PROGRESS MADE BY TWO AGE GROUPS OF

FIRST-GRADE CHILDREN

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CHAPTER I

INTRODUCTION

Purpose of the Study

The three-fold purpose of this study is

1. To contrast the physical, mental, and emotional development of children who were six to six and one-half years old with those who were older than six and one-half at the beginning of the school year.

2. To contrast the amount of progress made in subject-matter achievement and in emotional development.

3. To determine, by comparison of the two groups, which group had the advantage as far as subject-matter achievement, adjustment, and behavior were concerned.

Significance of the Study

A decision to study this problem grew out of the belief that school achievement is dependent upon the functioning of all aspects of growth. Gertrude Hildreth and Nellie Griffiths say, "The age criterion of six years, apart from other factors, has proved to be inadequate as an indication of the readiness of children for formal school learning".[1]

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[1]Gertrude Hildreth and Nellie Griffiths, Metropolitan Readiness Tests, Manual of Directions, p. 1.

The Pampa Public Schools require children to be six years old on or before September the first of the year they plan to enter. Some parents become concerned when their children are not accepted earlier than the minimum age requirement. They seem to have difficulty in understanding why a child should wait a year when he is just below admission age. Some of these children attend a parochial school their first year and enter the Pampa Public Schools the following year.

When the concept of individual differences is considered, the assumption that all children do not "become ripe" for school learning at the same time seems logical.

> Children show as great diversity in readiness as they show in general intelligence and physical traits . . . . Being identical in chronological age is no guarantee that two children are equally mature for learning to read. Data from wide-scale objective testing prove that in any first-grade class the most capable learner has learning potentiality about three times as great as the least capable.[2]

Lucille Harrison uses the term "factors of prime importance" as she refers to the child's readiness for learning first-grade skills. These factors are listed as mental, physical and personal. She concludes the paragraph with this statement, "Chronological age is comparatively unimportant and should not any longer be considered the sole criterion for entrance to first grade and the beginning of the reading process".[3]

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[2]Gertrude Hildreth, Learning the Three R's, p. 183.
[3]M. Lucille Harrison, Reading Readiness, p. 30.

Source of Data

Data for this study were obtained from summer round-up sheets, readiness, mental, personality, achievement tests and behavior rating schedules. These tests were given to thirty-two children who entered first grade September 6,1949. Teacher observation and parent-teacher conferences provided additional information.

Limitations of the Study

The experiment was confined to the study of first-grade children in one room of the Woodrow Wilson Elementary School, Pampa, Texas. The period of eight months which the study covered limits the reliability of any final decisions. The study was concerned with the physical, mental, and emotional development of these children. Testing was limited to one physical check, two behavior rating schedules, one readiness, one intelligence, one achievement, and two personality tests. This type of testing is subject to the uncontrollable factors of illness, fatigue, emotional upset, and inattention which may enter into the results.

Description of the School in Which the Study was Made

The school used for this experiment was Woodrow Wilson Elementary School, Pampa, Texas. The faculty consisted of the following members at the time the study was made: a principal, a music teacher, and fourteen classroom teachers.

There were three classroom teachers for each grade through the fourth grade and two teachers for the fifth grade. The enrollment consisted of approximately five hundred pupils. Nearly one hundred twenty-five pupils were bus children who came from the surrounding oil fields, farms, and ranches. Most of the town children came from the east section of town and belonged to the middle income group.

Method of Procedure

Thirty-two first-grade children were placed in one room for this study. They were divided into two equal groups on a basis of chronological age. One group consisted of children who were six to six and one-half years old on September 1, 1949. The children in the other group were older than six and one-half years on that date.

Both groups were given the following tests: a physical examination, a California Test of Personality, Primary Series, Form A, a Metropolitan Readiness Test, Revised, a Kuhlmann-Anderson Test, Grade 1, Second Semester, and the Haggerty-Olson-Wickman Behavior Rating Schedules. The purpose of these tests were to study by contrast the physical, mental, and emotional developmental status of the two groups.

During the eight months between testings, the children were guided into activities which aimed at maximum growth for all. Near the end of the experimental period tests were given again to determine the progress made by the two groups

and to determine which group had the advantage, if any. The tests used at this time were: California Test of Personality, Primary Series, Form B, Metropolitan Achievement Tests, Primary 1 Battery: Form R, and Haggerty-Olson-Wickman Behavior Rating Schedules.

Organization of the Study

Chapter II contains the procedure used to compare the two groups on the basis of mental, emotional, and physical development. Chapter III outlines classroom activities designed to promote maximum growth for each child in the two groups. Chapter IV is concerned with the procedure used to determine the amount of growth of each child in the two groups during the period of eight months. Chapter V is composed of the summary, conclusions, and recommendations.

CHAPTER II

COMPARISON OF THE DEVELOPMENTAL STATUS OF TWO GROUPS OF FIRST-GRADE CHILDREN

The purpose of this chapter is to explain the procedure used in determining the physical, mental, and emotional readiness of two age-groups of children upon entering first grade, and to make comparisons of the two groups.

In determining a child's readiness for first grade one no longer attributes readiness to a single item such as mental or chronological age. "It is now generally conceded that readiness is a developmental condition depending upon the combined operation of a number of related factors,"[1] the child's physical characteristics constituting one important factor.

Physical Development

If a child does not feel physically adequate to meet the demands of his environment he may seek to make adjustments in ways that are objectional to his home, school, and community. Such conflicts with his environment may impede his progress in learning first-grade skills.

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[1]Paul Witty, Reading in Modern Education, p. 56.

Table 1 is concerned with the heights of each child in the two groups. The source of data for this table was summer round-up sheets. Variations in heights, medians, and averages are shown.

TABLE 1

A COMPARISON OF THE HEIGHTS OF TWO AGE GROUPS OF BOYS AND TWO AGE GROUPS OF GIRLS AS REVEALED BY SUMMER ROUND-UP SHEETS

Pupil Rank	Height Boys in Inches			Height Girls in Inches		
	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.
1	50	53	3	50	48	2
2	49	51	2	47	47½	½
3	48	49	1	46½	47½	1
4	47	48	1	46	47	1
5	47	48	1	45½	47	1½
6	46½	47¼	3/4	45	46	1
7	46	47	1		45	
8	46	46½	½			
9	45	46	1			
10	44					
Median	47	48	1	46½	47¼	1
Average	46.9	48.4	1.5	46.6	46.9	.3
Range	6	7	1	5	3	2
Pupils ave. or above	5	3	2	2	5	3

A comparison of the heights of boys shows that the median height of the older group was one inch taller than that of the younger group, and the average height was 1.5 inches taller for the older group. The younger group had

one inch less variation in range from tallest to shortest than did the older group. Five boys in the younger group were above their group average of 46.9 inches, whereas three boys in the older group were above their group average of 48.4 inches.

The heights of the girls show that the older group was one inch taller than the younger group in median height and .3 inch taller in average height. Variation in range shows a difference of five inches from tallest to shortest in the younger group and three inches from tallest to shortest in the older group. Two of the six girls in the younger group were above their group average of 46.6 inches and five of the seven girls in the older group were above their group average of 46.9 inches. When the heights of the two groups were arranged from highest to lowest and compared, the heights of the older group were taller than those of the younger group.

Table 2 is concerned with the weights of boys in the two age-groups and the weights of the girls in the two age-groups. Median and average weights are shown. Variation in range of weights and the number of pupils who were above average are considered. The weights are arranged in descending order. Table 2 reveals that the median weight of the older group of boys was one pound heavier than that of the younger group, and the average weight was 2.4 pounds heavier. The younger group had less variation in range than did the older group. The heaviest boy in the younger group weighed sixty

pounds and the lightest boy weighed forty-three pounds, while the heaviest boy in the older group weighed seventy-one and one-half pounds and the lightest boy weighed forty-six pounds.

TABLE 2

A COMPARISON IN WEIGHTS OF TWO AGE GROUPS OF BOYS AND GIRLS AS REVEALED BY SUMMER ROUND-UP SHEETS

Pupil Rank	Weights of Boys			Weights of Girls		
	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.
1	60	71½	11½	61	51	10
2	54½	54	½	47	50	3
3	50	52	2	47	47	0
4	49½	49	½	46	46½	½
5	48	49	1	44	46	2
6	48	48	0	43	45	2
7	46	47½	1½		43	
8	45	46	1			
9	45	46	1			
10	43					
Median	48	49	1	46½	46½	0
Average	48.9	51.4	2.5	48	46.9	1.1
Range	17	25½	8½	18	8	10
Pupils ave. or above	4	3	1	1	3	2

Four boys in the younger group were above their group average of 48.9 pounds and three boys in the older group were above their group average of 51.4 pounds. The younger group of boys showed less variation in range of weights than did the older group.

The median weight of 46½ pounds was the same for both groups of girls. The average weight of the younger group was 1.1 pounds heavier than that of the older group. This heavier average weight of the younger group was due to the weight of one oversize girl in the group. The older group had less variation in range than did the younger group. The heaviest girl in the older group weighed fifty-one pounds and the lightest weighed forty-three pounds. Table 2 would seem to indicate that neither group had much advantage over the other as far as weight was concerned.

