of time, money and energy in American education have gone into searching for solutions to the problem posed by that question of the 1950's: "Why can't Johnny read?" The problem and the search for the solution both continue. Perhaps the question should be posed differently: "What happens in the life of the child who develops rapidly and well as a reader?" Is it something that is not happening to the child whose progress leaves much to be desired? Does one year of experience in a kindergarten make a difference in achieving success in reading?

The purpose of this study was to investigate the effect of one year of kindergarten on the reading achievement of first graders as determined by test scores. The first grade children at East Montgomery Elementary School in the Clarksville-Montgomery County School System were chosen as



the subjects for this study. Of the eighty-five children enrolled in the first grade at East Montgomery, twenty had attended the East Montgomery kindergarten for one year, twenty-seven had attended kindergartens other than East Montgomery, leaving thirty-eight who had not attended kindergarten.

### Importance of the Study

The Elementary and Secondary Education Act of 1965 (Fishback, 1969) stated:

Any bill designed to upgrade and modernize American education which does not focus on preschool training is antiquated before it is ever enacted. The most imaginative innovations of recent years in teaching techniques and equipment have been made at the preschool level.

Present knowledge of the development of learning abilities indicates that the preschool years are the most important years of learning in a child's life. A tremendous amount of learning takes place during those years and this learning is the foundation for all further learning.

The public's awareness of the importance of good experiences for young children is being expressed in many different ways. Parents are bringing pressure on their communities to provide kindergartens for their five-year olds. The funding of kindergartens has become a pertinent

problem for Tennessee state government. Due to a focus, both national and local, on early childhood education this study was initiated as an attempt to measure the effect of one year of kindergarten experience on the success in reading of eighty-five children at the eighth month of first grade in the East Montgomery Elementary School.

### Limitations of the Study

East Montgomery Elementary School opened in the fall of 1970. Since the school had only been in operation one year, this study was necessarily limited to the first grade children who started their kindergarten experience at that time.

The study was further limited in that intellectual, environmental and motivational components were not determined.

### Hypotheses

The null hypotheses were tested by statistical analysis of the data collected and is stated as follows:

1. There is no significant difference in vocabulary reading test scores at the eighth month after entering first grade of children who attended East Montgomery kindergarten, children who attended private kindergartens, and children who did not attend kindergarten.
2. There is no significant difference in comprehension reading test scores at the eighth month after entering first grade of children who attended East Montgomery kindergarten, children who attended private kindergartens and children who did not attend kindergartens.

### Procedures for Treating Data

The hypotheses listed above were treated by the same statistical procedure. In each case differences in mean scores were tested by simple analysis of variance. Any differences found were subjected to further analysis to determine where the difference existed.



## Chapter II

### Review of Related Literature

A study regarding the value of early childhood education was done by Almy (1949) just following World War II. She hypothesized that learning to read in first grade was positively related to the number of responses to opportunities for reading the child made prior to first grade entrance. Her sample consisted of one hundred and six children in the three elementary schools of Elmont, New York. She found that a significant, positive relationship existed between children's beginning success in reading and their earlier response to all sorts of reading stimuli, and that interest in one kind of reading followed interest in another kind of reading. Also, no significant relationship was found between beginning reading success and either mental age of the child or occupational status of the parents. Almy makes no case for any formal reading program, but stresses the importance of exposure to the awareness of the function of printed words in everyday life.

Trusal (1955) failed to support part of these findings in a later study but showed additional relationships. He found that first grade children with kindergarten experience were average in social readiness for first grade, were superior in academic readiness, showed significant difference in number achievement and total average achievement, but were

not significantly better in reading achievement when paired on mental age. Positive correlations were found between social readiness and academic achievement; total readiness and academic achievement; intelligence and total average achievement; and intelligence and social readiness.

In 1964, Anastosiow used half the kindergartens in Palo Alto, California, as an experimental group and the other half as a control group to compare the progress of children who had not received reading instruction in kindergarten. At the end of the second grade, the group given reading instruction in kindergarten failed to show superiority over the control group (Dowley, 1969).

One of the earliest comparative studies of the school progress of kindergarten and non-kindergarten children was made by McLatchy (1928). This investigation was conducted in Ohio at a time when several schools in that state still did not have kindergartens. The investigator gave readiness tests to pupils at the beginning of first grade and reading tests at the end of the first year both in schools that had kindergarten and in schools that did not. Results of this investigation showed that children who had attended kindergarten were superior to non-kindergarten children both in scores resulting from reading readiness tests given at the beginning of the first grade and in reading tests given at the end of the first grade.

Morrison (1945) concludes in his study that the provision of kindergarten instruction reduced first grade

failure by fourteen percent and that normal or accelerated promotion through the grades was made by eighty percent of the group with kindergarten experience but by only fifty-nine percent of the group without kindergarten experience.

