

AN EVALUATION OF THE HOME ROOM VERSUS DEPARTMENTAL
METHOD OF TEACHING SECOND GRADE

APPROVED:

James H. Dougherty
Major Professor

A. H. Leonard
Minor Professor

J. C. Matthews
Dean of the School of Education

Jack Johnson
Dean of the Graduate School

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METHOD OF TEACHING SECOND GRADE

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Charles A. Lindsey, B. S.

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CHAPTER I

INTRODUCTION

Problem

The problem under consideration is to determine the difference between home-room and departmental methods of teaching second grades, as measured by educational achievement.

The study attempts to answer the question, Which one of the foregoing mentioned methods will produce the greatest gain in achievement when applied at second-grade level?

Source of Data

The sources of data used in this report were two groups of second-grade pupils in East Ward Elementary School, Graham, Texas. One group, designated as control group, was taught by the home-room method; and a second group, designated as experimental group, was taught by departmental methods. The experiment extended over a period of five months.

The two groups were given the Pintner-Durost Elementary Tests, Scale 1: Form A, in September and matched according to their I. Q.'s.

Data for this study were obtained by the use of the Stanford Achievement Test: Primary Battery: Forms D and G.

Form D was given in September, to both groups, to determine their ability at the beginning of the year. Form G was given in February to determine the progress made during the five months period.

Origin of the Problem

For the past three years the curriculum of the East Ward Elementary School has been planned to include departmental work in only one second-grade section. This plan developed from a need for a balanced program of music in the primary grades. The only teacher in the school qualified to teach music was a music major who was teaching second grade.

The author became interested in attempting to measure the achievement of the two groups as a result of being repeatedly asked the question, What difference does a departmentalized second grade make in the achievement of the pupils?

Procedure

This study reports the procedures used and the results obtained from a comparison of the home-room and departmental methods of teaching. The experiment deals with pupils of second-grade level. One group was taught by the home-room method and another group by the departmental method. Each group completed the same amount of subject matter during the period of investigation. Achievement tests were given at the beginning and the end of the period of investigation. From the results of these tests definite conclusions were reached as to differences between the two methods of instruction.

Recommendations were made for further consideration of this and related problems.

Related Studies

This study does not attempt to present the many arguments, pro and con, on the subject of departmentalization. The reader is referred to a summary of these arguments as presented by Hagman.¹

Wrightstone, in a study of the effectiveness of integrated as compared to non-integrated teaching, found that the children being taught by integrated methods showed a marked superiority in the language arts, graphic arts, self-initiated activities, critical analyses, and social growth. Furthermore, it proved that the primary grades were superior in academic skills when taught by integrated methods.²

Leonard and Eurich reported the outcomes of twenty-nine controlled studies of integrated programs of instruction as compared to non-integrated programs. The studies showed conclusively that integration could be achieved without sacrificing knowledge or skill, and that the by-products were of great importance.³

¹Harlan A. Hagman, "Shall We Departmentalize?" Nations' Schools, XXVIII (July, 1941), 30.

²J. Wayne Wrightstone, Appraisal of Newer Elementary School Practices, New York, Bureau of Publications, Teachers College, Columbia University, 1938.

³J. Paul Leonard and Alvin C. Eurich, An Evaluation of Modern Education, A Report Sponsored by the Society for Curriculum Study, New York, Appleton-Century Co., Inc., 1942.

Geyer, in a summary of thirty-seven investigations of the relative merits of the activity as contrasted with conventional schools, offered overwhelming evidence in favor of the activity program. His conclusions were that the activity program would be more generally accepted; except for cost, attitude of lay public, and properly trained teachers.⁴

In a national survey of one hundred fifty-four schools Prince reported that:

It would seem reasonable to assume from an analysis of the replies received, that departmentalization in the elementary grades is definitely on the way out and is being replaced by various types of straight grade work. . . and that the elementary schools of today in cities of all sizes and all sections of the country are giving more attention to the needs of children and placing less emphasis on "subjects" or subject-matter specialization.⁵

Seegers, in an attempt to state some of the critical, inevitable differences between departmentalized and non-departmentalized schools, concluded:

That departmental organization lends itself to efficient teaching of isolated skills may be readily admitted. It may be superior to fragmentary, unimaginative teaching by a single teacher. Studies, both of ordinary departmentalization and of platoon schools, show that skills may be taught effectively under those plans, if standard tests mean anything. It is not argued that departmentalization is the worst possible

⁴Denton L. Geyer, "The Results of Activity Instruction: An Interpretation of Published Findings," Reconstructing Education thru Research, 170-176. Official Report, 1936. Washington, American Educational Research Association, 1936.

⁵Thomas C. Prince, "Trends in Types of Elementary School Organization," American School Board Journal, CVI (June, 1943), 37-38.

plan but simply that it is not the best possible plan, that it is, in fact, not a particularly good plan.⁶

A study by Rouse compared curriculum practices in departmental and non-departmental elementary schools. The study was undertaken for the purpose of discovering: (1) the scope of the school program in departmental and non-departmental organizations, (2) the general pattern of organization of the curriculum, (3) the way the program of school life is administered through curriculum practices, (4) and the procedures used in classroom teaching.⁷

A check list of one hundred thirty-seven items was used as a guide for all observations, interviews, and questionnaire studies. Only fourteen of the ninety-four differences found between the two groups of schools was statistically significant. Seven favored each group, but only one of the differences favoring the departmental group was approved by specialists in elementary education; whereas, all seven of the differences favoring the non-departmental group were approved by specialists.⁸ Rouse concluded that:

Schools organized under different plans of program organization are not so different in actual practice as the theories underlying the various types of organization seem to indicate.⁹

⁶J. Conrad Seegers, "More about Departmentalization," Elementary School Journal, LIII (March, 1947), 396-401.

⁷Margaret Rouse, "A Comparison of Curriculum Practices in Departmental and Non-Departmental Schools," Elementary School Journal, XLVII (September, 1946), 34.

⁸Ibid., p. 34.

⁹Ibid., p. 42.

Otto, in a nation wide survey of the organizational and administrative practices in elementary schools, reported that:

Departmental teaching in some degree was reported for 66% of the total of 532 schools included in the survey. The evidence showed that there was no statistically reliable difference between the extent of departmentalization in the 200 Texas and 286 non-Texas public schools. Likewise there was no statistically significant difference between the proportion of non-Texas and campus schools which did or did not have departmental work in some form. The difference between the latter two groups of schools which attained statistical significance indicated that a larger percentage of the campus group maintained departmental work in the first grade. Whereas, a larger percentage of the non-Texas group maintained specialization in teaching grades three, four, and six. In general, it appeared that the campus and the non-Texas groups were very similar in the amount of departmental instruction; such minor differences as did exist revealed more departmentalization in the campus schools.¹⁰

Limitations

This experiment was quite limited. First, it was limited to specific subject matter; second, it dealt with one group, in one school, in one locality; third, it did not attempt to measure the physical, emotional, or sociological development of the pupils being studied; and fourth, the experiment was limited to a period of five months.

All of a student's learning is affected by his surroundings, mental capacity, prior instruction, physical condition, and many other conditions. Due to a lack of adequate measurable data these factors have been omitted.

¹⁰Henry J. Otto, "Organizational and Administrative Practices in Elementary Schools in the U. S.," Publication No. 4544 (Austin, Texas: University of Texas, 1945), pp. 81-87.

CHAPTER II

EXPLANATION OF THE EXPERIMENT

The Experimental and Control Groups

This experiment was conducted with the second-grade pupils of East Ward Elementary School, Graham, Texas.

For convenience, during the period of investigation and later discussion, the group being taught by the departmental plan was designated the experimental group and will be referred to as Group B, and the group being taught by the home-room method was designated the control group and will be referred to as Group A.

The entire second grade, a total of one hundred and twenty pupils, was used in the experiment. Of the original forty-two pupils, in Group B, to take the tests in September, only thirty-five took the tests in February. These thirty-five pupils were then matched with thirty-five pupils from Group A on a basis of I. Q.'s.