Mental Development

Paul Witty says,

> We are now aware that readiness should be a serious concern when instruction in reading is initiated. . . . Readiness of a particular child for reading. . . depends upon his ability, his past experience, his purpose, and his attitude.[2]

Tables 3 through 6 show comparisons of two age-groups of first-grade children in the Metropolitan Readiness Tests. The purpose of this test is to determine the extent to which pupils are ready to learn first-grade skills. The test is composed of six parts: two perceptual tests involving recognition of similarities and copying figures; two measures of vocabulary, understanding and comprehension of language by

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[2] Paul Witty, Reading in Modern Education, p. 46.

word and sentence recognition; general information; and numbers.[3]

Table 3 presents scores in the first two parts of the Metropolitan Readiness Tests, "similarities" and "copying". Perceptual abilities have a close relationship to success in learning first-grade skills. The factor of reversals, which enters into a number of items, has been found to be correlated with lack of experience and with immaturity of perceptual abilities in young children.[4] Test scores of children who were six to six and one-half years old are compared with test scores of children who were older than six and one-half. Individual, total, median, and average scores are compared. The number of children who were average or above is listed and the range in test scores is given.

A comparison of individual scores in the "similarities" test shows nine pairs with no difference, four pairs with a total difference of six points in which the younger group excelled, and three pairs with a total difference of ten points in which the older group excelled. The total scores of 204 points for the younger group and 208 points for the older group show a four-point difference in favor of the older group. A median score of thirteen points was made by

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[3]Gretrude Hildreth, and Nellie Griffiths, Metropolitan Readiness Tests, Manual of Directions, p. 1.

[4]Ibid., p. 4.

each group. The average scores were thirteen points for the older group and 12.7 points for the younger group, a difference of .3 point. The variation in range of twenty points

TABLE 3

COMPARISON OF TEST SCORES OF CHILDREN SIX TO SIX AND ONE-HALF AND CHILDREN OLDER THAN SIX AND ONE-HALF AS REVEALED BY SIMILARITIES AND COPYING TESTS

Pupil Rank	Similarities			Copying		
	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.
1	21	21	0	11	11	0
2	21	19	2	11	11	0
3	19	18	1	11	11	0
4	15	17	2	11	11	0
5	15	17	2	11	11	0
6	15	15	0	10	11	1
7	15	15	0	9	10	1
8	13	13	0	9	10	1
9	13	13	0	8	10	2
10	13	13	0	8	9	1
11	11	11	0	6	9	3
12	11	10	1	5	9	4
13	11	9	2	4	7	3
14	9	9	0	4	5	1
15	1	7	6	3	5	2
16	1	1	0	3	4	1
Total	204	208	4	124	144	20
Median	13	13	0	9	10	1
Average	12.7	13	.3	7.7	9	1.3
Range	20	20	0	8	7	1
No. pupils ave.or above	10	10	0	10	12	2

with a high score of twenty-one and a low of one was the same for both groups. Ten pupils in each group were above the average for their group. A summary comparison in the test in "similarities" shows: both groups were equal in three of the six phases compared. The younger group excelled in one phase and the older group excelled in two. The difference in any one phase was slight.

Scores in the "copying" test, presented in Table 3, show five pairs with equal scores and the remaining eleven pairs with different scores. The total difference of twenty points was in favor of the older group. An average score of nine points for the older group exceeded that of the younger group (7.7 points) by 1.3 points. Each group had a high score of eleven points. Low scores of four and three points were made by the older and younger groups, respectively. The number of pupils of average rank or above were twelve for the older group and ten for the younger. A summary comparison in the "copying" test shows: the older group made higher scores in all six phases compared. Four phases had no more than a two-point difference.

Table 4 is concerned with comparisons of scores made by the two groups in "vocabulary" and "sentence" tests. The procedure used in making comparisons in Table 3 is followed here.

The "vocabulary" test shows three pairs of equal scores, three pairs in which the scores of the younger group exceeded

those of the older group by a total of three points, and ten pairs in which the scores of the older group exceeded those of the younger group by a total of twenty-six points. The total scores of 201 points for the younger group and 224 for the older group show a difference of twenty-three points in

TABLE 4

COMPARISON OF TEST SCORES OF TWO AGE GROUPS OF CHILDREN AS REVEALED BY VOCABULARY AND SENTENCE TESTS

Pupil Rank	Vocabulary			Sentence		
	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.
1	17	17	0	15	15	0
2	16	16	0	15	15	0
3	16	15	1	15	15	0
4	16	15	1	15	15	0
5	16	15	1	14	15	1
6	15	15	0	14	14	0
7	13	14	1	14	14	0
8	13	14	1	13	14	1
9	12	14	2	13	14	1
10	12	14	2	13	14	1
11	12	14	2	12	14	2
12	11	13	2	12	14	2
13	11	13	2	12	13	1
14	11	13	2	12	13	1
15	5	12	7	11	13	2
16	5	10	5	10	12	2
Total	201	224	23	210	224	14
Median	13	14	1	13	14	1
Average	12.5	14	1.5	13.1	14	.9
Range	12	7	5	5	3	2
No. Pupils ave.& over	8	11	3	7	12	5

favor of the older group. The median scores of thirteen points for the younger group and fourteen for the older show a one-point advantage for the older group. This group also had an average score 1.5 points higher than that of the younger group. A high of seventeen points in range was the same for both groups. The older group had a low of ten points, whereas the younger group had a low of five. Eight children in the younger group and eleven in the older were average or above. The difference of three points was in favor of the older group. A summary of the "vocabulary" test shows: the older group had slightly better scores in all six items compared. The greatest difference was twenty-three points in total scores and the least difference was one point in median scores.

The "sentence" test reveals six pairs of equal scores and ten pairs in which the older group excelled. The total scores of 210 and 224 points show a difference of fourteen points in favor of the older group. This group also had a one-point higher median score and a .9-point higher average. The variation in range of scores shows that both groups had a high of fifteen points. The older group had a low score of twelve points, while the younger group had a low of ten. The older group excelled in all six phases compared, but in no phase was the difference greater than five points, except in total scores.

Scores in tests of "information" and "numbers" are shown in Table 5. The test in "information" reveals that seven

pairs of scores were equal, two pairs showed higher scores for the younger group, and seven pairs showed higher scores for the older group. The older group had a total score seven points higher than that of the younger group. The

TABLE 5

A COMPARISON OF TEST SCORES OF TWO AGE GROUPS OF CHILDREN AS REVEALED BY NUMBER AND INFORMATION TESTS

Pupil Rank	Information			Numbers		
	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.
1	16	16	0	37	40	3
2	15	16	1	35	39	4
3	15	16	1	35	35	0
4	15	15	0	33	34	1
5	15	15	0	33	34	1
6	15	15	0	33	34	1
7	15	14	1	28	34	6
8	15	14	1	28	33	5
9	14	14	0	26	32	6
10	14	14	0	24	31	7
11	14	14	0	23	31	8
12	13	14	1	22	30	8
13	13	14	1	21	27	6
14	12	13	1	18	25	7
15	12	13	1	17	25	8
16	8	11	3	8	15	7
Totals	221	228	7	421	499	78
Median	15	14	1	28	33	5
Average	13.8	14.2	.4	26.3	31.1	4.8
Range	8	5	3	29	25	4
Pupils ave. and above.	11	6	5	8	9	1

younger group had a median score of fifteen points, whereas

the older group had a median score of fourteen. The average score of the older group was 14.2 points and that of the younger group was 13.8. The slight difference of .4 favored the older group. The variation in range shows a high score of sixteen points for both groups and a low of eight points for the younger group and eleven for the older. The younger group had eleven pupils who were above their group average, and the older group had six.

The "numbers" test had only one pair of individual scores which were equal. In all other pairs the older group excelled. The total advantage was seventy-eight points. The older group excelled in all items compared. Median scores of thirty-three and twenty-eight show a difference of five points, average scores of 31.1 and 26.3 show a difference of 4.8 points, and the number of pupils who were average or above show a difference of one point. The variation in scores from highest to lowest shows a high of thirty-seven and a low of eight for the younger group, and a high of forty and a low of fifteen for the older group.

The six components of the Metropolitan Readiness Test total 1527 points for the older group and 1391 points for the younger group. The difference of 136 points was in favor of the older group. When individual scores were arranged from highest to lowest and the two groups compared, the results showed thirty-one pairs of equal scores, nine pairs in which the younger group had higher scores, and fifty-six pairs in which the older had higher scores.

Table 6 shows the number of times each group excelled in median and average scores, range in scores, and number of pupils who were average or above. The older group had a higher median score in four of the six components of the Metropolitan Readiness Test, the younger group in one component, and both groups were equal in one component. The older group had a higher average score in five components and the younger group in one. In five components the range showed less variation in scores made by the older group and in one component the two groups were equal. In four components the older group had more pupils who were above average, in one component the younger group had more pupils who were above average, and in one component the two groups were equal.