Fast (1957) conducted a strictly controlled study in which chronological age, I.Q., home background and school environment factors were matched for groups of children who had attended kindergarten and those who had not. She found that the children with kindergarten experience excelled in tests of reading readiness at the beginning of first grade, word recognition at the middle of the first year and paragraph reading at the end of the first year.

Pratt (1949) studied 226 children in Erie County, Pennsylvania. He found that pupils having previous experience in kindergarten ranked higher than non-kindergarten children on reading readiness tests at the beginning of first grade and significantly higher on Gates Primary Reading Tests at the end of the first grade.

An experiment in teaching reading in kindergarten was conducted in Denver, Colorado, where 4,000 children were involved to ascertain whether beginning reading could be effectively taught in kindergarten. These children were followed through the fifth grade. Random assignment of children was made. In the experimental group, twenty minutes a day was given to special reading instruction.

Findings from the Denver experiment (Brezenski, 1967) included the following results:



1. Beginning reading could be taught effectively to large numbers of kindergarten children.
2. A significant finding was that gains made in the experimental group could be maintained only by adjusted teaching procedure in subsequent grades.
3. The experimental group showed the greatest initial and long range gains in comprehension and reading vocabulary.
4. At the end of the third grade, the experimental group read with greater speed than any of the other groups.
5. No evidence was found that kindergarten instruction in beginning reading affected visual acuity, created problems of school adjustment or caused dislike for reading.

In comparing the achievement of kindergarten and non-kindergarten children in the first grade on the Metropolitan Achievement Test, East (1953) found that the average achievement for the kindergarten group was a grade equivalent of 2.1; for the non-kindergarten group, 1.65. He concludes that it is better and cheaper to give children the right start - i.e., kindergarten - than to have them cope with failure in the earlier years of their formal education.

Although Bergami and Swanson (1967) found differences in performance between kindergarten and the non-kindergarten groups were small, on the strength of the findings the non-

kindergarten group was given extra experience with numbers and manipulative arts and the kindergarten group was given practice in word usage. Bergami and Swanson feel that the real value of kindergarten lies in the opportunities it offers for social adjustment and for preparation for the more formal learning situation of the first grade.

Goetch (1965) conducted a study of first grade children in Iowa. He found the grade means of reading scores higher for those children who had attended kindergarten than those who had not.

Meyers (1936) compared the achievement of kindergarten and non-kindergarten children in the first grade. He concluded that the kindergarten children did "decidedly better" than the non-kindergarten children, both in their ability to adjust to school and in content subjects.

Lee (1934) found that the scores made on the Lee-Clark Readiness Tests by children with kindergarten experience better predicted their ability to learn to read than did the scores made by children who had not had kindergarten experience. He concludes that a background of common experience is an asset in a formal reading situation.

Teegarden (1965) points out differences in the reading achievement in children from different socioeconomic backgrounds. At the end of first grade, seventy percent of the children in the middle socioeconomic group who had had kindergarten experience and fifty-six percent of those who had not, were reading satisfactorily. In the lower socioeconomic group

forty percent of the children who had had kindergarten experience, and thirty-four percent of those who had not, were reading satisfactorily. Teegarden (1965) also points out the fact that children with kindergarten experience showed less tendency to confuse and reverse letters and figures than did those who had not had kindergarten experience.

According to Strang (1951) attending kindergarten "seems to give children an advantage in reading readiness and in first grade reading achievement." English (1951) puts the point more strongly: "There seems to be no doubt that attendance in a preschool helps the child off to a good start in primary grades." He points out, however, that the maintenance of this advantage is dependent on the kind of educational program the child is subjected to in the elementary school.

Even though this review of literature shows some conflicting research findings, most of the studies indicate that children who attend kindergarten are at an advantage in learning to read during their first year of formal reading instruction in the first grade. From the literature reviewed, it seems that kindergarten experience does make a contribution to reading achievement.



## Chapter III

### Presentation and Interpretation of Data

#### Subjects

East Montgomery was selected for this study because it was the only school in the Clarksville-Montgomery County School System where a sufficient number of first grade children could be found who had attended the kindergarten of the school where currently enrolled; who had attended private kindergarten and who had not attended kindergarten. There are several reasons why this is true of East Montgomery. Until the current school year, East Montgomery was the only school in the system which had a state pilot kindergarten program. This program which accepted twenty-five children from the East Montgomery district on a "first-come, first-serve" basis accounts for the number who attended East Montgomery kindergarten. In 1970, at the time the subjects entered kindergarten, the constituents of this district were primarily rural. In 1971, the zoning of children from a relatively high socioeconomic district into the East Montgomery district was initiated. This zoning accounts for seventeen of the twenty-seven children who attended private kindergarten. Because the number was limited to twenty-five on a "first-come, first-serve" basis, many children were unable to attend East Montgomery kindergarten even though they lived in the district. These children plus the number zoned into the East Montgomery district who did not attend private kindergarten

comprise the number who did not attend kindergarten.