Procedure Used by Each Group

The procedure used in the second grade, for the past three years, had been to departmentalize one section of the grade. The other sections of the grade operated on a home-room basis.

Group A was a very flexible organization. Although a

daily schedule was prepared, adjustments in schedule were made to meet various situations and conditions. With one exception, a thirty-minute music period, the home-room teacher remained with her group all day.

Group B received its instruction on a fixed schedule, with eight different teachers spending an allotted time in the room each day. The daily schedule was as follows:

Time	Subject	Teacher
8:30	Phonics	Miss A
8:50	Reading	Miss B
10:10	P. E.	Miss C
10:30	Spelling	Mrs. X
11:00	Arithmetic	Mrs. Y
11:30	Language	Miss Z
12:00	Noon	
12:40	Music	Miss B
	Weekly Papers	
	Story Telling	
	Free Discussions	
1:15	Health	Miss M
	Art (Alternate days)	
1:45	Writing	Miss N
2:15	Dismiss	

Equating the Groups

The Pintner-Durost Elementary Tests, Scale 1: Form A,

were used as a basis for equating the two groups used in this experiment. As revealed in Table 1 two matched groups of thirty-five pupils each were used.

Experimental Procedure

Early in September, 1948, all second-grade pupils were given the Pintner-Durost Elementary Tests. The actual pairing of pupils was made on the basis of the intelligence quotients. The matching was very close. Twenty-two pairs were matched with identical scores; twelve pairs within one point; and one pair within two points. The second step in the experiment was the administering of the Stanford Achievement Test, Primary Battery: Form D. The achievement test consisted of five parts as follows: (1) Reading: Paragraph Meaning, (2) Reading: Word Meaning, (3) Spelling, (4) Arithmetic Reasoning, (5) Arithmetic Computation. Tables 2, 3, 4, 5, 6, and 7 show the results of the test administered in September, 1948. The third step in the experiment was the administering of the Stanford Achievement Test, Primary Battery: Form G. Tables 8, 9, 10, 11, 12, and 13 show the results of the test administered in February, 1949. The fourth step was a comparison of the average improvement of the two groups on a basis of quartiles. Tables 14, 15, 16, 17, 18, and 19 show this comparison.

The methods of administering the Stanford Achievement Tests had been so designed as to contribute to the validity

of the tests by using the same form of question from test to test, wherever possible; including sample exercises, properly marked at the beginning of each test; and allowing liberal time limits, making the tests measure power rather than speed.

Complete and explicit directions for giving the tests were provided with each group of test booklets. The administrator studied these tests and was thoroughly familiar with all the directions before he gave the tests. Directions were followed verbatim and time limits adhered to rigidly at all times, so the results obtained would be accurate and valid.¹

¹T. L. Kelley, G. M. Ruch, and L. M. Terman, Directions for Administering Stanford Achievement Test, p. 1.

CHAPTER III

INTERPRETATION OF EXPERIMENTS

This chapter presents the data obtained from the tests administered during the experimental study, and attempts to make some comparison of the results. The results of all tests are shown in tabulated form.

Results of Intelligence Tests

Table 1 shows the chronological age, mental age, and intelligence quotient of Group A and Group B. The Pintner-Durost Tests of Mental Ability were used in equating the groups participating in this investigation. The pupils were ranked according to their scores on the above mentioned tests, the pupil with the highest score being ranked number one in each group. The pupil numbers appearing in tabulations in this chapter remain constant throughout the investigation; that is, Pupil No. 1 is the same individual in all cases. The mean scores were included to give the reader a better view of the equality of the two groups.

The chronological and mental ages are shown in years and months in Table 1; the number to the left of the hyphen in the column of chronological and mental ages represents the pupil's age in years, and the number to the right, additional months.

TABLE 1

CHRONOLOGICAL AGE, MENTAL AGE, AND INTELLIGENCE QUOTIENTS
OF GROUP A (CONTROL) AND GROUP B (EXPERIMENTAL)

Group A				Group B			
Pupil	CA	MA	IQ	Pupil	CA	MA	IQ
1	7-0	9-7	129	1	7-1	9-9	129
2	7-2	9-5	125	2	7-5	9-9	125
3	6-11	8-9	122	3	7-10	10-1	124
4	7-1	9-0	122	4	7-7	9-9	123
5	7-11	9-9	119	5	7-11	9-9	119
6	7-11	9-9	119	6	7-10	9-6	118
7	7-7	9-2	118	7	7-9	9-5	118
8	7-11	9-3	115	8	7-11	9-2	114
9	7-6	8-6	112	9	7-1	8-1	112
10	7-5	8-3	110	10	7-3	7-11	111
11	7-1	7-10	109	11	7-0	7-10	110
12	7-6	8-3	109	12	7-5	8-2	109
13	7-11	8-7	108	13	7-11	8-7	108
14	7-5	8-1	108	14	7-6	8-1	107
15	7-10	8-4	106	15	7-10	8-4	106
16	7-2	7-8	106	16	8-0	8-5	105
17	7-7	8-0	105	17	7-2	7-6	104
18	7-4	7-8	104	18	7-6	7-10	104
19	7-11	8-3	104	19	7-10	8-2	104
20	7-0	7-3	103	20	7-3	7-6	103
21	7-8	7-10	102	21	7-10	8-0	102
22	8-1	8-3	102	22	7-11	8-1	102
23	7-11	7-11	100	23	7-0	7-0	100
24	7-0	7-0	100	24	7-1	7-1	100
25	7-9	7-7	98	25	7-9	7-7	98
26	8-0	7-10	98	26	7-11	7-9	98
27	8-11	8-7	97	27	8-8	8-4	96
28	7-11	7-5	94	28	7-11	7-5	94
29	7-3	6-9	93	29	7-4	6-10	93
30	8-0	7-4	92	30	8-4	7-8	92
31	7-5	6-9	91	31	7-4	6-8	91
32	7-10	6-11	89	32	7-11	7-0	89
33	7-6	6-7	87	33	7-6	6-7	88
34	9-11	8-4	84	34	8-7	7-2	83
35	8-10	7-0	78	35	9-9	7-9	79
Mean	7-8	8-6	104.00	...	7-9	8-7	104.1
Median	7-6	...	103.90	...	7-9	...	103.5
σ	...	...	11.98	...	...	...	12.1

As shown in Table 1, Group A had a mean chronological age of seven years and eight months; and the range was from six years and eleven months to nine years and eleven months. The mean mental age for this group was eight years and six months, the range being from six years and seven months to nine years and nine months. Group A had a mean intelligence quotient of 104, the range being from 78-129.

Table 1 shows Group B to have a mean chronological age of seven years and nine months, and a range of from seven years and no months to nine years and nine months. The mental age for this group showed a mean of eight years and seven months, with a range of six years and seven months to ten years and one month. The mean intelligence quotient for this group was found to be 104.1, the range being from 79-129.

According to Terman, a range of 120-130 indicates very superior intelligence; 110-120 indicates superior; 90-110 indicates average; 85-90 indicates dullness and below 85 shows beginning of deficiency.¹ Groups A and B each had four pupils in the very superior class; and six from Group A and seven from Group B belonged in the superior class. Twenty-one from A and twenty from B were rated average, while two pupils from each group fell in the dull class, and two from each group fell below the deficiency rating.

¹L. M. Terman, The Measurement of Intelligence, p. 79.

Results of Stanford Achievement Tests

The achievement tests used for this investigation were the Stanford Achievement Tests: Primary Battery: Forms D and G. These tests were selected from a number of standard tests studied to be given the pupils. Form D was administered at the beginning of the school term (September) and shows the pupils' relative rank at the start of the period of investigation. Form G was administered at the end of the first term (February) and shows the pupils' relative rank at the close of the period of investigation. These tests attempted to measure ability in Reading, Paragraph Meaning and Word Meaning, Spelling, Arithmetic Reasoning, and Arithmetic Computation. The results of all tests are presented in tabulated form. Tables 2, 3, 4, 5, 6, and 7 show the results obtained from the tests administered in September (Form D). Tables 8, 9, 10, 11, 12, and 13 show the results obtained from the tests administered in February (Form G).

