

**A DESCRIPTIVE ANALYSIS OF
FIRST GRADERS' PERFORMANCE ON THE
METROPOLITAN READINESS TEST**

BY

JENNIE DELORES TIPTON

x
40

A Descriptive Analysis of First Graders'
Performance on the Metropolitan
Readiness Test

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

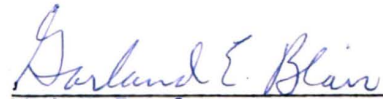
In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in Education

by
Jennie Delores Tipton
May 1974

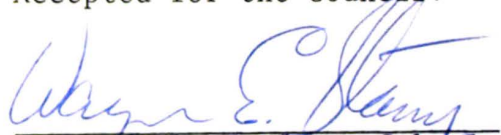
EST IV 2 WOODWARD LIBRARY

To the Graduate Council:

I am submitting herewith a Research Paper written by Jennie Delores Tipton entitled "A Descriptive Analysis of First Graders' Performance on the Metropolitan Readiness Test." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts in Education.


Major Professor

Accepted for the Council:


Dean of the Graduate School

Acknowledgements

The author wishes to express sincere appreciation to Dr. Garland E. Blair, Professor of Psychology, Austin Peay State University, for his assistance in the course of the study.

Appreciation is extended to Mrs. Anna B. Darden, Principal of Byrns L. Darden Elementary School, and to the first grade teachers at Byrns L. Darden. Without their cooperation this study would not have been possible.

List of Tables

Table		Page
1	Number in Each of the Three First Grade Groups on the Metropolitan Readiness Test Based on Their Preschool Experience	9
2	Number in Each of the Four First Grade Groups on the Metropolitan Readiness Test Based on Their Chronological Age	11
3	Number in Each of the Two Groups on the Metropolitan Readiness Test Based on Their Sex	12

Table of Contents

	Page
List of Tables	iv
Introduction to the Problem	1
Statement of the Problem	2
Limitations of the Study	2
Review of Related Literature	3
Presentation and Interpretation of Data.	6
Hypotheses	6
Procedures for Treating Data	7
Subjects	7
Description of Instrument and Procedure	8
Analysis of Data for Preschool Experience.	9
Analysis of Data for Chronological Age	11
Analysis of Data for Sex	12
Discussion of Data Results	13
Summary	15
Need for Further Research.	16
Bibliography	17

Introduction to the Problem

In 1969, James E. Allen, then the United States' Commissioner of Education, focused attention on a nationwide problem in reading. He cited these statistics compiled by the United States Office of Education:

1. Despite near - universal education, at least one-third of the nation's youngsters are reading below their proper grade levels.

2. One out of every four public school pupils has a serious reading deficiency.

3. As many as five out of every hundred children may need clinical help.

4. In larger cities where the demands of modern life are the greatest, the proportion of retarded readers is closer to fifty percent.

5. More than three million illiterates are in the nation's population.

Allen and the Office of Education implemented a new program called the "Right to Read." The goal of the program is to ensure that by 1980, the schools are giving each student the skill and desire necessary to read to the full limits of his capability. (1970)

Upon the analysis of this data, the question presents itself -- how can the public schools best prepare children to read? It is the objective of this study to examine the effect

of the child's preschool environment, the child's sex, and the child's age on reading readiness achievement at the beginning of the first grade.

Statement of the Problem

The purpose of this study was to analyze descriptively the entering performance of first graders on a readiness test given within the first three weeks of school. The effects of their preschool training, chronological age, and sex were examined in relation to their readiness level as determined by test scores.

The first grade children at Byrns L. Darden Elementary School in the Clarksville-Montgomery County School System were chosen as the subjects for this study. Of the one-hundred and ten children used in the study, thirty-one had attended public kindergarten, seventeen had attended private kindergarten, leaving sixty-two who had not attended kindergarten. The chronological ages ranged from five years and ten months to six years and eleven months. There were sixty-three boys and forty-seven girls in the study.