These eighty-five first grade children at East Montgomery are enrolled in three classes. Children were not assigned to classes on the basis of kindergarten experience.

#### Description of Instrument and Procedure

The Gates-MacGinitie Reading Test, Primary A level, Form I which consists of two parts, vocabulary and comprehension, was administered to all children in the three first grade classes. Each first grade teacher administered the test to her class. The tests were hand-scored. The scores earned by each child on each part of the test were recorded by classes and returned to the investigator. The scores were then divided into three groups. Group I was composed of the scores of the twenty children who had attended kindergarten for one year at East Montgomery; Group II was composed of the scores of the twenty-seven children who had attended private kindergarten; and Group III was composed of the scores of the thirty-eight children who had not attended kindergarten.

#### Analysis of Data for Vocabulary

Table 1 concerns the vocabulary scores of the three groups tested and shows the number in each group, the mean standard score and grade score.

Table 1

Vocabulary Scores of Three First Grade Groups  
at Grade 1.8 on Gates MacGinitie  
Reading Test

Attended East Montgomery Kindergarten	Attended Private Kindergarten	Did Not Attend Kindergarten
Number 20	Number 27	Number 38
Mean 45.30	Mean 45.63	Mean 39.47
Grade Score 1.7	Grade Score 1.7	Grade Score 1.5

The hypothesis of no significant difference in vocabulary reading test scores at the eighth month after entering first grade of children who attended East Montgomery kindergarten, children who attended private kindergarten and children who did not attend kindergarten was tested by simple analysis of variance. This analysis is presented in Table 2. The analysis of variance produces an F value of 5.60. Since an F of 3.11 with the proper degrees of freedom, is significant at the .05 level, the hypothesis of no significant difference in the vocabulary reading test scores of the three groups of children is rejected.



Table 2

Analysis of Variance of Vocabulary Scores  
of East Montgomery Kindergarten Children,  
Private Kindergarten Children, Children  
Who Did Not Attend Kindergarten

Source of Variance	df	Sum of Squares	Mean Squares	F
Among the Means	2	763	381.5	5.60
Within Conditions	82	5,581	68.1	
Totals	84	6,344	449.6	

The results of the statistical analysis of variance shown in Table 3 is interpreted in the following explanation: for those children who attended East Montgomery kindergarten and private kindergarten, the analysis of variance produces an F value of .026. Since an F of 4.06, with the proper degrees of freedom is significant at the .05 level, the hypothesis of no significant difference in the vocabulary scores of children who attended East Montgomery kindergarten and children who attended private kindergarten is accepted.

For those children who attended East Montgomery kindergarten and those who did not attend kindergarten, the analysis of variance produces an F value of 6.99. Since an F of 4.00, with the proper degrees of freedom is significant at the .05 level, the hypothesis of no significant difference in the vocabulary scores of children who attended East Montgomery

Table 3

Analysis of Variance of Vocabulary Scores of  
 Children Who Attended East Montgomery  
 Kindergarten, Children Who Attended  
 Private Kindergarten, and Children  
 Who Did Not Attend Kindergarten

Source of Variance	df	Sum of Squares	Mean Squares	F
East Montgomery Kindergarten and Private Kindergarten				
Between Means	1	2	2	
Within Conditions	45	3,510	78.0	
Totals	46	3,512	80.0	.026
East Montgomery Kindergarten and No Kindergarten Experience				
Between Means	1	446	446	
Within Conditions	56	3,569	63.73	
Totals	57	4,015	509.73	6.99
Private Kindergarten and No Kindergarten Experience				
Between Means	1	599	599	
Within Conditions	63	4,083	64.81	
Totals	64	4,682	663.81	9.24

kindergarten and children who did not attend kindergarten is rejected. Therefore, it can be concluded that there is a significant difference in the vocabulary scores of children who attended East Montgomery kindergarten and children who did not attend kindergarten, with the more favorable scores belonging to the children who attended East Montgomery kindergarten.

For the children who attended private kindergarten and those who did not attend kindergarten, the analysis of variance produces an F value of 9.24. Since an F of 4.00 with proper degrees of freedom is significant at the .05 level, the hypothesis of no significant difference in the vocabulary scores of children who did not attend kindergarten is rejected. It is concluded that there is a significant difference in the vocabulary scores of the children who attended private kindergarten and the children who did not attend kindergarten with the more favorable scores belonging to the children who attended private kindergarten.

#### Analysis of Data for Comprehension

Table 4 concerns the comprehension scores of the three groups tested and shows the number in each group, the mean standard score and grade score.