Tables 14, 15, 16, 17, 18, and 19 show the average improvement of the first, second, and third quartiles of Group A and Group B on the achievement tests, Forms D and G. These data will be used as a basis for forming tentative conclusions as to differences between the two methods of instruction under investigation.

As a precautionary measure, to protect the validity of the tests, the same person gave the tests to all groups. The directions for administering the Stanford Achievement Tests were strictly followed.

TABLE 2

SCORES ON ACHIEVEMENT TEST I: FORM D

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	8	6-8	1.7	1	12	7-0	2.0
2	17	7-4	2.4	2	20	7-7	2.6
3	10	6-10	1.9	3	13	7-1	2.1
4	14	7-2	2.2	4	13	7-1	2.1
5	11	6-11	1.9	5	32	8-5	3.4
6	23	7-9	2.8	6	17	7-4	2.4
7	10	6-10	1.9	7	9	6-9	1.8
8	34	8-7	3.6	8	19	7-6	2.5
9	25	7-11	2.9	9	9	6-9	1.8
10	9	6-9	1.8	10	9	6-9	1.8
11	12	7-0	2.0	11	8	6-8	1.7
12	14	7-2	2.2	12	10	6-10	1.9
13	15	7-2	2.2	13	12	7-0	2.0
14	11	6-11	1.9	14	18	7-5	2.4
15	9	6-9	1.8	15	9	6-9	1.8
16	10	6-10	1.9	16	11	6-11	1.9
17	26	7-3	2.3	17	8	6-8	1.7
18	9	6-9	1.8	18	11	6-11	1.9
19	31	8-4	3.4	19	16	7-3	2.3
20	9	6-9	1.8	20	9	6-9	1.8
21	10	6-10	1.9	21	10	6-10	1.9
22	10	6-10	1.9	22	12	7-0	2.0
23	10	6-10	1.9	23	8	6-8	1.7
24	14	7-2	2.2	24	10	6-10	1.9
25	14	7-2	2.2	25	12	7-0	2.0
26	13	7-1	2.1	26	11	6-11	1.9
27	10	6-10	1.9	27	11	6-11	1.9
28	14	7-2	2.2	28	10	6-10	1.9
29	17	7-4	2.4	29	9	6-9	1.8
30	9	6-9	1.8	30	12	7-0	2.0
31	8	6-8	1.7	31	14	7-2	2.2
32	10	6-10	1.9	32	8	6-8	1.7
33	9	6-9	1.8	33	9	6-9	1.8
34	12	7-0	2.0	34	9	6-9	1.8
35	8	6-8	1.7	35	9	6-9	1.8
Mean	13.7	7-2	2.2	...	12.1	7-0	2.0
Median	11.3	...	...	...	10.6	...	...
σ	6.6	...	...	...	4.8	...	...

TABLE 3
 SCORES ON ACHIEVEMENT TEST II; FORM D

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	8	6-8	1.7	1	11	6-11	1.9
2	16	7-3	2.3	2	25	7-11	2.9
3	10	6-10	1.9	3	14	7-2	2.2
4	12	7-0	2.0	4	16	7-3	2.3
5	14	7-2	2.2	5	31	8-4	3.4
6	20	7-7	2.6	6	23	7-9	2.8
7	6	6-7	1.6	7	11	6-11	1.9
8	28	8-2	3.1	8	24	7-10	2.9
9	27	8-1	3.0	9	6	6-7	1.6
10	6	6-7	1.6	10	6	6-7	1.6
11	17	7-4	2.4	11	6	6-7	1.6
12	18	7-5	2.4	12	11	6-11	1.9
13	14	7-2	2.2	13	6	6-7	1.6
14	7	6-8	1.7	14	20	7-7	2.6
15	10	6-10	1.9	15	18	7-5	2.4
16	6	6-7	1.6	16	10	6-10	1.9
17	22	7-9	2.7	17	10	6-10	1.9
18	6	6-7	1.6	18	11	6-11	1.9
19	32	8-5	3.4	19	16	7-3	2.3
20	6	6-7	1.6	20	8	6-8	1.7
21	11	6-11	1.9	21	12	7-0	2.0
22	11	6-11	1.9	22	14	7-2	2.2
23	7	6-8	1.7	23	7	6-8	1.7
24	10	6-10	1.9	24	7	6-8	1.7
25	18	7-5	2.4	25	10	6-10	1.9
26	17	7-4	2.4	26	11	6-11	1.9
27	6	6-7	1.6	27	11	6-11	1.9
28	8	6-8	1.7	28	6	6-7	1.6
29	11	6-11	1.9	29	6	6-7	1.6
30	7	6-8	1.7	30	8	6-8	1.7
31	11	6-11	1.9	31	16	7-3	2.3
32	6	6-7	1.6	32	12	7-0	2.0
33	10	6-10	1.9	33	6	6-7	1.6
34	11	6-11	1.9	34	17	7-4	2.4
35	9	6-9	1.8	35	17	7-4	2.4
Mean	13.7	7-2	2.2	...	12.1	7-0	2.0
Median	11.3	...	...	...	10.6	...	...
σ	6.6	...	...	...	4.8	...	...

TABLE 4
 SCORES ON ACHIEVEMENT TEST III: FORM D

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	8	6-8	1.7	1	10	6-10	1.9
2	17	7-4	2.4	2	15	7-2	2.2
3	8	6-8	1.7	3	15	7-2	2.2
4	21	7-8	2.6	4	8	6-8	1.7
5	11	6-11	1.9	5	21	7-8	2.6
6	19	7-6	2.5	6	31	6-4	3.4
7	5	6-6	1.5	7	2	6-3	1.3
8	24	7-10	2.9	8	7	6-8	1.7
9	27	8-1	3.0	9	1	6-2	1.2
10	4	6-5	1.4	10	1	6-2	1.2
11	17	7-4	2.4	11	1	6-2	1.2
12	4	6-5	1.4	12	2	6-3	1.3
13	19	7-6	2.5	13	8	6-8	1.7
14	9	6-9	1.8	14	14	7-2	2.2
15	8	6-8	1.7	15	4	6-5	1.4
16	7	6-8	1.7	16	4	6-5	1.4
17	7	6-8	1.7	17	4	6-5	1.4
18	2	6-3	1.3	18	6	6-7	1.6
19	29	8-3	3.2	19	25	7-11	2.9
20	1	6-2	1.2	20	0	6-2	1.1
21	5	6-6	1.5	21	12	7-0	2.0
22	4	6-5	1.4	22	8	6-8	1.7
23	6	6-7	1.6	23	0	6-2	1.1
24	15	7-2	2.2	24	7	6-8	1.7
25	13	7-1	2.1	25	2	6-3	1.3
26	3	6-4	1.3	26	6	6-7	1.6
27	7	6-8	1.7	27	7	6-8	1.7
28	3	6-4	1.3	28	7	6-8	1.7
29	11	6-11	1.9	29	1	6-2	1.2
30	7	6-8	1.7	30	9	6-9	1.8
31	1	6-2	1.2	31	6	6-7	1.6
32	2	6-3	1.3	32	3	6-4	1.3
33	5	6-6	1.5	33	0	6-2	1.1
34	7	6-8	1.7	34	5	6-6	1.5
35	6	6-7	1.6	35	0	6-2	1.1
Mean	9.7	6-10	1.9	...	7.5	6-8	1.7
Median	7.3	...	...	...	5.7	...	...
σ	7.6	...	...	...	6.9	...	...