TABLE 6

A SUMMARY COMPARISON OF TWO AGE GROUPS OF CHILDREN AS REVEALED BY THE METROPOLITAN READINESS TESTS

Advantage	Median	Average	Range	No. Pupils Ave.& Over
Equal	1	0	1	1
Younger group	1	1	0	1
Older group	4	5	5	4

Tables 3 through 6 would seem to indicate that the older group was slightly better qualified to learn first-grade skills than the younger group. However, the difference in

comparison of scores was so small that, other things being equal, the younger group would not be handicapped any more than the older group as far as learning first-grade skills was concerned.

Table 7 is concerned with a comparison of the intelligence quotients of two age-groups of first-grade children as revealed by the Kuhlmann-Anderson Tests, First Grade, Second Semester. The results are arranged in descending order. Individual quotients, medians, averages, and range in quotients are compared.

Mental test ratings are useful as an indication of status attained by the child in one type of development. Used in association with other data, they have value.

Test results in Table 7 reveal that the younger group made higher intelligence quotients than did the older group. The greatest difference in individual pairs was fourteen points and the least was two points. The median of the younger group was 106 points and that of the older group was ninety-nine points. The difference of seven points was in favor of the younger group. The average intelligence quotients were 104 and ninety-nine, younger and older respectively. The variation in range from a high of 112 to a low of ninety-eight for the younger group, and from 110 to eighty-four for the older group shows a difference of twelve points in the range of the two groups.

Table 7 would seem to indicate that the younger group had some advantage over the older group as far as intelligence

TABLE 7

A COMPARISON OF INTELLIGENCE QUOTIENTS OF TWO AGE GROUPS OF CHILDREN AS REVEALED BY THE KUHLMANN-ANDERSON TESTS

Pupil Rank	Intelligence Quotients		
	Younger Group	Older Group	Difference
1	112	110	2
2	111	107	4
3	110	105	5
4	108	103	5
5	107	102	5
6	106	101	5
7	106	100	6
8	106	99	7
9	105	98	7
10	102	97	5
11	102	97	5
12	100	97	3
13	100	95	5
14	99	94	5
15	98	92	6
16	98	84	14
Median	106	99	7
Average	104	99	5
Range	14	26	12

was concerned. However, the intelligence quotients of the brighter children in both groups may have been limited somewhat by the following factor in the test construction:

> Maximum scores are most likely to appear in the case of the Grade I booklets. Therefore the ability of the most superior children in this grade will not be exhausted by these booklets to the extent that will be true for the superior children in grades above this.[5]

[5] F. Kuhlmann, and Rose Anderson, Kuhlmann-Anderson Tests, Manual of Directions, p. 6.

Emotional Development

The preceding paragraphs were concerned with comparisons of the two groups on the basis of physical and mental development. These are parts of a number of conditions which must be satisfied before success in school activities can be expected. Another important condition which must be considered is the child's emotional well-being. To what extent is he adjusting to the problems and conditions which confront him? Is he developing a normal, happy, and socially effective personality? Such problems must be a chief concern of the teacher if the child succeeds in first-year activities.

> When a teacher has. . . evidence of a child's characteristic modes of response in a variety of situations which vitally affect him as an individual or as a member of a group, she can use this more complete picture of his personality to guide him to better personal and social adjustment. . . . The individual's ability and past achievements are always an inevitable part of his current attempts to deal with problems intelligently.[6]

Tables 8 and 9 are concerned with comparisons of test results of two age groups of children in the California Test of Personality, Primary Series, Form A. The test is divided into two sections, self and social adjustment.

> The purpose of section 1 is to indicate how the pupil thinks and feels about himself, his self-reliance, his estimate of his own worth, his sense of personal freedom, and his feeling of belonging. In this section the pupil also reveals certain withdrawing tendencies which he may possess. Section two consists of social

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[6] Louis P. Thorpe, Willis W. Clark, Ernest W. Tieg, California Test of Personality, Primary Series, Form A, Manual of Directions, p. 1.

> adjustment components. Its purpose is to show how the pupil functions as a social being, his social skills, his freedom from anti-social tendencies, and his family, school, and community relationships.[7]

The pupil's responses are interpreted with respect to percentile norms which are provided in the Manual of Instructions.

Table 8 lists in descending order the individual percentile rank of each child in each group in self-adjustment, social adjustment, and total adjustment. A comparison of percentile ranks is made and the number of pupils who were average or above is shown. Pairs of percentile ranks in self-adjustment show four pairs with equal ranks, two pairs in which the younger group excelled with a total of fifteen points and ten pairs in which the older group excelled with a total of 119 points. The median percentile rank of the younger group was located at seventy-five percentile and that of the older group was located at sixty-five percentile. The median of the younger group was ten points above that of the older group. The older group had an advantage of 6.4 points in average percentile rank which was located at sixty-two, whereas that of the younger group was located at 55.6. A variation in range of eighty-four points with a high located at ninety-nine percentile and a low located at fifteen was the same for both groups. Nine pupils in the younger group and eight in the older were above average.

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[7] Ibid., p. 2.

TABLE 8

A COMPARISON OF TWO AGE GROUPS OF CHILDREN IN SELF, SOCIAL, AND TOTAL ADJUSTMENT AS REVEALED BY THE CALIFORNIA TEST OF PERSONALITY PRIMARY SERIES, FORM A

Pupil Rank	Self Adj.			Social Adj.			Total Adj.		
	Young Group	Older Group	Diff.	Young Group	Older Group	Diff.	Young Group	Older Group	Diff.
1	99	99	0	99	99	0	99	99	0
2	95	99	4	99	99	0	99	99	0
3	85	95	10	95	99	4	95	99	4
4	75	95	20	95	99	4	90	99	9
5	75	95	20	95	99	4	90	95	5
6	75	90	15	95	99	4	90	95	5
7	75	85	10	95	95	0	85	90	5
8	75	65	10	90	95	5	85	85	0
9	60	60	0	90	90	0	85	80	5
10	45	55	10	90	85	5	70	65	5
11	30	50	20	55	70	15	40	60	20
12	30	30	0	55	65	10	35	55	20
13	25	20	5	35	60	25	30	45	15
14	15	20	5	30	55	25	30	35	5
15	15	20	5	30	50	20	25	30	5
16	15	15	0	30	15	15	25	20	5
Med.	75	65	10	90	95	5	85	85	0
Ave.	55.6	62	6.4	73.6	79.6	6	67	72	5
Range	84	84	0	69	84	15	74	79	5
Pupils ave.	9	8	1	10	10	0	10	9	1

Test scores in social adjustment show four pairs of equal percentile ranks, two pairs in which the younger group excelled with a total of twenty points, and ten pairs in which the older group excelled with a total of 116 points. The older group surpassed the younger in median percentile-rank by five points and in average percentile-rank by six

points. The high percentile-rank for each group was located at ninety-nine. The low percentile-ranks which were located at thirty for the younger and fifteen for the older show a difference of fifteen points in which the younger group had less variation. Each group had ten pupils who were above their group average.

Percentile ranks in total adjustment show three equal pairs, three pairs in which the younger group excelled with a total of fifteen points and ten pairs in which the older group excelled with a total of ninety-three points. Each group had a median percentile-rank of eighty-five. The average percentile-ranks were located at seventy-two and sixty-seven. The five-point difference was in favor of the older group. The variation in range shows that both groups had a high located at ninety-nine percentile. Low ranks located at twenty-five and twenty reveal that the younger group had less variation in range. Ten children in the younger group were above their group average of sixty-seven, and nine in the older group were above their group average of seventy-two.

A summary of differences which exist in the two groups as shown in Table 8 in self, social and total adjustment reveals: individual percentile ranks were, on the whole, higher for the older group. Ten pairs of scores were equal, eight pairs showed higher percentile-ranks for the younger group, and thirty pairs showed higher percentile-ranks for

the older group. Median ranks were equal in total adjustment, higher for the younger group in self-adjustment, and higher for the older group in social adjustment. The older group had higher average ranks in self, social, and total adjustment. The younger group had less variation in range in social and total adjustment and the two groups were equal in self-adjustment. The younger group had more pupils above average in self and total adjustment and the two groups were equal in social adjustment.

Table 9 shows a comparison in group scores in each component of the self- and social-adjustment tests. The older group had a slight advantage in all components of the self-adjustment test except one, namely, "self-reliance," in which the two groups were equal. The older group had an advantage of twenty-three points in the total scores of 583 and 560. Nine points in the component "a sense of personal freedom" was the greatest difference shown in any one component. The two groups had equal median scores in four components of the self-adjustment test. The older group excelled by one point in two components. Average scores were so nearly equal that the difference was negligible. The greatest difference in any component was .6 points.