Table 4

Comprehension Scores of Three First Grade Groups  
at Grade 1.8 on Gates MacGinitie  
Reading Test

Attended East Montgomery Kindergarten	Attended Private Kindergarten	Did Not Attend Kindergarten
Number 20	Number 27	Number 38
Mean 46.0	Mean 46.3	Mean 41.9
Grade Score 1.7	Grade Score 1.7	Grade Score 1.6

The hypothesis of no significant difference in comprehension reading test scores at the eighth month after entering first grade of children who attended East Montgomery kindergarten and children who did not attend kindergarten was tested by simple analysis of variance. Table 5 presents the results of this analysis.

The analysis of variance produces an F value of 2.69. Since an F of 3.11, with the proper degrees of freedom, is significant at the .05 level, the hypothesis of no significant difference in the comprehension reading test scores of the three groups of children is accepted. Although the scores were not significantly different, it is noted that both the kindergarten groups attained higher scores than the group which did not attend kindergarten.

Table 5

Analysis of Variance of Comprehension Scores  
of East Montgomery Kindergarten Children,  
Private Kindergarten Children, Children  
Who Did Not Attend Kindergarten

Source of Variance	df	Sum of Squares	Mean Squares	F
Among the Means	2	384	192	2.69
Within Conditions	82	5,846	71.3	
Totals	84	6,230	263.3	

## Chapter IV

### Summary, Conclusions and Recommendations

#### Summary

The primary purpose of this study was to determine the difference in reading scores made by children who attended kindergarten for one year and children who did not attend kindergarten.

The first grade children at East Montgomery Elementary School were used as subjects for the study. The students were divided into three groups. Group I was composed of twenty children who had attended kindergarten at East Montgomery; Group II was composed of twenty-seven children who had attended private kindergarten and Group III was composed of thirty-eight children who had not attended kindergarten. All students in these groups were given the Gates-MacGinitie Reading Test, Primary A level, Form I which consists of two parts, vocabulary and comprehension. When all data had been collected, an analysis of variance was performed.

The analysis of the vocabulary test scores revealed a significant difference at the .05 level among the three groups. This led to the rejection of the null hypothesis that stated there is no difference in the vocabulary test scores of the three groups investigated. In order to determine where the differences existed, an analysis of variance was performed. Thus, it was found that children who attended East Montgomery



kindergarten and private kindergarten did score higher on vocabulary tests than did children who had not attended kindergarten.

The analysis of the comprehension test scores failed to reveal a significant difference among the three groups. Therefore, the null hypothesis that stated there is no significant difference in the comprehension test scores of children who attended East Montgomery kindergarten, private kindergarten, and those who did not attend kindergarten was accepted.

### Conclusions

Much of the literature reviewed earlier in this study found that children who have attended kindergarten scored significantly higher than the non-kindergarten groups on reading tests. The findings of this study on vocabulary correlate with much of the literature reviewed which found that children who attend kindergarten do perform significantly better than children who do not attend kindergarten. Although these differences were found, it cannot be concluded that the kindergarten experience was responsible for these differences since the intellectual, environmental, and motivational components were not determined.

The findings of this study in comprehension failed to substantiate the findings of the literature reviewed. No significant difference was found in comprehension test scores among the three groups investigated although both kindergarten

groups did score higher than the group who did not attend kindergarten. One reason offered for the failure to find a difference among the groups is that although reading per se is not taught in many kindergarten programs, kindergarten children have many informal, functional contacts with reading. Labels are placed on objects in the room, on the children's work, on doors, on school buses and wherever they may serve some functional purpose. Pictures are cut from magazines and labeled; traffic and danger signs are used in kindergartens. Many experiences on the kindergarten level which stress vocabulary are provided. It may be that the "meaning-getting" skills are not always stressed to the same degree. The comprehension test scores in this study may indicate a lack of kindergarten experiences in the specific skills of comprehension. These specific skills which can be started on a pre-reading level include categorizing, drawing inferences, making generalizations, reasoning cause and effect, speculating on what happened, anticipating what will happen next, and making personal judgement. Although no differences were found, it cannot be concluded that the kindergarten experience was responsible since the intellectual, environmental and motivational components were not determined.

### Recommendations

#### Need for further research

On the basis of questions which became apparent in the progress of this study, the following topics are suggested for

further study:

1. The determination of the mental age or measured I.Q. score which would identify those children of above average intelligence, average intelligence and below-average intelligence.
2. Reading expectancy level of each child.
3. The socioeconomic background of each child.
4. The level of each child's oral language development.
5. The educational level of each child's parents.
6. Further analysis of the types of reading preparatory experiences provided at kindergarten level.

... grade 1 reading,  
... 1957.

... education, Illinois

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... a factory in  
... University of Iowa  
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... Elementary

... kindergarten and progress  
... State University.

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