TABLE 5
 SCORES ON ACHIEVEMENT TEST III; FORM D

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	17	7-4	2.4	1	12	7-0	2.0
2	28	8-2	3.1	2	28	8-2	3.1
3	10	6-10	1.9	3	17	7-4	2.4
4	13	7-1	2.1	4	7	6-8	1.7
5	10	6-10	1.9	5	28	8-2	3.1
6	20	7-7	2.6	6	23	7-9	2.8
7	13	7-1	2.1	7	13	7-1	2.1
8	17	7-4	2.4	8	17	7-4	2.4
9	23	7-9	2.8	9	7	6-8	1.7
10	26	8-0	3.0	10	7	6-8	1.7
11	13	7-1	2.1	11	7	6-8	1.7
12	17	7-4	2.4	12	7	6-8	1.7
13	20	7-7	2.6	13	13	7-1	2.1
14	20	7-7	2.6	14	17	7-4	2.4
15	13	7-1	2.1	15	17	7-4	2.4
16	13	7-1	2.1	16	10	6-10	1.9
17	20	7-7	2.4	17	7	6-8	1.7
18	10	6-10	1.9	18	10	6-10	1.9
19	10	6-10	1.9	19	20	7-7	2.4
20	7	6-8	1.7	20	7	6-8	1.7
21	13	7-1	2.1	21	10	6-10	1.9
22	23	7-9	2.8	22	13	7-1	2.1
23	10	6-10	1.9	23	7	6-8	1.7
24	13	7-1	2.1	24	7	6-8	1.7
25	20	7-7	2.4	25	10	6-10	1.9
26	10	6-10	1.9	26	13	7-1	2.1
27	10	6-10	1.9	27	7	6-8	1.7
28	13	7-1	2.1	28	10	6-10	1.9
29	7	6-8	1.7	29	7	6-8	1.7
30	20	7-7	2.6	30	10	6-10	1.9
31	13	7-1	2.1	31	17	7-4	2.4
32	7	6-8	1.7	32	7	6-8	1.7
33	7	6-8	1.7	33	10	6-10	1.9
34	10	6-10	1.9	34	7	6-8	1.7
35	9	6-9	1.8	35	7	6-8	1.7
Mean	14.1	7-2	2.2	...	11.2	6-11	1.9
Median	12.2	...	...	...	9.2	...	...
σ	6.3	...	...	...	6.3	...	...

TABLE 6

SCORES ON ACHIEVEMENT TEST V: FORM D

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	10	6-10	1.9	1	23	7-9	2.6
2	14	7-2	2.2	2	10	6-10	1.9
3	10	6-10	1.9	3	10	6-10	1.9
4	14	7-2	2.2	4	20	7-7	2.6
5	14	7-2	2.2	5	14	7-2	2.2
6	7	6-8	1.7	6	17	7-4	2.4
7	4	6-5	1.4	7	7	6-8	1.7
8	20	7-7	2.6	8	10	6-10	1.9
9	10	6-10	1.9	9	1	6-2	1.2
10	20	7-7	2.6	10	4	6-5	1.4
11	7	6-8	1.7	11	7	6-8	1.7
12	14	7-2	2.2	12	4	6-5	1.4
13	20	7-7	2.6	13	10	6-10	1.9
14	7	6-8	1.7	14	17	7-4	2.4
15	14	7-2	2.2	15	0	6-2	1.1
16	4	6-5	1.4	16	14	7-2	2.2
17	4	6-5	1.4	17	1	6-2	1.2
18	10	6-10	1.9	18	10	6-10	1.9
19	7	6-8	1.7	19	1	6-2	1.2
20	4	6-5	1.4	20	7	6-8	1.7
21	14	7-2	2.2	21	7	6-8	1.7
22	10	6-10	1.9	22	1	6-2	1.2
23	7	6-8	1.7	23	1	6-2	1.2
24	20	7-7	2.6	24	4	6-5	1.4
25	10	6-10	1.9	25	1	6-2	1.2
26	7	6-8	1.7	26	10	6-10	1.9
27	20	7-7	2.6	27	10	6-10	1.9
28	23	7-9	2.8	28	0	6-2	1.1
29	4	6-5	1.4	29	0	6-2	1.1
30	14	7-2	2.2	30	0	6-2	1.1
31	17	7-4	2.4	31	14	7-2	2.2
32	1	6-2	1.2	32	0	6-2	1.1
33	4	6-5	1.4	33	7	6-8	1.7
34	10	6-10	1.9	34	17	7-4	2.4
35	7	6-8	1.7	35	0	6-2	1.1
Mean	14.9	7-2	2.2	...	13.70	7-2	2.2
Median	8.7	...	...	...	6.50	...	...
σ	5.9	...	...	...	6.08	...	...

TABLE 7
 AVERAGE SCORES OF ACHIEVEMENT TESTS I, II,
 III, IV, AND V; FORM D

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	10	6-10	1.9	1	14	7-2	2.2
2	19	7-6	2.5	2	19	7-6	2.5
3	10	6-10	1.9	3	14	7-2	2.2
4	15	7-2	2.2	4	13	7-1	2.2
5	12	7-0	2.0	5	25	7-11	2.9
6	18	7-5	2.4	6	22	7-9	2.7
7	8	6-8	1.7	7	8	6-8	1.7
8	25	7-11	2.9	8	15	7-2	2.2
9	22	7-9	2.7	9	5	6-6	1.5
10	13	7-1	2.2	10	5	6-6	1.5
11	13	7-1	2.2	11	8	6-8	1.7
12	13	7-1	2.2	12	7	6-8	1.7
13	18	7-5	2.4	13	10	6-10	1.9
14	12	7-0	2.0	14	17	7-4	2.4
15	11	6-11	1.9	15	10	6-10	1.9
16	8	6-8	1.7	16	10	6-10	1.9
17	16	7-3	2.3	17	6	6-7	1.6
18	7	6-8	1.7	18	10	6-10	1.9
19	22	7-9	2.7	19	16	7-3	2.3
20	5	6-6	1.5	20	6	6-7	1.6
21	11	6-11	1.9	21	10	6-10	1.9
22	12	7-0	2.0	22	10	6-10	1.9
23	8	6-8	1.7	23	5	6-6	1.5
24	14	7-2	2.2	24	7	6-8	1.7
25	15	7-2	2.2	25	7	6-8	1.7
26	10	6-10	1.9	26	10	6-10	1.9
27	11	6-11	1.9	27	9	6-9	1.8
28	12	7-0	2.0	28	7	6-8	1.7
29	10	6-10	1.9	29	5	6-6	1.5
30	14	7-2	2.2	30	8	6-8	1.7
31	10	6-10	1.9	31	13	7-1	2.1
32	5	6-6	1.5	32	6	6-7	1.6
33	7	6-8	1.7	33	6	6-7	1.6
34	10	6-10	1.9	34	11	6-11	1.9
35	8	6-8	1.7	35	7	6-8	1.7
Mean	12.60	7-1	2.1	...	10.6	6-11	1.9
Median	12.00	...	...	...	11.1	...	...
σ	5.02	...	...	...	5.0	...	...

TABLE 8
 SCORES ON ACHIEVEMENT TEST I: FORM G

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	29	8-3	3.2	1	34	8-7	3.6
2	32	8-5	3.4	2	54	8-7	3.6
3	26	8-0	3.0	3	27	8-1	3.0
4	19	7-6	2.5	4	28	8-2	3.1
5	30	8-3	3.3	5	42	9-5	4.4
6	33	8-6	3.5	6	35	8-8	3.7
7	14	7-2	2.2	7	16	7-3	2.3
8	52	10-6	5.5	8	36	8-9	3.8
9	37	8-11	3.9	9	16	7-3	2.3
10	18	7-5	2.4	10	20	7-7	2.6
11	31	8-4	3.4	11	9	6-9	1.8
12	27	8-1	3.0	12	10	6-10	1.9
13	31	9-4	3.4	13	27	8-1	3.0
14	14	7-2	2.2	14	34	8-7	3.6
15	12	7-0	2.0	15	14	7-2	2.2
16	10	6-10	1.9	16	20	7-7	2.6
17	35	8-8	3.7	17	8	6-8	1.7
18	15	7-2	2.2	18	18	7-5	2.4
19	42	9-5	4.4	19	20	7-7	2.6
20	10	6-10	1.9	20	12	7-0	2.0
21	13	7-1	2.1	21	24	7-10	2.9
22	12	7-0	2.0	22	25	7-11	2.9
23	18	7-5	2.4	23	10	6-10	1.9
24	28	8-2	3.1	24	18	7-5	2.4
25	38	9-0	4.0	25	16	7-3	2.3
26	22	7-9	2.7	26	21	7-8	2.6
27	18	7-5	2.4	27	12	7-0	2.0
28	32	8-5	3.4	28	17	7-4	2.4
29	34	8-7	3.6	29	9	6-9	1.8
30	11	6-11	1.9	30	22	7-9	2.7
31	16	7-3	2.3	31	32	8-5	3.4
32	12	7-0	2.0	32	11	6-11	1.9
33	13	7-1	2.1	33	15	7-2	2.2
34	13	7-1	2.1	34	9	6-9	1.8
35	10	6-10	1.9	35	14	7-2	2.2
Mean	23.0	7-9	2.8	...	20.3	7-7	2.6
Median	21.0	...	...	...	18.6	...	...
σ	10.6	...	...	...	9.1	...	...