Limitations of the Study

The study is limited in that the intellectual, environmental, and motivational factors concerning each child were not measured and analyzed.

Review of Related Literature

Two longitudinal studies done by Durkin (1966) on children who could read before receiving formal instruction at school indicated that early readers are not a special group of children who can be readily identified and sorted by tests. She concluded that the key role in effecting the early achievement was the child's mother. "The homes they provide, the example they show, the time they give to the children, their concepts of their role as educator of the preschool child -- all of these dimensions of home life and of parent - child relationships appeared to be of singular importance to the early reading achievement." The study done in California included forty-nine children with the median IQ of 121 and a range from 91 to 161. The study done in New York included one-hundred fifty-six children with the median IQ of 133 and a range from 82 to 170. The variables of intellectual ability and socio-economical status did not measure as significantly in this study as did the mother's role.

Almy (1949) concluded that the best readers in her study were children whose experiences in kindergarten, in play, and with adults had in them some elements of reading. The elements of reading included being read to as well as attempts at actual instruction in reading. Her sample consisted of one-hundred six children in three elementary schools in Elmont, New York.

Bloom's analysis (1964) of the effects of early depri-

vation on learning showed the great importance of the early home environment, the nursery school, and the kindergarten. He stated that much of the child's intellectual development occurs before he enters the first grade.

The most important variable indicated by most studies in reading achievement is the child's intelligence, Slobodzian (1968) found that as a group successful readers have a significantly higher WISC verbal performance and full scale intelligence scores than do non-achievers. Kephart (1971) stated that intelligence sets the level at which teaching can begin. Intelligence defines the number and range of activities that can be used in presenting learning situations. A disruption in development tells the purpose of teaching and determines the selection of activities to be used.

Based on the results of the Gates' Reading Readiness Test, Silberburg (1966) found a significant difference after three weeks of regular first grade readiness activities in favor of children who had attended kindergarten. Pratt (1949) found that pupils having kindergarten experiences ranked significantly higher than non-kindergarten children on reading readiness tests.

In relation to the varying chronological ages of first grade children, Johnson (1967) found that older children scored significantly higher at the .01 level on the Clymer-Barrett Prereading Battery Test than did younger children. Miller (1964) found significance at the .05 level for those students of seventy-two months or above on a reading readiness

test. Rutherford (1964) found no significant difference in the ages of the children and their scores on the Metropolitan Readiness Test.

Hageson (1967) found varying patterns but no significant age or sex differences in first graders' performance on the Metropolitan Readiness Test and the Metropolitan Primary I Achievement Test scores. Thompson (1962) stated that "the average child appears to be ready for reading instruction at about six and one-half years of age; this implies by definition an average mental age of approximately six and one-half years."

Nicholson (1957) chose two thousand, one hundred eighty eight children in four communities in Boston. During the first few weeks of the first grade, the children were administered a battery of three tests: The Boston University Letter Knowledge Test, the Murphy-Durrell Diagnostic Reading Readiness Test and the Otis Quick-Scoring Mental Abilities Test. The data was analyzed by chronological age quartiles and the older children showed little superiority to the younger children in any of the variables including mental age. When the data was analyzed by sex, the girls scored significantly higher than the boys on twelve of the seventeen measures including mental age.

Miller (1964) found that the girls were on a slightly higher readiness level than the boys but the difference was not significant at the five percent level. Rutherford (1964) found no significant differences when comparing boys and girls

scores on the Metropolitan Readiness Test.

Akers (1969) found that girls scored significantly higher on the Metropolitan Readiness Test. Mortenson (1967) found that when intelligence was held constant beginning first grade girls scored significantly better than boys on the pre-reading discrimination tasks level across socio-economic levels. His measuring instruments were the California Short Form Test of Mental Maturity and the Clymer-Barrett Pre-Reading Battery Form A. Mehl and others (1965) and Thompson (1962) stated that girls frequently are more mature than boys of the same age and generally learn to read at an earlier age.