Social adjustment shows total scores of 679 and 654 points in which the total of the older group exceeded that of the younger by twenty-four points. The two components, "social standards" and "school relations," in which the

TABLE 9

A COMPARISON OF GROUP SCORES IN EACH COMPONENT OF THE SELF- AND SOCIAL-ADJUSTMENT TESTS

Components	Total Scores			Median Scores			Average Scores		
	Young Group	Older Group	Diff.	Young Group	Older Group	Diff.	Young Group	Older Group	Diff.
Self adjustment	560	583	23	37	39	2	35	36.4	1.4
Self-reliance	95	95	0	6	6	0	5.9	5.9	0
Sense of personal worth	90	96	6	7	7	0	5.6	6	.4
Sense of personal freedom	98	107	9	6	7	1	6.1	6.7	.6
Feeling of belonging	97	102	5	6	7	1	6	6.4	.4
Withdrawing tendencies (Fdm.)*	98	100	2	7	7	0	6.1	6.3	.2
Nervous symptoms (Fdm.)*	82	83	1	5	5	0	5	5.1	.1
Social adjustments	654	678	24	44	45	1	40.9	42.4	1.5
Social standards	112	119	7	8	8	0	7	7.4	.4
Social skills	112	116	4	7	8	1	7	7.2	.2
Anti-social tendencies (Fdm.)*	104	108	4	7	8	1	6.5	6.7	.2
Family relations	106	109	3	7	8	1	6.6	6.8	.2
School relations	113	120	7	8	8	0	7	7.5	.5
Community relations	107	106	1	7	7	0	6.7	6.6	.1
Total Adjustment	1214	1261	47	83	84	1	75.8	78.8	3

*Freedom from

scores of the older group exceeded those of the younger by seven points, show the greatest difference in scores in any one component. Three components of the social-adjustment test had equal median scores for both groups. The three remaining components show a difference of one point each in which the older group excelled. The difference in average scores in any one component was not greater than .5 points.

The total scores in self and social adjustment of 1261 and 1214 points show a difference of forty-seven points in which the older group excelled. The median score of eighty-four points for the older group was one point higher than that for the younger group. The average score of 78.8 points for the older group was three points higher than that for the younger group.

Tables 8 and 9 would seem to indicate that the older group was slightly better adjusted than the younger group, but the difference in the two groups was so small that the younger group would not appear to be seriously handicapped.

Tables 10, 11, and 12 are concerned with scores in the Behavior Rating Schedules by Haggerty, Olson, and Wickman. The behavior rating schedule is divided into two parts, Schedule A and Schedule B.

> Behavior Problem Record, Schedule A is a list of behavior problems which have been listed on the schedule in order of their frequency, as reported for a group of elementary school children. . . . The frequency of occurrence of each problem determines the rating assigned. Each problem and each level of occurrence have been assigned a statistical weighting based on seriousness

> and frequency. The score for a child is the sum of the weightings for the problems recorded. High scores indicate the presence of numerous and serious problems, while low scores indicate the presence of few and less serious problems.
>
> The Behavior Rating, Schedule B, consists of a grafic rating scale for each of thirty-five intellectual, physical, social, and emotional traits. . . . Taking into account the relative nature of the measures, high scores represent undesirable deviations, and low scores desirable deviations from the typical behavior of a group of children.[8]

The individual scores made by two age groups of first grade children in Schedules A and B are recorded in Table 10. The scores are arranged in descending order. High scores indicate the presence of a greater number of behavior problems and are, for that reason, undesirable. Schedule A reveals a high score of 120 points for the younger group and a low of four points, a variation in range of 116 points.

The older group had a high score of 92 points and a low of four points, a variation in range of eighty-eight points. The median score of the younger group was forty and that of the older group was fifty-five. The fifteen-point difference was in favor of the younger group. Average scores of 46.5 and 49.9 show a 3.4-point advantage for the younger group. Individual scores show one equal pair, twelve pairs in which the younger group had lower scores, and three pairs in which the older group had lower scores. Total scores in Schedule A were 798 and 744 points. The younger group had a fifty-four-point advantage because they had the lower total score.

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[8] M. E. Haggerty, W. C. Olson, E. K. Wickman, Haggerty-Olson-Wickman Behavior Rating Schedules, pp. 3,4.

TABLE 10

A COMPARISON OF THE BEHAVIOR PROBLEMS OF TWO AGE GROUPS OF CHILDREN AS REVEALED BY THE HAGGERTY-OLSON-WICKMAN BEHAVIOR RATING SCHEDULES

Pupil Rank	Schedule A			Schedule B		
	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.
1	120	92	28	103	132	29
2	98	90	8	92	89	3
3	77	73	4	88	88	0
4	68	69	1	82	84	2
5	65	68	3	81	80	1
6	61	68	7	74	78	4
7	59	65	6	71	73	2
8	40	55	15	69	72	3
9	30	40	10	68	70	2
10	28	38	10	58	62	4
11	24	34	10	57	59	2
12	24	32	8	54	56	2
13	20	26	6	53	56	3
14	16	22	6	49	54	5
15	10	22	12	48	51	3
16	4	4	0	46	51	5
Total	744	798	54	1093	1155	62
Median	40	55	15	69	72	3
Average	46.5	49.9	3.4	68.3	72.1	3.8
Range	116	88	26	57	81	24
Pupils ave. or above	7	8	1	8	7	1

Schedule B shows a variation in range from a high of 103 points to a low of forty-six for the younger group, and from a high of 132 points to a low of fifty-one for the older group. The median score of the younger group was sixty-nine

and that of the older group was seventy-two. The younger group excelled by three points. Average scores of 68.3 points and 72.1 points (younger and older, respectively) show that the score of the younger group exceeded that of the older group 3.8 points. One pair of individual scores was equal, thirteen pairs show lower scores for the younger group, and two pairs show lower scores for the older group. Total scores in Schedule B were 1093 points for the younger group and 1155 points for the older.

Table 11 lists total scores in the behavior problems mentioned in Schedule A. Low scores are interpreted as better scores. Both groups scored zero on three of the behavior problems, "obscene notes," "truancy," and "sex offences."

TABLE 11

TOTAL SCORES OF TWO AGE GROUPS OF FIRST-GRADE CHILDREN AS REVEALED BY THE HAGGERTY-OLSON-WICKMAN BEHAVIOR RATING SCHEDULE A

Behavior Problem	Younger Group	Older Group	Diff.
Disinterest in school work	50	82	32
Cheating	77	83	6
Unnecessary tardiness	41	0	41
Lying	61	75	14
Defiance of discipline	21	22	1
Marked overactivity	62	50	12
Unpopular with children	58	42	6
Temper outbursts	22	8	14
Bullying	68	60	8
Speech difficulties	26	28	2
Imaginative lying	162	168	6
Sex offences	0	0	0
Stealing	96	180	84
Truancy	0	0	0
Obscene notes, talk	0	0	0

Both made their highest scores on "imaginative lying." The older group had a score six points higher than the younger group. The greatest difference in scores was on "stealing." The older group had a score of 198 points and the younger ninety-six, a difference of eighty-four points. The older group made noticeably higher scores on "disinterest in school work," "lying," and "marked overactivity." The younger group made higher scores on "unnecessary tardiness" and "temper outbursts."

Table 12 is concerned with traits listed in Schedule B. The scores show what each group made on physical, intellectual, social, and emotional traits. The younger group made

TABLE 12

TOTAL SCORES OF TWO AGE GROUPS OF FIRST-GRADE CHILDREN AS REVEALED BY HAGGERTY-OLSON-WICKMAN BEHAVIOR RATING SCHEDULE B

Division	Younger Group	Older Group	Diff.
Intellectual traits	214	245	31
Physical traits	212	220	8
Social traits	338	363	25
Emotional traits	329	327	2
Total	1093	1155	62

lower scores on all traits except "emotional." There was a two-point difference on that trait. There was a difference of thirty-one points on "intellectual traits," eight on

"physical traits," and twenty-five on "social traits."

Tables 8 through 12 would seem to indicate that the older group was a little better adjusted as far as their attitudes about themselves and society were concerned. The difference was not great enough to give a substantial advantage to the older group. The behavior problems checked in Schedule A show that the younger group had some advantages. Schedule B shows a slight advantage in favor of the younger group who had lower scores on "intellectual," "physical," and "social traits," while the older group had a lower score on "emotional traits."

CHAPTER III

PROGRAM OF ACTIVITIES DESIGNED TO MEET THE NEEDS OF THESE GROUPS

The aim of the following activities was "to promote continuous growth in all children; . . . to bring about maximum development of every child in terms of his unique nature and needs."[1] The curriculum-building committee was aware of the fact that the learner reacts as a whole,(his physical, mental and emotional reactions enter into the learning process) and that his school experiences must begin where the child is and lead him into richer experiences, if they are to be meaningful.

The purpose of Chapter II was to compare the physical, mental, and emotional development of two age groups of children upon entering the first grade. Physical examinations, behavior rating schedules, readiness, personality, and intelligence tests were used for this purpose. Other information about the pupils' abilities, past experiences, attitudes, and behavior difficulties was obtained by means of parent-teacher conferences, home visitation, observation of the children in their work and play, and informal conversations with the children themselves. These means revealed certain needs,

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[1]Paul Witty, Education in Modern Living, p. v.

interests, desires, play preferences, favorite activities, fears, and family and neighborhood relations.