TABLE 9
 SCORES ON ACHIEVEMENT TEST II: FORM G

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	19	7-6	2.5	1	36	8-9	3.6
2	28	8-2	3.1	2	41	9-3	4.3
3	21	7-8	2.6	3	25	7-11	2.9
4	31	8-4	3.4	4	24	7-10	2.9
5	24	7-10	2.9	5	37	8-11	3.9
6	34	8-7	3.6	6	35	8-8	3.7
7	18	7-5	2.4	7	18	7-5	2.4
8	44	9-7	4.6	8	32	8-5	3.4
9	39	9-1	4.1	9	17	7-4	2.4
10	26	8-0	3.0	10	14	7-2	2.2
11	29	8-3	3.2	11	10	6-10	1.9
12	26	8-0	3.0	12	14	7-2	2.2
13	26	8-0	3.0	13	25	7-11	2.9
14	17	7-4	2.4	14	33	8-6	3.5
15	18	7-5	2.4	15	16	7-3	2.3
16	14	7-2	2.2	16	14	7-2	2.2
17	37	8-11	3.9	17	11	6-11	1.9
18	17	7-4	2.4	18	17	7-4	2.4
19	32	8-5	3.4	19	32	8-5	3.4
20	18	7-5	2.4	20	8	6-8	1.7
21	11	6-11	1.9	21	21	7-8	2.6
22	13	7-1	2.1	22	28	8-2	3.1
23	24	7-10	2.9	23	10	6-10	1.9
24	24	7-10	2.9	24	16	7-3	2.3
25	33	8-6	3.5	25	18	7-5	2.4
26	20	7-7	2.6	26	12	7-0	2.0
27	19	7-6	2.5	27	10	6-10	1.9
28	24	7-10	2.9	28	16	7-3	2.3
29	27	8-1	3.0	29	7	6-8	1.7
30	10	6-10	1.9	30	19	7-6	2.5
31	18	7-5	2.4	31	28	8-2	3.1
32	11	6-11	1.9	32	6	6-7	1.6
33	14	7-2	2.2	33	6	6-7	1.6
34	17	7-4	2.4	34	11	6-11	1.9
35	14	7-2	2.2	35	24	7-10	2.9
Mean	22.8	7-9	2.8	...	19.7	7-7	2.6
Median	20.9	...	...	...	17.3	...	...
σ	6.1	...	...	...	9.1	...	...

TABLE 10

SCORES ON ACHIEVEMENT TEST III: FORM G

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	25	7-11	2.9	1	30	8-3	3.3
2	31	8-4	3.4	2	33	8-6	3.5
3	18	7-5	2.4	3	25	7-11	2.9
4	25	7-11	2.9	4	26	8-0	3.0
5	24	7-10	2.9	5	29	8-3	3.2
6	32	8-5	3.4	6	37	8-11	3.9
7	24	7-10	2.9	7	14	7-2	2.2
8	34	8-7	3.6	8	26	8-0	3.0
9	36	9-0	4.0	9	14	7-2	2.2
10	30	8-3	3.3	10	21	7-8	2.6
11	31	8-4	3.4	11	5	6-6	1.5
12	29	8-3	3.2	12	1	6-2	1.2
13	27	8-1	3.0	13	26	8-0	3.0
14	29	8-3	3.2	14	25	7-11	2.9
15	11	6-11	1.9	15	14	7-2	2.2
16	12	7-0	2.0	16	18	7-5	2.4
17	23	7-9	2.8	17	2	6-3	1.3
18	24	7-10	2.9	18	12	7-0	2.0
19	35	8-8	3.7	19	33	8-6	3.5
20	8	6-8	1.7	20	4	6-5	1.4
21	6	6-7	1.6	21	27	8-1	3.0
22	12	7-0	2.0	22	22	7-9	2.7
23	12	7-0	2.0	23	2	6-3	1.3
24	25	7-11	2.9	24	22	7-9	2.7
25	34	8-7	3.6	25	9	6-9	1.8
26	19	7-6	2.5	26	22	7-9	2.7
27	26	8-0	3.0	27	5	6-6	1.5
28	11	6-11	1.9	28	21	7-8	2.6
29	30	8-3	3.3	29	8	6-8	1.7
30	22	7-9	2.7	30	18	7-5	2.4
31	9	6-9	1.8	31	28	8-2	3.1
32	6	6-7	1.6	32	15	7-2	2.2
33	14	7-2	2.2	33	5	6-6	1.5
34	11	6-11	1.9	34	9	6-9	1.8
35	14	7-2	2.2	35	5	6-6	1.5
Mean	21.7	7-9	2.7	...	17.4	7-4	2.4
Median	24.1	...	...	...	16.3	...	...
σ	9.1	...	...	...	10.1	...	...

TABLE 11
 SCORES ON ACHIEVEMENT TEST IV: FORM G

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	26	8-0	3.0	1	20	7-7	2.6
2	22	7-9	2.7	2	28	8-2	3.1
3	23	7-9	2.8	3	28	8-2	3.1
4	23	7-9	2.8	4	20	7-7	2.6
5	20	7-7	2.6	5	28	8-2	3.1
6	31	8-4	3.4	6	23	7-9	2.8
7	17	7-4	2.4	7	17	7-4	2.4
8	28	8-2	3.1	8	23	7-9	2.8
9	26	8-0	3.0	9	17	7-4	2.4
10	26	8-0	3.0	10	19	7-6	2.5
11	20	7-7	2.6	11	7	6-8	1.7
12	26	8-0	3.0	12	10	6-10	1.9
13	26	8-0	3.0	13	20	7-7	2.6
14	7	6-8	1.7	14	23	7-9	2.8
15	17	7-4	2.4	15	10	6-10	1.9
16	13	7-1	2.1	16	17	7-4	2.4
17	23	7-9	2.8	17	13	7-1	2.1
18	19	7-6	2.5	18	17	7-4	2.4
19	20	7-7	2.6	19	13	7-1	2.1
20	7	6-8	1.7	20	10	6-10	1.9
21	13	7-1	2.1	21	17	7-4	2.4
22	10	6-10	1.9	22	20	7-7	2.6
23	13	7-1	2.1	23	7	6-8	1.7
24	17	7-4	2.4	24	10	6-10	1.9
25	17	7-4	2.4	25	13	7-1	2.1
26	24	7-10	2.9	26	23	7-9	2.8
27	13	7-1	2.1	27	18	7-5	2.4
28	23	7-9	2.8	28	10	6-10	1.9
29	26	8-0	3.0	29	7	6-8	1.7
30	17	7-4	2.4	30	23	7-9	2.8
31	13	7-1	2.1	31	20	7-7	2.6
32	13	7-1	2.1	32	7	6-8	1.7
33	10	6-10	1.9	33	17	7-4	2.4
34	17	7-4	2.4	34	17	7-4	2.4
35	7	6-8	1.7	35	7	6-8	1.7
Mean	18.8	7-6	2.5	...	16.6	7-4	2.4
Median	19.3	...	...	...	18.0	...	...
σ	7.0	...	...	...	6.8	...	...