Summation of the Review of the Literature

As the review of the literature indicates, there is a multiplicity of variables that affect a child's performance on a reading readiness test at the beginning of the first grade. The literature reviewed indicates conflicting results of studies investigating the contribution of the child's chronological age, sex, and preschool experiences to his reading readiness abilities.

Presentation and Interpretation of Data

Hypotheses

The null hypotheses are stated as follows:

1. There is no significant difference in scores on the Metropolitan Readiness Test based on the different

chronological ages of the children.

2. There is no significant difference in scores on the Metropolitan Readiness Test based on the sex of the child.

3. There is no significant difference in scores on the Metropolitan Readiness Test of children who attended public kindergarten, children who attended private kindergarten and children who did not attend kindergarten.

Procedures for Treating Data

The hypotheses listed above were treated by the same statistical procedure. The statistical procedure used was the Brown-Mood Multi-Sample Median Test (Bradley 1968). A grade median score of fifty seven was established.

Subjects

Byrns L. Darden was chosen for this study because this was the first school term that some of the entering first graders had attended public kindergarten. The public kindergarten program enrolled twenty-five children from the Byrns L. Darden district on the basis of the child's age. The youngest children were admitted first to the program. Six other children moved into the district to begin the first grade who had attended public kindergarten in other areas. Seventeen children had attended a private kindergarten. Sixty two children had not attended kindergarten.

These one hundred ten first grade children at Byrns

L. Darden are enrolled in four classes. Children were not assigned to classes on the basis of kindergarten experience.

Description of Instrument and Procedure

The Metropolitan Readiness Test consists of six subtests that are combined by summing the raw scores into a composite readiness score. The six subtests are word meaning, listening, matching, alphabet, numbers and copying.

Each first grade teacher administered the test to her class. The tests were hand-scored by the teachers. The investigator then recorded the composite raw score of each child plus data concerning the child's age, sex and preschool experience.

The scores were then divided on the basis of the hypotheses being tested. The first division was based upon the preschool experience of the child. Group I was composed of the scores of the children who had attended public kindergarten; Group II was composed of the scores of the children who had attended private kindergarten; and Group III was composed of the scores of the children who did not attend kindergarten.

The second division was chronological age quartiles. Group I was composed of the scores of the eighteen children whose ages ranged from five years and ten months to six years; Group II was composed of the scores of the thirty-seven children whose ages ranged from six years and one month to six years and four months; Group III was composed of the scores of the

thirty five children whose ages ranged from six years and five months to six years and eight months; and Group IV was composed of the scores of the seventeen children whose ages ranged from six years and nine months to six years and eleven months.

The third division was based upon the sex of the child. Group I was composed of the scores of the sixty-three boys and Group II was composed of the scores of the forty-four girls.

Table 1

Number in Each of the Three First Grade Groups
On the Metropolitan Readiness Test Based
On Their Preschool Experience

Number of Observations	Public Kindergarten	Private Kindergarten	No Kindergarten	Total
Below Grand Median	12 (39%)	3 (18%)	37 (63%)	52
Above Grand Median	19 (61%)	14 (82%)	22 (37%)	55
Total	31	17	59	107

Analysis of Data for Preschool Experience

Table 1 shows the number in each of the three groups who were below and above the grand median score of fifty-seven. The hypothesis of no significant difference on the Metropolitan

Readiness Test based on the preschool experience of the children was examined by the Brown-Mood Multi-Sample Median Test. The test yielded a chi-square value of 12.392 with two degrees of freedom, so the hypothesis of no significant difference among the three groups is rejected at the .01 level.

Sixty-one percent of the children who attended public kindergarten scored above the grand median. Eighty-two percent of the children who attended private kindergarten scored above the grand median. Thirty-seven percent of the children who did not attend kindergarten scored above the grand median. Therefore, children who attended public or private kindergarten made higher scores on this test than children who did not attend kindergarten.