Five of the basic needs generally accepted by psychologists as common to all individuals were considered as the activities were planned, namely: (1) physical well-being, (2) a feeling of belonging, (3) a desire to be loved and wanted, (4) a desire to make a worthy contribution to his group, and (5) a desire for self-esteem. An effort was made to provide opportunities for experiences which would help the children grow in an appreciation of some democratic principles such as: a belief in the worth and dignity of the individual, a belief in the importance of creative expression and critical thinking, and a belief in cooperative planning as a means of improving life.[2] The nature of the learner at the age of six, as portrayed by Arnold Gesell, served as a reminder that first-grade children have singular characteristics which should be respected, if maximum growth is to be anticipated. Some of these characteristics are:

1. The six year old is in a period of indecision. He goes from one extreme to the other; home versus school, self versus group, fine motor versus gross motor movement. He has a tendency to reversals.
2. It is a period of dramatic play.
3. It is a period of great curiosity.
4. Six is an incessant talker.
5. He collects odds and ends rather sporadically.
6. He is so eager for new experiences that his manner is likely to be hasty and sketchy.

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[2]Florence Stratemeyer, H. L. Forkner, M. C. McKim, Developing a Curriculum for Modern Living, pp. 44, 45.

7. He is inexpert in handling human relationships. He wants to win, to be first, but he wants to be loved best. He is the center of his own universe.[3]

Activities for the first few weeks of school were centered around the child's need to become oriented to school life. He was confronted with multitudes of problems almost from the time he entered on the first day. Where could he get a drink or find a rest room? Where were the rooms of his brothers or sisters? Who would help him find the cafeteria? How would he know which bus to ride? These and similar questions initiated a tour of the building and the playground. Others followed as the need arose until the children felt that they were in familiar surroundings. Needless to say the first tour showed the necessity of group discussions and plans and of formulating a few rules to govern future trips.

The children were curious about their classmates and the other strangers whom they saw about the building. This provided an opportunity for introducing helpers who made school living pleasant for them: the principal, other teachers, the custodian, the cafeteria workers, bus drivers, and the policeman who helped them cross the street. As they became acquainted with their classmates they learned how other children got to school and how to give correct information about themselves: their ages, street addresses, telephone numbers, parents' names and occupations.

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[3]Arnold Gesell, The Child From Five to Ten, pp.13,88-114.

The lunch hour had its problems which concerned health, etiquette, and money: how to take turns, put trays away, pay for lunches, why wash the hands, talk in soft voices and have a quiet period following the lunch hour.

Supervised play periods provided one of the best means of teaching fair play and consideration of others. The children had swings, slides, trick poles, and merry-go-rounds to play on, but they were also taught group games, games with balls, and jump-the-rope.

Other problems which confronted the children in the early period of school life were those which concerned health: cleanliness and neatness, the use of the handkerchief, the care of colds, the importance of staying at home when ill, how to dress properly in different kinds of weather, the importance of fresh air and regulated temperature, and the identification and care of wraps; those which concerned work habits; how to work so as not to disturb others; and those which concerned orderliness: why adjust windows and shades, pick up paper, put work materials away properly, and keep desks straight.

All the learning manifested in language, art, numbers, writing, reading, and appreciations grew out of the efforts of the children to solve their orientation problems. Group plans, discussions, selections, organizations, dramatizations, excursions, games, stories, films and songs were some of the activities which promoted these learnings.

What were some of the outcomes of such experiences? The clock became more meaningful as the children observed the time for certain activities. The thermometer, calendar, days of the week and months of the year grew in significance. Numbers on the scales and height and weight charts provided information about themselves and their friends. The yardstick became a familiar item of measurement. Money and money-symbol problems were often recurring as they paid for lunches and supplies. Counting in various room situations increased their desire to work with numbers. They learned to recognize the symbols for their names and those of their classmates, labels, greetings, "stop" and speed limit signs, and simple directions as "go," "Come" and "run." They identified experience charts as stories they had told, and learned the left-to-right eye movement by "reading" these stories. Their ability to express themselves more adequately increased as opportunities in oral language increased, and they became more proficient at listening while others talked. Their sensitivity to social amenities developed as they shared materials, experiences and responsibilities.

The early problems and experiences described in the preceding paragraphs recurred throughout the year, and as the children grew their rules of conduct were in constant need of revision. Later activities were designed to broaden their experiences, and these activities will be described in the following paragraphs. They were centered around the child's

interest in home, parties, pets, fire prevention, Halloween, and the traditional Thanksgiving season.

As the children became acquainted they observed that they came from three general areas: farm, oil field, and town. This knowledge provoked discussions about their homes: how they were alike or different, how many members in the family, kinds of work mothers and fathers did, what the children did to help the family, and the kinds of pets they owned. These discussions were guided toward the Scott, Foresman approach to reading as the "big book" was introduced in this period. Their first two school parties were also planned in this period. The first was a "get acquainted" party for the mothers, and the second was a birthday party for all children who had birthdays since school started. Three such parties during the year provided for all their birthdays.

Fire prevention week provided a time for learning about fire safety: what fire hazards existed at school, at home, and at recreation centers, and what they could do to correct them. Their interest and enthusiasm resulted in the removal of some of the fire hazards in the homes and community.

Halloween had always been a big event in the Woodrow Wilson School. It had been the one money-making event of the year. The Parent Teachers Association sponsored a carnival where such attractions as a chili supper, picture shows, fortune telling, and a fishing pond were featured. Problems which confronted the children as they prepared for this

event were many. They included those associated with decorating and costuming, allowances and prices of attractions, time and place of events, and behavior on such occasions. "Trick-or-treat" was another Halloween observance which required planning for socially acceptable results.

Thanksgiving brought with it opportunities for developing gratefulness and certain appreciations. It was a time when special emphasis was placed on helping the children see the things for which they had to be thankful. It was a time for discussing harvest as a preparation for winter (both for man and animal). It also meant vacation time for many.

Some experiences which occurred in this period of study and were common throughout the year were: listening to stories read and told, telling stories, group and individual planning of events, discussions, choosing workers for the execution of plans, dramatizations, seeing films, playing records, singing, finding appropriate pictures, bringing contributions from home, and making, illustrating, and reading experience charts. These experiences common to all periods of study will not be mentioned further. Experiences peculiar to certain phases of study were those which pertained to Fire Prevention Week: fire drills, a visit from the fire chief, a ride on the fire truck, a visit to the fire station, making a check list of fire hazards with the idea of trying to get them removed, learning how to report a fire, and seeing fourth and fifth-grade fire posters. Halloween offered experiences in

mask-making and parading, making a jack-o-lantern, planning a budget for carnival spending, and bringing and sorting articles for the fish pond. "Thank you" notes were sent to parents or friends at Thanksgiving time. A cheer basket was taken to a sick friend. Cocoons were brought to school to keep through the winter, old birds' nests were collected, and an excursion into the country gave the children an opportunity to find signs of fall.

Some of the outcomes of this period of study were noticeable in oral language. The children made progress in talking so that all could hear, in talking when no one else was talking, in observing social courtesies, taking part in discussions, making introductions, and telling stories in sequence. They learned to write their own names, grade, and the name of their school. They wrote "thank you" notes, invitations, and titles for stories and pictures. Their ability to work neatly with crayolas, paste, and scissors improved. They began to express themselves freely with clay, paper, water colors, finger paints, sewing and construction work. They recognized the colors and some of their corresponding symbols. Number experiences through the use of objects increased their understanding of numbers. They became aware of sizes, shapes and amounts, halves and wholes, quarts, dozens, half-dozens and pounds. They learned numbers in sequence and how to write them through ten. They began to develop an understanding of ordinals. Their reading progressed to the

point where they could recognize likenesses and differences in words, pictures, and objects. They matched sentences, phrases and words, read experience charts and some of the pre-primers to the state adopted texts.

The third period of study was centered around the children's interest in Christmas, New Year, snow, and winter sports. An effort was made to help them appreciate the needs of others and realize the joy of giving. Some of their problems were: selecting gifts with the money they had to spend, finding appropriate gifts for different people, making something at school for mother and finding a way to get it wrapped, learning something of the durability of toys, their care and safe usage. Toys and games best suited for outdoor play and those appropriate for indoor play were discussed. Preparation for "toy day" was the first big problem following the Christmas vacation. A day was chosen and plans were made. Each child brought at least one toy which he wished to share with his classmates. Some other problems associated with the winter season were: suitability of dress for outdoor weather, methods of heating homes, how some animals find food and stay warm, and safety on icy streets and playgrounds.

Some activities which accompanied this period of study were: making decorations and decorating a tree, planning a Christmas party, making gifts for the mothers, participating in the "white Christmas" (the entire school brought

imperishable foods to be distributed to the community's needy families), making Christmas cards and planning and enjoying "toy day."

By the end of the study the children could write their full names and simple sentences in a legible manner. They had learned something of the use of capital letters and periods in their relation to sentences. They had a simple arithmetical vocabulary, knew number symbols, number pictures, and concrete number patterns. Simple addition combinations had been introduced by means of concrete number patterns and pictures. Most of the children could count and write to one hundred by ones and find pages in books by their numbers. Some of the reading skills in which they had made progress, other than those previously mentioned, were: care in the handling of books, use of the table of contents in books, reading to find the answers to questions, reading some of the stories in primers, and recognizing the differences and likenesses in sounds of letters and words.