TABLE 12
 SCORES ON ACHIEVEMENT TEST V: FORM G

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	25	7-11	2.9	1	30	8-3	3.3
2	22	7-9	2.7	2	23	7-9	2.8
3	23	7-9	2.8	3	23	7-9	2.8
4	24	7-10	2.9	4	23	7-9	2.8
5	25	7-11	2.9	5	22	7-9	2.7
6	24	7-10	2.9	6	22	7-9	2.7
7	23	7-9	2.8	7	17	7-4	2.4
8	22	7-9	2.7	8	22	7-9	2.7
9	22	7-9	2.7	9	22	7-9	2.7
10	23	7-9	2.8	10	15	7-2	2.2
11	24	7-10	2.9	11	2	6-3	1.3
12	25	7-11	2.9	12	17	7-4	2.4
13	25	7-11	2.9	13	23	7-9	2.8
14	20	7-7	2.6	14	23	7-9	2.8
15	22	7-9	2.7	15	4	6-5	1.4
16	20	7-7	2.6	16	17	7-4	2.4
17	20	7-7	2.6	17	10	6-10	1.9
18	21	7-8	2.6	18	23	7-9	2.8
19	23	7-9	2.8	19	10	6-10	1.9
20	7	6-8	1.7	20	0	6-2	1.1
21	23	7-9	2.8	21	23	7-9	2.8
22	17	7-4	2.4	22	17	7-4	2.4
23	7	6-8	1.7	23	0	6-2	1.1
24	24	7-10	2.9	24	10	6-10	1.9
25	24	7-10	2.9	25	22	7-9	2.7
26	20	7-7	2.6	26	10	6-10	1.9
27	25	7-11	2.9	27	16	7-3	2.3
28	22	7-9	2.7	28	20	7-7	2.6
29	22	7-9	2.7	29	4	6-5	1.4
30	11	6-11	1.9	30	20	7-7	2.6
31	22	7-9	2.7	31	23	7-9	2.8
32	4	6-5	1.4	32	17	7-4	2.4
33	4	6-5	1.4	33	17	7-4	2.4
34	22	7-9	2.7	34	17	7-4	2.4
35	17	7-4	2.4	35	10	6-10	1.9
Mean	20.0	7-7	2.6	...	19.7	7-7	2.6
Median	21.9	...	...	...	16.9	...	...
σ	6.5	...	...	...	7.4	...	...

TABLE 13
 AVERAGE SCORES OF ACHIEVEMENT TESTS I, II,
 III, IV, AND V: FORM G

Group A				Group B			
Pupil	Scores	Age Equiv- alent	Grade Equiv- alent	Pupil	Scores	Age Equiv- alent	Grade Equiv- alent
1	25	7-11	2.9	1	30	8-3	3.3
2	27	8-1	3.0	2	32	8-5	3.4
3	22	7-9	2.7	3	26	8-0	3.0
4	24	7-10	2.9	4	24	7-10	2.9
5	25	7-11	2.9	5	32	8-5	3.4
6	31	8-4	3.4	6	30	8-3	3.3
7	19	7-6	2.5	7	16	7-3	2.3
8	36	8-9	3.8	8	28	8-2	3.1
9	32	8-5	3.4	9	17	7-4	2.4
10	25	7-11	2.9	10	18	7-5	2.4
11	27	8-1	3.0	11	7	6-8	1.7
12	27	8-1	3.0	12	10	6-10	1.9
13	27	8-1	3.0	13	24	7-10	2.9
14	17	7-4	2.4	14	28	8-2	3.1
15	16	7-3	2.3	15	12	7-0	2.0
16	14	7-2	2.2	16	18	7-5	2.4
17	28	8-2	3.1	17	9	6-9	1.8
18	19	7-6	2.5	18	17	7-4	2.4
19	30	8-3	3.3	19	22	7-9	2.7
20	10	6-11	1.9	20	7	6-8	1.7
21	13	7-1	2.1	21	22	7-9	2.7
22	13	7-1	2.1	22	22	7-9	2.7
23	15	7-2	2.2	23	6	6-7	1.6
24	24	7-10	2.9	24	15	7-2	2.2
25	29	8-3	3.2	25	16	7-3	2.3
26	31	7-8	2.6	26	18	7-5	2.4
27	20	7-7	2.6	27	12	7-0	2.0
28	22	7-9	2.7	28	17	7-4	2.4
29	28	8-2	3.1	29	7	6-8	1.7
30	14	7-2	2.2	30	21	7-8	2.6
31	16	7-3	2.3	31	26	8-0	3.0
32	9	6-9	1.8	32	11	6-11	1.9
33	11	6-11	1.9	33	12	7-0	2.0
34	14	7-2	2.2	34	13	7-1	2.1
35	13	7-1	2.1	35	12	7-0	2.0
Mean	21.5	7-9	2.7	...	18.4	7-5	2.4
Median	21.9	...	...	...	17.3	...	...
σ	6.8	...	...	...	7.5	...	...

Table 2 gives the data for Group A and Group B resulting from the first D test. In paragraph meaning, Group A scores ranged from 8-34 with a mean score of 13.7. Group B scores ranged from 8-32 with a mean score of 12.1. According to the traditional-type norms set up for these tests, the score of 12 was average for grade 2.0; therefore, there were nineteen pupils in Group A and twenty-one pupils in Group B whose scores fell below the average.

Further study of the table shows that mean-age equivalents were seven years and two months for Group A, and seven years and no months for Group B. Individual age equivalents ranged from six years and eight months to eight years and seven months for Group A, and six years and eight months to eight years and five months for Group B.

Groups A and B were both normal or above in grade equivalents 2.2 and 2.0, respectively. (These tests were given at grade level 2.0.) Fourteen from A and nine from B rated higher grade equivalents and nineteen from A and twenty-one from B fell below the normal grade equivalent.

Table 3 presents the results from the second Form D test, word meaning, given the groups. The mean scores were the same for both groups, 14.3, the range 6-32 for A and 6-31 for B. These data showed twenty-two pupils in each group below the 12 norm.

The mean score of both groups was above normal in age and grade equivalent. The 2.2 grade equivalent showed the

groups to be .2 of a year above normal. The range, in each group, was 1.6-3.4.

Table 4 gives the data for Group A and Group B obtained from the third Form D test. In spelling the mean score was 9.7 for A and 7.5 for B. Both groups were below the 12 norm. The range of Group A was 1-29 and Group B was 0-31. The mean-age equivalent of Group A was six years and ten months, and Group B was six years and eight months. The range for A was from six years and two months to eight years and three months, and for B six years and two months to eight years and four months.

The mean-grade equivalent of Group A and Group B was 1.9 and 1.7, respectively. Both groups were below normal in grade equivalent. Group A showed a range of 1.2-3.2 and Group B a range of 1.1-3.4. Twenty-five pupils of Group A and twenty-eight of Group B fell below the norm.

Table 5 presents the data obtained from the results of the fourth test, Form D. The arithmetic reasoning mean score was 14.1 for Group A and 11.2 for Group B. The range for both groups was 7-28.

The two groups were average, or above, in age and grade equivalents. Group A had a mean-age equivalent of seven years and two months with a range from 6-8 to 8-2. This group also had a mean-grade equivalent of 2.2 with a range from 1.7 to 3.1. Group B had a mean-age equivalent of six years and eleven months and a grade equivalent of 1.9. The

ranges of age and grade equivalents for Group B were the same as those for Group A. Thirteen pupils in Group A and twenty-one in Group B fall below the 2.0 grade norm.

Table 6 gives the data for Groups A and B obtained from the fifth Form D test. The mean scores were 14.9 for Group A and 13.7 for Group B, with a range of 1-23 and 0-23, respectively.

The two groups showed identical age and grade equivalents, seven years and two months; and 2.2 grade level. Both were above average in age and grade equivalents. The age range for the two groups was six years and two months to seven years and nine months. The upper limits of the grade range were 2.9 for both groups; while the lower limits were 1.2 for A and 1.1 for B. Twenty-one pupils in A and twenty-seven in B were below the 2.0 grade norm.

Table 7 presents the data obtained from an average of the first, second, third, fourth, and fifth Form D tests for Group A and Group B.