Table 2

Number in Each of the Four First Grade Groups on the
Metropolitan Readiness Test Based on
Their Chronological Age

Number of Observations	Below 6-1	6-1 to 6-4	6-5 to 6-8	Above 6-8	Total
Below Grand Median	8 (44%)	20 (54%)	18 (51%)	6 (35%)	52
Above Grand Median	10 (56%)	17 (46%)	17 (49%)	11 (65%)	55
Total	18	37	35	17	107

Analysis of Data for Chronological Age

Table 2 shows the number in each of the four groups who were below and above the grand median score of fifty-seven. The hypothesis of no significant difference in scores on the Metropolitan Readiness Test based on the different chronological ages of the children was examined by the Brown-Mood Multi-Sample Median Test. The test yielded a chi-square value of 1.938 with three degrees of freedom, which was not significant, so the hypothesis of no significant difference among the four groups was not rejected.

Sixty-seven percent of the children were between the ages of six years and one month to six years and eight months. Forty-seven percent of these children scored above the grand

median. Seventeen percent of the children's ages were below six years and one month. Fifty-six percent of these children scored above the grand median. Sixteen percent of the children's ages were above six years and eight months. Sixty-five percent of these children scored above the grand median. Therefore, the younger children and the older children scored higher than the children from six years and one month to six years and eight months.

Table 3

Number in Each of the Two First Grade Groups on the
Metropolitan Readiness Test Based
On Their Sex

Number of Observations	Boys	Girls	Total
Below Grand Median	36 (57%)	16 (36%)	52
Above Grand Median	27 (43%)	28 (64%)	55
Total	63	44	107

Analysis of Data for Sex

Table 3 shows the number in each of the two groups who were below and above the grand median score of fifty-seven. The hypothesis of no significant difference on the Metropolitan Readiness Test based on the sex of the children was examined by the Brown-Mood Multi-Sample Median Test. The

test yielded a chi-square value of 4.514 with one degree of freedom, so the hypothesis of no significant difference among the two groups is rejected at the .05 level.

Forty-three percent of the boys scored above the grand median. Sixty-four percent of the girls scored above the grand median. Therefore, the girls scored significantly better than the boys did on this test.

Discussion of Data Results

The analysis of the three first grade groups based on their preschool experience revealed a significant difference. This finding was in agreement with the studies done by Almy, Silberburg and Pratt, who reported significant differences among children who attended kindergarten and who did not attend kindergarten on their readiness test.

Since the children who attended private kindergarten probably came from a more enriched environment their scores might have been influenced by variables other than the kindergarten experience.

On the other hand, the scores of the children who attended public kindergarten might have been influenced greatly by the kindergarten experience. As the only criteria used in the kindergarten's admittance was the child's age, all races and cultures were represented in the public kindergarten. Sixty-one percent of these children were above the grand median as compared to thirty-seven percent of the children who did not attend kindergarten. The attendance in kindergarten

probably was a significant variable in the performance in this group.

The studies, done by Durkin, Almy and Bloom on the importance of the early home environment on learning, suggested that the performance of the children who did not attend kindergarten but scored above the grand median might be attributed to their home environment.

The analysis of the scores of the four groups based on the different chronological ages revealed no significant difference. This finding of no significant difference was in agreement with the studies done by Rutherford, Hageson and Nicholson. Rutherford and Hageson used the Metropolitan Readiness Test in their studies and Nicholson used the Murphy Durrell Diagnostic Reading Readiness Test. The finding did not support the studies done by Johnson and Miller in that older children scored higher than younger children on their readiness test.

Although no significant difference was found in the chronological ages of the children, varying patterns were found. When analyzed by the percentage of children who scored above the grand median, the younger children and the older children scored higher than the middle children. The fact that the youngest children had priority in attending the public kindergarten could have been an influencing factor for this group.