The fourth period of study continued the work on health and safety in winter weather. February was considered an appropriate time to emphasize qualities of good citizenship. What good citizens do at home, at school, and in the community were discussed. Thrift as it applies to food, clothes, toys, supplies, and money; and good manners at home, at school, in public assemblies, and on the streets were included in the study. Washington's birthday and Valentine

Day were special days in this period of study. The children learned that Washington was the first leader of the country. A knowledge of the characteristics of a good leader and an appreciation of their country were aims of this study. Valentine week was observed as a special time for sending greetings to people whom they loved. Some of the problems confronting them were: how many valentines to buy, how much to pay, how many can be bought for a certain amount of money, choosing, making a list of friends' names, preparing some for mailing and choosing materials for making others.

Some activities of this period were: preparing a program and presenting it to two other first-grade rooms, buying and making valentines, making valentine containers, and going on a visit to the post office.

The fifth period of study was centered around the children's interest in spring as a period of awakening. They watched growing plants, budding trees, and changing colors. They noticed the disappearance of ice and snow. They considered nature's awakening in the sounds they heard and the colors they saw. Some of the children told of experiences with new baby animals at their homes. The care of young animals and pets in general composed a part of class discussions. The problem of caring for an old hen which had been brought to school for the purpose of hatching eggs was presented. How eggs hatch, how the mother keeps them warm, how she cares for the baby chicks, how they eat and drink, what they eat, and

other such problems grew out of their observations. A trip to the hatchery, a visit to a home to see baby rabbits, and a visit to the park to look for signs of spring were some of the activities which accompanied this study. Easter was the holiday of interest which came at this time. The children brought eggs to school to color, and planned an Easter egg hunt. The four-day holiday provided opportunities for telling the class of their experiences during that time.

The last study period was centered around farm activities, Mother's Day, the use of the city library, preparation for vacation time, and summer activities.

The study of the farm aroused questions about the use of things which come from the farm, useful farm animals, pets farm children have, work farm families do, how farm work differs from city work, and how country noises differ from city noises. Activities connected with the farm study included a visit to a farm, bringing materials made from farm products, checking the home for farm products, bringing some city pets to school to see how they differ from farm pets in size and care.

Mother's Day was used as a time to show special appreciation to mothers. The children tried to think of ways in which they could be more helpful in the home. As an activity for this occasion they prepared a program and presented it to mothers. They also made a simple gift and card.

A trip to the city library proposed to create in the

children a desire for summer reading. They learned where the library was located, whom to ask for help in making selections of books, and where to find books for their age groups. They learned the process of getting a library card, how to tell about returning books, the importance of taking care of borrowed books and the importance of promptness in returning them.

The approaching summer brought with it discussions from the children about vacations and possible ways of spending the summer. They were enthusiastic over trips. Where they planned to go, means of getting there, and whom they planned to visit were some of the things they discussed together. Suggestions were made as to how they could enjoy the summer at home. The culminating activity for the year was "open house" for a group of children who would be old enough to start to school the following September.

As a result of these and other experiences, the children learned:

1. To write correctly three and four-line stories of their own composition.

2. To illustrate stories, poems and experiences.

3. To know the names of the letters of the alphabet and how to write them.

4. To copy words and sentences from charts and blackboard.

5. To know some uses of capital letters, period and question mark.

6. To spell some of the words needed in first-grade activities.

7. To participate in group discussions and in working out group compositions.

8. To talk in complete sentences.

9. To know the correct responses to ordinary language situations.

10. To appreciate stories, poems, and pictures.

11. To read stories in primers and some first-grade readers.

12. To find needed information in readers and primers.

13. To read silently and independently at the library table.

14. To follow simple written instructions.

15. To read orally with expression.

16. To attack new words by means of simple phonetic analysis.

17. To count and write to one hundred by ones and tens.

18. To understand the meaning of subtraction and addition combinations through six.

19. To know something of the meaning of one-half and one-fourth as parts of wholes.

20. To use simple measurements as inch, foot, yard, pint, quart, pound, dozen, week, month, year, and season.

21. To have some understanding of the calendar, scales, thermometer, and clock.

22. To understand the meaning of some money symbols and their values.

23. To know how to write dates.

24. To understand words denoting size.

CHAPTER IV

COMPARISON OF ACADEMIC ACHIEVEMENT AND EMOTIONAL GROWTH ATTAINED IN AN EIGHT-MONTH PERIOD

Chapter II proposed to determine the developmental status of two age groups of children upon entering the first grade. Chapter III outlined a program of study designed to meet the needs of these two groups. Chapter IV is concerned with the procedure used to measure the achievement in reading and numbers as revealed by the Metropolitan Achievement Tests, Primary 1 Battery: Form R and to ascertain the changes in attitudes and behavior as revealed by the California Tests of Personality, Primary Series, Form B and the Haggerty-Olson-Wickman Behavior Rating Schedules.

Academic Achievement

Table 13 records the achievement in reading of the two age groups. The reading test is divided into three sub-tests, namely, "word picture," "word recognition," and "word meaning." Individual grade-equivalents for each sub-test and averages for the three sub-tests are compared, and the differences shown. Grade-equivalents are recorded in descending order throughout.

The "word picture" test shows that the first five grade-equivalents of the younger group exceeded the first five of the older group. With the exception of one equal pair, the

TABLE 13

COMPARISON OF GRADE EQUIVALENTS IN READING OF TWO AGE GROUPS OF CHILDREN AS REVEALED BY THE METROPOLITAN ACHIEVEMENT TEST, PRIMARY 1 BATTERY: FORM R

Reading												
Word Picture			Word Recognition			Word Meaning			Average for the Three Reading tests			
Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.	
3.3	2.9	.4	3.4	3.0	.4	4.1	4.7	.6	3.4	3.5	.1	
3.1	2.8	.3	3.4	3.0	.4	3.9	3.3	.6	3.4	3.0	.4	
2.8	2.7	.1	3.4	3.0	.4	3.5	3.0	.5	3.2	2.7	.5	
2.8	2.7	.1	3.4	2.7	.7	3.5	2.9	.6	3.2	2.7	.5	
2.7	2.6	.1	3.4	2.5	.9	3.4	2.9	.5	3.1	2.7	.4	
2.6	2.6	.0	3.0	2.5	.5	3.1	2.9	.2	3.0	2.6	.4	
2.6	2.6	.1	3.0	2.4	.6	3.1	2.8	.3	3.0	2.6	.4	
2.4	2.5	.1	2.5	2.3	.2	3.0	2.7	.3	2.5	2.6	.1	
2.3	2.5	.2	2.4	2.3	.1	2.7	2.6	.1	2.5	2.6	.1	
2.2	2.5	.3	2.4	2.3	.1	2.5	2.4	.1	2.3	2.4	.1	
2.1	2.5	.4	2.3	2.1	.2	2.4	2.3	.1	2.2	2.3	.1	
2.1	2.4	.3	2.2	2.1	.1	2.3	2.2	.1	2.2	2.2	.0	
2.1	2.1	.0	2.2	2.0	.2	2.3	2.2	.1	2.2	2.1	.1	
2.1	2.1	.0	2.1	2.0	.1	2.2	2.1	.1	2.2	2.1	.1	
2.1	2.0	.1	2.0	2.0	.0	2.1	1.5	.6	2.1	1.8	.3	
2.0	2.0	.0	2.0	2.0	.0	2.0	1.4	.6	2.1	1.6	.5	

older group excelled in the next six. Both groups were equal in the three lower grade-equivalents. The median for the younger group was 2.4 and for the older group 2.5. Both groups had an average of 2.5. The low grade-equivalent for each group was 2.0. The younger group had a high of 3.3 and the older 2.9.

In the second sub-test, "word recognition," the younger group excelled in all pairs except the last two. The two groups were equal in those. The greatest difference in any one pair was .9. Median grade-equivalents of 2.5 and 2.3, younger and older respectively, show a difference of .2 point in which the younger group had the advantage. Average grade-equivalents show a .3 advantage for the younger group. Both groups had a low grade-equivalent of 2.0. The high for the younger group was 3.4 and for the older 3.0.

The third sub-test, "word meaning," reveals that, with one exception, the younger group excelled in all grade-equivalents. The grade-equivalent of the high ranking pupil in the older group exceeded that of the high-ranking pupil in the younger group by .6 point. The median of the younger group was 3.0 and that of the older was 2.7. Averages were 2.9 for the younger group and 2.6 for the older. The lowest grade-equivalent of the older group was 1.4 and that of the younger group was 2.0.

Average grade-equivalents for the three sub-tests reveal that those of the younger group exceeded those of the older in the first seven pairs, with the exception of the first.

pair, and the older group excelled in the next four. The younger group again had higher grade-equivalents in the last five. The median for the younger group was 2.5 and for the older 2.6. Averages of 2.7 and 2.5 show a difference of .2 in favor of the younger group.