The mean score of Group A was 12.6 with a range from 5-25. This group was slightly advanced in both age and grade equivalents. The mean-age equivalent was seven years and one month, with a range from six years and six months to seven years and eleven months. The mean-grade equivalent was 2.1 ranging from 1.5 to 2.9. Seventeen pupils fell below the normal grade level.

Group B had a mean score of 10.6. The range of the

scores, age equivalents, and grade equivalents were the same as those shown for Group A; however, twenty-five pupils in this group fell below the norm.

A further study of Tables 2, 3, 4, 5, and 6 showed the mean-grade level of Group A .2 point above normal in paragraph meaning, word meaning, arithmetic reasoning, and arithmetic computation. In spelling, the mean-grade equivalent was .1 point below normal. Group B was at grade level in paragraph meaning; .2 point advanced in word meaning; .3 point retarded in spelling; .1 point advanced in arithmetic reasoning; and .2 advanced in arithmetic computation. Both groups were normal or slightly accelerated in four of the five subject areas tested. The fifth subject area, spelling, showed both groups retarded.

Table 8 presents the data obtained from the first Form G test given at the end of the study to Group A and Group B. (Form G tests were given five months later than Form D tests.) In paragraph meaning, the mean score of Group A was 23 with a range from 10-52. Group B had a mean score of 20.3 with a range from 8-42. According to norms set up for these tests, the score of 19 was average for grade 2.5; therefore, there were seventeen pupils in Group A and eighteen in Group B whose scores fell below the average. Both groups showed gains in mean score over the corresponding D mean score; Group A, 9.3 points and Group B, 8.2 points. Also, a decrease in the number of students that

fell below the norm was shown in this test. The mean-age equivalents were seven years and nine months for Group A and seven years and seven months for Group B. Both groups were above the norm of seven years and six months. The two groups showed an average gain of seven months between the two tests. Groups A and B with a mean-grade equivalent of 2.8 and 2.6 showed a gain of .6 point in grade progress. (Form G tests were given at grade level 2.5.) Both groups were normal as to expected gains in the five-months period.

The data obtained from the second Form G test given the two groups were presented in Table 9. In word meaning, Group A had a mean score of 22.8, with a range from 10-44; a gain of 8.5 points. Group B had a mean score of 19.7, with a range of 6-41, a gain of 5.4 points.

The mean-age equivalent for Group A showed a gain of seven months, while the mean for Group B showed a gain of five months. The range was six years and ten months to nine years and seven months for Group A, and six years and seven months to nine years and three months for Group B.

In grade equivalents the mean scores were 2.8 and 2.6 for Groups A and B, respectively. Each group was above the norm of 2.5, although the gain between tests showed Group A with a gain of .6 grade point and Group B a gain of .4 grade point; however, fourteen pupils in A and twenty in B fell below the normal score. (A decrease of eight for A and only two for B.)

Table 10 gives the data obtained from the third Form G test for Groups A and B. The mean score, in spelling, was 21.7 for Group A and 17.4 for Group B. Group A had a range of 6-38, and Group B had a range of 5-37.

Group A had a mean-age equivalent of seven years and nine months and Group B a mean of seven years and four months. Group A showed a gain of eleven months and Group B a gain of eight months.

The mean-grade equivalent for Group A was 2.7 and Group B, 2.4. The range was 1.6 to 4.0 and 1.5 to 3.9, respectively. Group A showed a gain of .8 grade point and Group B a gain of .7 grade point between the two tests. Although Group B fell below the normal-grade expectancy of 2.5, both groups showed more than normal gain during the five-months period of study. Thirteen pupils of Group A and eighteen of Group B fell below the expected norm; however, this was a decrease of twelve in A and ten in B during the intervening tests.

The data presented in Table 11 were obtained from the fourth Form G test given to Groups A and B. In arithmetic reasoning, Group A showed a mean score of 16.8 and Group B a mean score of 16.5. The range of A was 7-31; the range of B was 7-28. The mean-age equivalent was seven years and six months, a gain of four months for Group A, and seven years and four months for Group B, a gain of five months.

Although the mean-grade equivalent for Group A was

normal, the group showed a gain of only .3 grade point, which was .2 point below normal expectancy. Group B with a 2.4 mean-grade equivalent was below the expected norm of 2.5; however, this group showed a gain of .5 grade point, the normal rate of progress. Seventeen pupils in Group A, an increase of four, and twenty-one pupils in Group B fell below the expected norm.

Table 12 gives the data obtained from the fifth Form G test administered Group A and Group B. In arithmetic computation, the mean score of Group A was 20 with a range from 4-25, and the mean score of Group B was 19.7 with a range from 4-30.

The mean-grade equivalent of 2.6, for both groups, showed the groups to be above the grade norm of 2.5; however, an increase of .4 grade point for the semester's work, and a gain of five months in age equivalent was below normal. Seven pupils in Group A and eighteen pupils in Group B fell below the 2.5 grade level (a decrease of fourteen in A and eighteen in B).

Table 13 presents the data obtained from the average scores of Tests I, II, III, IV, and V, Form G. The mean score of Group A was 21.5 with a range from 9 to 36. This group showed an increase in mean score of 8.9 points during the period of investigation. The mean-age equivalent for this group was seven years and nine months with a range from six years and nine months to eight years and nine months.

The mean-grade equivalent for Group A was 2.7, an increase of .6 grade point for the semester's work. Thirteen pupils in this group fell below normal, a decrease of four between tests. Group B had a mean score of 18.4 with a range from 6 to 32. During the semester's work this group showed a gain of 7.8 points. The mean-age equivalent was seven years and five months with a range from six years and seven months to eight years and five months. A gain of six months was shown in age equivalent.

The mean-grade equivalent of 2.4 was below the normal expectancy; however, Group B showed an increase of .5 grade point for the semester's work. The range was from 1.6 to 3.4; twenty-one pupils were below grade level 2.5. This was four less pupils than was shown in the Form D tests. Further study of Tables 8, 9, 10, 11, and 12 showed Group A was above the normal-grade level, 2.5, in paragraph meaning, word meaning, spelling, and arithmetic computation. In arithmetic reasoning the group showed normal-grade level. Group A gains between Form D and Form G tests were: .6 grade point in paragraph meaning and word meaning; .8 point in spelling; .3 point in arithmetic reasoning; and .4 point in arithmetic computation. The range was from .3 to .8 point.

Group B was .1 of a grade point above normal-grade level in paragraph meaning, word meaning, and arithmetic computation. The group was .1 of a grade point below normal

in spelling and arithmetic reasoning. The gains made between Form D and Form G tests were: paragraph meaning, .6 grade point; word meaning, .4 point; spelling, .7 point; arithmetic reasoning, .5 point; and arithmetic computation, .4 point. The range was from .4 to .7 point.

As a means of evaluating more accurately the two methods of teaching second grade, a further analysis of the tests was made. Tables 14, 15, 16, 17, 18, and 19 show the average improvement of Group A and Group B at different levels of achievement. The quartiles were calculated on a basis of intelligence quotient.

Table 14 shows the average improvement made by pupils in Group A and Group B at different levels of ability in paragraph meaning. On the first Form D test the first quartile, the second quartile, and the third quartile of

TABLE 14
AVERAGE IMPROVEMENT OF THE FIRST, SECOND, AND THIRD
QUARTILES* OF GROUP A AND GROUP B
ON TEST I, FORMS D AND G

Groups	Average of Group A			Average of Group B		
	Form D	Form G	Gain	Form D	Form G	Gain
First quartile	11.0	18.1	7.1	10.2	16.2	6.0
Second quartile	13.6	22.4	8.8	10.9	19.2	8.3
Third quartile	16.1	29.0	12.9	15.3	28.8	13.5

*Quartiles are calculated on basis of I. Q.

Group A were in advance of Group B. This was consistent with the mean scores of the groups as shown in Table 8. On the Form G test the first quartile of A showed a 1.1 point gain, while the second quartile of this group indicated only a .5 point gain. The third quartile of Group B showed a .6 point gain. The two groups evidenced little difference after an investigation of five months duration. The two methods involved had little effect on pupil achievement in paragraph meaning.