The analysis of the two groups based on the sex of the child revealed a significant difference, so the null

hypothesis was rejected. Forty-three percent of the boys and sixty-four percent of the girls scored above the grand median. This finding supported the studies done by Nicholson, Akers and Mortenson. It contradicted the studies done by Rutherford and Miller. Miller, however, did find that the girls in his study were on a slightly higher readiness level than the boys but the difference was not significant.

As the environmental, intellectual and motivational factors concerning each child were not analyzed, it cannot be ascertained that the factors of preschool experience, chronological age and sex were the dominant factors that influenced the results of this study.

Summary

The primary purpose of this paper was to analyze the entering performance of first grade children on a readiness test based on their preschool experience, chronological age and sex.

The first grade children at Byrns L. Darden were used as subjects for the study. The students were divided into three divisions. Within each division, they were grouped according to the hypothesis being tested. All the students were given the Metropolitan Readiness Test. When all the data had been collected, the Brown-Mood Multi-Median Sample Test was performed.

A significant difference was found among the scores of children who attended public kindergarten, who attended

private kindergarten and who did not attend kindergarten.

No significant difference was found among the scores based on the difference chronological ages of the children.

A significant difference was found among the scores based on the sex of the child.

Need for Further Research

Several variables that affect reading readiness achievement were not examined in this study. The following topics are suggested for further study:

1. The determination of the mental age or measured IQ score of each child.
2. The socio-economic background of each child.
3. The level of each child's oral language development.
4. The types of reading experiences that the child has been exposed to in the kindergarten programs or in the home.
5. The motivational factors that influenced each child's performance.

Bibliography

- Akers, James, A Predictive Validity Study of the Metropolitan Readiness Test, Oklahoma State University, 1969.
- Almy, Millie, Children's Experiences Prior to First Grade and Success In Beginning Reading. Columbia University Press, 1949.
- Bloom, Benjamin, Stability and Change in Human Characteristics. New York: John Wiley, 1964, 237.
- Bradley, James, Distribution - Free Statistical Tests, Englewood Cliffs, New Jersey: Prentice Hall, 1968, 368.
- Durkin, Delores, Children Who Read Early: Two Longitudinal Studies. New York: Teachers College Press, 1966, 1974.
- An Education U.S.A. Report, Reading Crusade: An End to Illiteracy? The Shape of Education for 1970-1971. Washington, D.C.: National School Public Relations, 1970.
- Hageson, Sara, The Relation of First Grade Readiness and Achievement Scores Based on Sex, Race and Age. University of Southern Mississippi, 1967.
- Johnson, Rober, A Study of the Validity of the Clymer - Barrett Prereading Battery, University of Minnesota, 1967.
- Kephart, Newell, The Slow Learner in the Classroom. Columbus, Ohio: Charles E. Merrill, 1971, 292.
- Mehl, Marie, Douglas Mills and Scobey, Teaching in Elementary School, New York: Ronald, 1965.
- Miller, Grover, The Effect of an Experimental Approach to Promoting Reading Readiness on Certain Aspects of Reading Achievement at the First Grade Level. University of Arkansas, 1964.
- Mortenson, William, Differences in Performances of Beginning First Grade Pupils on Selected Prereading Tasks According to Socio-Economic Status and Sex. University of Wisconsin 1967.
- Nicholson, Alice, Background Abilities Related to Reading Success in First Grade. Boston University, 1975.

- Rutherford, William, The Effects of a Perceptual -- Motor Training Program on the Performance of Kindergarten Pupils on the Metropolitan Readiness Test. North Texas State University, 1964.
- Silberburg, Margaret, The Effect of Formal Reading Readiness Training in Kindergarten on Development of Reading Skills and Growth in Reading. University of Minnesota, 1966.
- Slobodzian, Evelyn, The Relationship Between Certain Readiness Measures and Reading Achievement at Level One. Temple University, 1968.
- Thompson, George, Child Psychology. Boston: Houghton-Mifflin, 1962, 379.