The reading test would seem to indicate that, on the whole, the younger group made higher achievement scores. They were, in almost every case, superior on the higher level of scores. This higher level usually showed the greatest difference in scores. When the older group excelled it was most often on the middle level. The least difference in scores usually occurred on this level. Equal scores were most often found on the lower level.

Table 14 records the achievement made in numbers by the two age groups and the individual average scores in the complete Metropolitan Achievement Test. In the first five pairs of grade-equivalents there were two equal pairs and three in which the younger group excelled. The older group excelled in the remaining eleven pairs. The greatest difference in any one pair was .6 found in the last pair. The high-ranking grade-equivalent for each group was 4.1. The low for the younger group was 1.5 and for the older 2.1. Median grade-equivalents show a difference of .3 and average grade-equivalents show a difference of .2, both in favor of the older group. All children in the older group were above the norm of 1.8 for this test. One child in the younger group was

below the norm, three were at the norm, and the remaining twelve were above.

TABLE 14

COMPARISON OF GRADE-EQUIVALENTS IN NUMBERS OF TWO AGE GROUPS OF CHILDREN AS REVEALED BY THE METROPOLITAN ACHIEVEMENT TEST PRIMARY I BATTERY: FORM R

Numbers			Average for Reading and Numbers		
Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.
4.1	4.1	.0	3.5	3.4	.1
3.6	3.3	.3	3.3	3.1	.2
3.1	3.1	.0	3.3	2.8	.5
3.0	2.9	.1	3.2	2.8	.4
3.0	2.7	.3	3.1	2.8	.3
2.6	2.7	.1	2.8	2.7	.1
2.4	2.7	.3	2.8	2.6	.2
2.3	2.6	.3	2.6	2.6	.0
2.2	2.6	.4	2.5	2.5	.0
2.1	2.5	.4	2.3	2.5	.2
2.0	2.4	.4	2.2	2.4	.2
1.9	2.3	.4	2.2	2.3	.1
1.8	2.2	.4	2.1	2.2	.1
1.8	2.2	.4	2.1	2.1	.0
1.8	2.1	.3	2.0	1.9	.1
1.5	2.1	.6	2.0	1.9	.1
Med 2.3	2.6	.3	2.6	2.6	0
Ave 2.5	2.7	.2	2.6	2.5	.1

Average grade-equivalents for the complete test show three pairs with equal grade-equivalents, nine pairs in which the younger group excelled, and four pairs in which the older group excelled. The greatest differences were in the higher grade-equivalents. The range from high to low was the same

for each group. A median grade-equivalent of 2.6 was the same for each group. The younger group had an average grade-equivalent of 2.6, while that of the older was 2.5.

Tables 13 and 14 seem to indicate that the younger group had some advantage in reading and total achievement, and the older group had the advantage in numbers.

Changes in Attitudes and Behavior

The California Tests of Personality, Primary Series, Form B, was used to determine changes in the attitudes of the two age groups of first-grade children, and their behavior problems were checked on the Haggerty-Olson-Wickman Behavior Rating Schedules.

The personality test is divided into two parts, self and social adjustment. The purpose of the self-adjustment test is to determine how the child feels about himself. The purpose of the social-adjustment test is to learn of his social skills and anti-social tendencies, and to learn of his home, school,and community relationships.

Table 15 shows individual percentile-ranks of the children in each group in self, social, and total adjustment.The scores are compared and the differences shown. Medians, averages, variations, and number of pupils above average are recorded.

The self-adjustment test shows one pair with equal percentile-ranks, eleven pairs in which the older group excelled with a total of 151 points and four pairs in which the younger

TABLE 15

A COMPARISON OF TWO AGE GROUPS OF CHILDREN IN SELF, SOCIAL, AND TOTAL ADJUSTMENT AS REVEALED BY THE CALIFORNIA TESTS OF PERSONALITY, PRIMARY SERIES, FORM B

Pupil Rank	Self-Adjustment			Social Adjustment			Total Adjustment		
	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.
1	99	99	0	95	99	4	99	99	0
2	95	99	4	95	95	0	95	99	4
3	90	99	9	90	95	5	90	95	5
4	85	99	14	90	95	5	85	95	10
5	85	99	14	80	90	10	80	95	15
6	85	95	10	80	80	0	75	95	20
7	75	95	20	80	80	0	75	95	20
8	70	95	25	70	75	5	70	85	15
9	60	80	20	65	65	0	70	65	5
10	45	60	15	60	30	30	70	50	20
11	45	55	10	45	25	20	40	40	0
12	35	45	10	40	25	15	40	35	5
13	30	25	5	35	20	15	30	20	10
14	25	15	10	20	20	0	30	20	10
15	20	10	10	15	15	0	20	10	10
16	10	5	5	5	10	5	10	10	0
Med.	70	95	25	70	75	5	70	85	15
Ave.	59.6	67.2	7.6	60.3	57.4	2.9	61.1	63	1.9
Range	89	94	5	90	89	1	89	89	0
No. above ave.	9	9	0	9	9	0	10	9	1

group excelled with a total of thirty points. The median percentile-rank of the younger group was located at seventy percentile and that of the older group was located at ninety-five. The average percentile-rank of the older group was located at 67.2, whereas that of the younger group was located

at 59.6. The older group had an average 7.6 points higher than the younger group. Each group had a high percentile-rank of ninety-nine. The younger group had a low of ten and the older five. Each group had nine pupils above their group average.

The social-adjustment test reveals six pairs of equal percentile-ranks, six pairs in which the older group excelled with a total of thirty-four points and four pairs in which the younger group excelled with a total of eighty points. Median percentile-ranks of seventy-five and seventy show a difference of five points in favor of the older group. Average percentile-ranks of 60.3 and 57.4 show a difference of 2.9 in favor of the older group. The high percentile-rank for the younger group was located at ninety-five and the low was located at five, whereas the high for the older group was located at ninety-nine and the low at ten. Nine pupils in each group were above their group average.

Total adjustment of the two groups shows three pairs of scores in which the two groups were equal, seven pairs in which the older group excelled with a total of eighty-nine points and six pairs in which the younger group excelled with a total of sixty points. The median percentile-rank of the younger group was located at seventy and that of the older group was located at eighty-five. The difference of fifteen points was in favor of the older group. Average percentile-ranks showed a difference of only 1.9 points. The average

percentile-rank of the older group was located at sixty-three and that of the younger group was located at 61.1. Each group had a high of ninety-nine and a low of ten. Ten pupils in the younger group were above their group average and nine in the older group were above their group average.

Table 16 shows a comparison in group scores in each component of the self and social-adjustment tests. The older group scored higher in five components of the self-adjustment test with a total of thirty-one points. The younger group scored higher in one component (freedom from nervous symptoms) with a total of seven points. The difference in total scores of all components of the self-adjustment test was twenty-four points in favor of the older group.

The social adjustment test showed three components in which the older group scored higher with a total of nine points, two components in which the younger group was higher with a total of eighteen points, and one component (community relations) in which the two groups were equal. The difference of nine points in total scores of all components of the social adjustment test was in favor of the younger group. The total scores of self and social-adjustment were 1168 and 1183 points. The fifteen-point advantage was in favor of the older group.

Median scores in the self and social-adjustment tests showed no greater difference than one point in any one component. The slight advantage was in favor of the older

TABLE 16

A COMPARISON OF GROUP SCORES IN EACH COMPONENT OF THE SELF AND SOCIAL ADJUSTMENT TESTS

Components	Total Scores			Median Scores			Average Scores		
	Young Group	Older Group	Diff.	Young Group	Older Group	Diff.	Young Group	Older Group	Diff.
Self adjustment	571	595	24	38	43	5	35.7	37.1	1.4
Self-reliance	90	101	11	6	6	0	5.6	6.3	.7
Sense of personal worth	105	108	3	7	7	0	6.6	6.8	.2
Sense of personal freedom	98	106	8	7	8	1	6.1	6.6	.5
Feeling of belonging	103	106	3	7	8	1	6.4	6.6	.2
Withdrawing tendencies (Fdm)*	88	94	6	6	7	1	5.5	5.9	.4
Nervous symptoms (Fdm.)*	87	80	7	5	5	0	5.4	5	.4
Social adjustment	597	588	9	40	41	1	37.3	36.8	.5
Social standards	110	113	3	7	7	0	6.9	6.9	.0
Social skills	88	85	3	6	5	1	5.5	5.3	.2
Anti-social tendencies (Fdm.)*	101	86	15	7	7	0	6.3	5.4	.9
Family relations	87	92	5	6	7	1	5.4	5.8	.4
School relations	99	100	1	7	7	0	6.2	6.3	.1
Community Relations	112	112	0	7	8	1	7	7	.0
Total adjustment	1168	1183	15	..	..	.	73	73.9	.9

*Freedom from

group in all components except one. In six components the scores were equal.

The average scores in any one component of both tests showed no greater difference than .9. The slight advantage in self-adjustment was in favor of the older group in every component except one. The younger group had the advantage in two components of the social-adjustment test, the older group in two, and the two groups were equal in two. The averages in total scores of self and social-adjustment show a difference of only .9 point.