Table 15 shows the average improvement of the first, second, and third quartiles in word meaning. The pupils of Group B, on the second Form D test rated higher in the first and third quartiles. In the second quartile, Group A rated higher. On the second Form G test Group A showed a superiority in the first, second, and third quartiles. The first

TABLE 15

AVERAGE IMPROVEMENT OF THE FIRST, SECOND, AND THIRD QUARTILES* OF GROUP A AND GROUP B ON TEST II, FORMS D AND G

Groups	Average of Group A			Average of Group B		
	Form D	Form G	Gain	Form D	Form G	Gain
First quartile	9.6	17.4	7.8	11.0	13.9	2.9
Second quartile	13.0	22.6	9.6	11.1	18.2	7.1
Third quartile	14.7	28.4	13.7	16.7	27.9	11.2

*Quartiles are calculated on basis of I. Q.

quartile revealed a gain of 4.9 points and the second and third quartile a 2.5 points gain. The differences indicated that a tentative conclusion was in order favoring the home-room method over the departmental, and particularly was the home-room method superior for the first quartile.

Table 16 presents the average improvement of the abilities of the two groups in spelling. The third Form D test

TABLE 16

AVERAGE IMPROVEMENT OF THE FIRST, SECOND, AND THIRD QUARTILES* OF GROUP A AND GROUP B ON TEST III, FORMS D AND G

Groups	Average of Group A			Average of Group B		
	Form D	Form G	Gain	Form D	Form G	Gain
First quartile	5.2	16.2	11.0	4.4	13.6	9.2
Second quartile	9.7	21.2	11.5	6.5	14.8	8.3
Third quartile	14.4	28.1	13.7	11.1	25.5	14.4

*Quartiles are calculated on basis of I. Q.

showed the first, second, and third quartiles of Group A to be superior. The first quartile of Group A showed a gain of 11 points between the Form D and Form G tests and Group B showed 9.2 points gain for the same period. The difference of 1.8 points was in favor of Group A. The second quartile of Group A showed a gain of 3.2 points, while the third quartile of Group B showed a gain of .7 point. The

differences were not consistent enough to warrant a definite conclusion in favor of either method.

Table 17 indicates the average improvement of the first, second, and third quartile of Group A and Group B in arithmetic reasoning. On the Form D test the first quartile of

TABLE 17

AVERAGE IMPROVEMENT OF THE FIRST, SECOND, AND THIRD QUARTILES* OF GROUP A AND GROUP B ON TEST IV, FORMS D AND G

Groups	Average of Group A			Average of Group B		
	Form D	Form G	Gain	Form D	Form G	Gain
First quartile	10.6	17.6	7.0	9.5	14.9	3.4
Second quartile	14.8	16.5	1.7	10.8	13.8	3.0
Third quartile	17.7	24.2	6.5	15.9	22.3	6.4

*Quartiles are calculated on basis of I. Q.

Group A was 1.1 points ahead of the first quartile of Group B. The second quartile of Group A was 4 points ahead and the third quartile 1.8 points ahead. On the Form G test the first quartile of Group A surpassed the first quartile of Group B by 2.7 points to show a gain of 3.6 points for Group A. The second quartile of Group A surpassed the second quartile of Group B by 2.7 points to show a gain of 1.3 points for Group B. The third quartile of Group A surpassed the third quartile of Group B by 1.9 points to show a gain

of .1 point for Group A. Although the first quartile of Group A showed definite superiority, the groups, as a whole, did not show differences great enough to justify a definite conclusion in favor of either method.

Table 18 shows the average improvement of the first, second, and third quartiles of Group A and Group B in arithmetic computation. The results from the Form D test showed

TABLE 18

AVERAGE IMPROVEMENT OF THE FIRST, SECOND, AND THIRD QUARTILES* OF GROUP A AND GROUP B ON TEST V, FORMS D AND G

Groups	Average of Group A			Average of Group B		
	Form D	Form G	Gain	Form D	Form G	Gain
First quartile	10.7	16.9	6.2	5.8	15.4	9.6
Second quartile	10.1	20.1	10.0	5.7	13.4	7.7
Third quartile	12.3	23.3	11.0	11.6	21.9	10.3

*Quartiles are calculated on basis of I. Q.

the first quartile of Group A with a score of 10.7 and the first quartile of Group B a score of 5.8. The difference of 4.9 points favored Group A. The second quartile of the two groups showed a difference of 4.4 points in favor of Group A. The scores of the third quartile showed a difference of .7 point in favor of Group A. On the Form G test the first quartile of Group B showed a gain of 3.4 points. The second

quartile of Group A showed a gain of 2.3 points. The third quartile of Group A showed a gain of .7 point. The superiority of the first quartile of Group B on the test in arithmetic computation favored the departmental method; however, the second and third quartiles of Group A were slightly superior and favored the home-room method.

Table 19 indicates the relative abilities of the pupils in the two groups in all subject areas tested. On the Form D

TABLE 19

AVERAGE IMPROVEMENT OF THE FIRST, SECOND, AND THIRD QUARTILES* OF GROUP A AND GROUP B ON TESTS I, II, III, IV, AND V, FORMS D AND G

Groups	Average of Group A			Average of Group B		
	Form D	Form G	Gain	Form D	Form G	Gain
First quartile	9.7	16.8	7.1	8.2	14.9	6.7
Second quartile	12.3	20.6	8.3	9.3	15.7	6.4
Third quartile	15.2	26.6	11.4	14.0	25.3	11.3

*Quartiles are calculated on basis of I. Q.

tests the first, second, and third quartiles of Group A showed a superiority over Group B. The results of the Form G tests showed Group A again superior to Group B. The first quartile made a gain of .4 point which was in favor of Group A. The gain made by the second quartile was 1.9 points, which

was in favor of Group A. The third quartile of Group A only showed a .1 point gain. Although Group A scores were consistently higher on both the Form D and Form G tests the differences were not great enough to justify a definite conclusion in favor of either method.

A further comparison of the average improvement of the two groups showed that on the initial tests the first quartile of Group A was superior in paragraph meaning, spelling, arithmetic reasoning, and arithmetic computation. The range of the scores for Group A was from 5.2 to 11. The range for Group B was from 4.4 to 11. The first quartile of Group B was superior in word meaning. The second quartile of Group A was superior in all subject areas tested. The range was 9.7-14.8 for Group A and 5.7-11.1 for Group B. The third quartile of Group B was superior only in word meaning. The range for Group A was 12.3-17.7 and for Group B 11.1-16.7. (On the final tests the first, second, and third quartiles of Group A were superior. The range was 16.2-18.1 for the first quartile of Group A and 13.6-16.2 for Group B. The range of the second quartile was 16.5-22.6 for Group A and 13.4-19.2 for Group B.) In the third quartile Group A range was 23.3-29, and Group B range was 22.5-28.8.

Summarizing, on both initial and final tests, Group A scores were higher in all subject areas, except word meaning. In word meaning, the first and third quartiles of Group B

showed higher scores. Although the differences consistently favored Group A, they were not great enough to be of statistical significance. Seemingly, the two methods involved had little effect on pupil achievement.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

This chapter gives tentative conclusions and makes recommendations which seem justifiable upon the basis of the results of this investigation.

Conclusions

From a study of the data presented in this report it was concluded that while all pupils showed some gains in both grade and age equivalents, the two methods involved did not show any statistically significant differences. It would seem reasonable to conclude that if the home-room method of instruction produces gains in achievement equal to that of the departmental method, the by-products of the home-room method would be of such infinitely greater value in the social and emotional development of the child as to exclude the departmental method of instruction from the elementary school program.

Recommendations

This study suffers from the small number of pupils involved and the period of time covered by the investigation. However, the results were suggestive of the need for further, more leisurely, and more scientific investigation.

The writer recommends that more research be done to determine the results of the two methods of instruction on pupil's social and emotional development.

It is further recommended that schools operating under a departmental-type organization should plan a continuous process of evaluating educational processes and results as it affects the whole child. Much of the needed research should be done by teachers since they are the ones who are confronted with the unsolved problems as well as the group to put into effect the solutions found.

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