Tables 15 and 16 seem to indicate that the two groups were very nearly equal. The older group had some advantage in self and total adjustment. The younger group excelled in social adjustment by a few points.

Tables 17, 18, and 19 are concerned with scores in the Haggerty-Olson-Wickman Behavior Rating Schedules A and B. The scores are arranged in descending order. High scores indicate the presence of a greater number of behavior problems and are, for that reason, undesirable.

Table 17 shows a high score of 107 points for the younger group and seventy-eight for the older group. Each group had a low score of four points. The younger group had a total score fifty-nine points higher than the older group. The median score for the younger group was thirty-six and for the older group thirty-three. The difference of three points was in favor of the older group. The average scores of 36.8

TABLE 17

A COMPARISON OF THE BEHAVIOR PROBLEMS OF TWO AGE GROUPS OF CHILDREN AS REVEALED BY THE HAGGERTY-OLSON-WICKMAN BEHAVIOR RATING SCHEDULES

	Schedule A			Schedule B		
	Younger Group	Older Group	Diff.	Younger Group	Older Group	Diff.
Individual scores	107	78	29	88	122	34
	65	56	9	82	88	6
	61	56	5	82	79	3
	54	52	2	79	78	1
	53	50	3	78	77	1
	48	50	2	75	74	1
	45	39	6	66	68	2
	36	33	3	66	66	0
	28	22	6	56	60	4
	24	22	2	55	57	2
	20	18	2	54	55	1
	16	16	0	52	54	2
	12	14	2	51	54	3
	12	14	2	48	50	2
	4	6	2	46	49	3
	4	4	0	43	49	6
Total	589	530	59	1021	1080	59
Median	36	33	3	66	66	0
Average	36.8	33.1	3.7	63.8	67.5	3.7
Range	103	74	29	45	73	28
Pupils above ave.	7	7	0	8	7	1

and 33.1 show a difference of 3.7 points in which the older group had the lower score. Seven pupils in each group were above their group average. The individual scores show three equal pairs, ten pairs in which the older group had lower scores, and four pairs in which the younger group had lower.

Schedule B shows a range in scores of forty-five points for the younger group who had a high of eighty-eight and a low of forty-three. The older group had a high of 122 and a low of forty-nine, a seventy-three-point range. The greatest difference in any one pair of scores was thirty-four points. The younger group had the lower score. The difference in any other one pair was no greater than six points. One pair was equal, four pairs showed lower scores for the older group and eleven pairs showed lower scores for the younger group. The difference in total scores was fifty-nine points. The older group had a total score of 1080 points and the younger group had 1021 points. A median score of sixty-six points was the same for each group. Average scores show a difference of 3.7 points in favor of the younger group. The younger group had eight pupils above their group average and the older group had seven.

Table 18 shows the total scores on the behavior problems listed in Schedule A. Low scores are interpreted as better scores. Both groups had a score of zero on three of the problems, "sex offences," "truancy," and "obscene notes." Both made their highest score on "imaginative lying." The older group had a low score of four points on "unnecessary tardiness," and the younger group had a low score of twelve points on "temper outbursts." The greatest difference in scores was thirty-six points on "unpopular with children."

TABLE 18

TOTAL SCORES OF TWO AGE GROUPS OF FIRST-GRADE CHILDREN AS REVEALED BY THE HAGGERTY-OLSON-WICKMAN BEHAVIOR RATING, SCHEDULE A

Behavior Problem	Younger Group	Older Group	Diff.
Disinterest in school work	40	68	28
Cheating	58	43	15
Unnecessary tardiness	24	4	20
Lying	61	48	13
Defiance of discipline	16	18	2
Marked overactivity	32	34	2
Unpopular with children	82	46	36
Temper outbursts	12	8	4
Bullying	64	58	6
Speech difficulties	14	28	14
Imaginative lying	150	147	3
Sex offences	0	0	0
Stealing	36	36	0
Truancy	0	0	0
Obscene notes, talk	0	0	0
Total	589	530	59

The younger group had a score of eighty-two points and the older group forty-six.

Table 19 is concerned with intellectual, physical, social, and emotional traits as listed in Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules. The younger group had lower scores on all traits except "emotional." The older group excelled by sixteen points. "Intellectual traits" show a difference of thirty-six points, "physical traits" eleven points, and "social traits" twenty-eight points. The greatest difference on any one trait was on "intellectual."

TABLE 19

TOTAL SCORES OF TWO AGE GROUPS OF FIRST-GRADE CHILDREN AS REVEALED BY HAGGERTY-OLSON-WICKMAN BEHAVIOR RATING, SCHEDULE B

Division	Younger Group	Older Group	Diff.
Intellectual traits	202	238	36
Physical traits	193	204	11
Social traits	310	338	28
Emotional traits	316	300	16
Total	1021	1080	59

The younger group had a score thirty-six points lower than the older group.

Tables 15 through 19 would seem to indicate that the older group was slightly better adjusted than the younger group. The difference in self-adjustment was more distinct than in social adjustment. In neither was the difference great enough to cause much more disadvantage to the younger group than to the older group. Of the fifteen behavior problems checked, the two groups were equal on four and showed no greater difference than six points on five others. Traits showing as much or more than thirteen points difference were "cheating," "lying," "unnecessary tardiness," and "unpopular with children" in which the older group had lower scores; and "disinterest in school" and "speech difficulties" in which the younger group had lower scores. The two groups were about equal in the number of behavior problems they manifested.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study endeavored to determine the importance of the age factor in progress made by two groups of first-grade children. The procedure used in solving the problem was:

1. To ascertain the physical, mental, and emotional status of the two groups upon entering first grade and to make comparisons.

2. To ascertain the mental (academic) and emotional status of the two groups at the end of the eight-month period and to make comparisons.

The data used to obtain necessary facts were: physical examinations, readiness, intelligence, personality, behavior, and achievement tests. The following facts were revealed about the status of the children at the beginning of the study:

1. The older group had some advantage in height, but no substantial advantage in weight.

2. The older group was slightly more mature in pre-reading skills.

3. The older group had a substantial advantage in number readiness.

4. The younger group had some advantage in mental maturity.

5. The older group had some advantage in self and social adjustment.

6. The younger group had some advantage in the number of behavior problems manifested.

When achievement, personality, and behavior tests were given at the end of the study the following facts were revealed:

1. The younger group had higher grade-equivalents in the three phases of reading.

2. The older group had higher grade-equivalents in numbers. With the exception of one pupil, the younger group made satisfactory progress when measured by the norm for the test.

3. The older group had some advantage in self-adjustment, but the gain in self-adjustment over previous scores was about the same for both groups. The second test showed lower scores for both groups in social adjustment, but 59.4 per cent of the children had percentile ranks as high as the fifty percentile norm for the test.

4. Both groups made substantial gain over previous scores in behavior problems manifested.

Conclusions

When the preceding facts are considered the following conclusions seem logical as pertaining to these two groups of first-grade children:

1. The older group had some advantage in physical development.

2. The older group had no advantage in total scholastic achievement. It should also be remembered that the younger group had the advantage in scholastic ability as measured by a group intelligence test.

3. The difference of one per cent in total adjustment scores would not seem to give either group a substantial advantage over the other.

4. The older children manifested as many behavior problems as did the younger children.

5. The nature of the study and the type of activities used to guide the children in their learning experiences may have influenced the results obtained.

The general conclusion of this study with one room of first-grade children is: the age factor is not crucial in predicting success in the first year of school. A difference of six to twelve months in age did not guarantee readiness for reading and number achievement or for personal and social adjustment.

Recommendations

1. This study needs to be repeated with many groups in order to determine the correlation between age and other factors of readiness for school work.

2. A thorough study of the needs, interests, and abilities of children based on as many measures as possible would help in solving the problem of the importance of chronological age as a factor in learning.

BIBLIOGRAPHY

Books

Gesell, Arnold L., and Ilg, Frances L., The Child from Five to Ten, New York, Harper and Brothers, 1946.

Harrison, M. Lucille, Reading Readiness, Cambridge, The Riverside Press, 1939.

Hildreth, Gretrude, Learning the Three R's, Philadelphia, Educational Publishers, Inc., 1947.

Stratemeyer, Florence B., Forkner, H. L., McKim, M. G., Developing A Curriculum for Modern Living, New York, Bureau of Publications, Teachers College Columbia University, 1948.

Witty, Paul, Reading in Modern Education, Boston, D. C. Heath and Co., 1949.

Bulletins

Haggerty, M. E., Olson, W. C., and Wickman, E. K., Manual of Directions, Haggerty-Olson-Wickman Behavior Rating Schedules, New York, World Book Company, 1950.

Hildreth, Gretrude H., and Griffiths, Nellie L., Manual of Directions, Metropolitan Readiness Tests, New York, World Book Company, 1939.

Kuhlmann, F., and Anderson, Rose, Directions for Administering and Scoring, Kuhlmann-Anderson Tests, Grade 1, Second Semester, Educational Test Bureau, Nashville, 1942

Thorpe, Louis P., Clark, Willis W., and Tiegs, Ernest W., Manual of Directions, California Test of Personality, Primary Series, California, California Test Bureau, 1942