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A comparative study of pupil ability and achievement

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A COMPARATIVE STUDY OF PUPIL ABILITY AND ACHIEVEMENT

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

One of the fundamental problems of the American public school is the development of an educational program which will serve all pupils in developing their potentialities whereby they can become happy, productive citizens.

Pupils differ from one another in mental, social, physical, and moral attributes. They differ too in interests, experiences, and background.

To be most effective in adapting the instruction to the individual needs of the pupils, the teacher must learn as much as possible about each child's abilities, interests, experiences, and background. Only then can the instruction be truly suited to the child's needs so that he will derive the greatest good from the school.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study to develop a better understanding of the pupils in Meridian School, Brazil, Indiana, through the following procedures: (1) by determining how the pupils compare with others as shown by standard norms of achievement; (2) by determining whether pupils are achieving in proportion to their ability to learn; (3) by detecting inconsistencies

between tested ability and achievement; and (4) by drawing some conclusions as to what might account for such inconsistencies.

Importance of the study. The effective teacher realizes the importance of understanding the whole child. The pupil's needs and abilities must be known if the school is to do good teaching. It is a recognized truth that "the equal treatment of unequals is the greatest inequality of all."[1]

For years the teacher's estimate was the only measure of a pupil's ability and accomplishment. The standardized examination developed since the turn of the century has made it possible to get a clearer and more objective picture of the extent to which pupils differ in ability. While teachers are aware of the shortcomings of tests, they feel modern education cannot function effectively without the use of such instruments. In regard to this, Broom makes the following statement:

> The purpose of measurement in education is to provide an opportunity for each child to master the content of education for which he is ready and to check the efficiency of methods of instruction so that he may learn the subject matter without undue expenditure of time and energy and without error.[2]

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[1]Herman L. Shibler, "The School's Responsibility to the Exceptional Child," The Nation's Schools, 54:38.

[2]M. W. Broom, Educational Measurement in the Elementary School (New York: McGraw-Hill Book Company, Inc., 1939), p. 3.

Webb and Shotwell say:

> . . . anyone who makes a careful study of measurement in education will admit that they are a great aid in improving educational procedure. Teachers are dealing with human beings and most certainly they need any instrument which will aid them in dealing more fairly and humanly with their pupils.[3]

Convinced of the importance of the testing program in evaluating the whole child and desiring to discover how well her pupils were making academic achievements in line with their potentialities, the investigator deemed this study worth while.

II. DEFINITIONS OF TERMS USED

Achievement test. An achievement test is a measure of a pupil's accomplishment resulting from instruction and learning. Items included have been carefully selected and checked.

Intelligence quotient. The ratio of the mental age of a child to his chronological age is called the intelligence quotient or I.Q. It is obtained by dividing the mental age by the chronological age. The formula is:

$$I.Q. = \frac{M.A.}{C.A.}$$

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[3]L. W. Webb and Anna M. Shotwell, Standard Tests in the Elementary School (New York: Ray Long and Richard R. Smith, Inc., 1932), p. 20.

Intelligence test. An intelligence test is a standardized instrument devised and used for measuring an individual's learning capacity or educability.

Median. The median is the midpoint of a distribution of a set of scores. It is that point in the distribution of values below which fifty per cent of the measures in a frequency distribution fall.

Norm. A norm is a median or average performance on standardized tests gained by testing large numbers of students of different ages or grade placement.

Percentile. Percentile is a point on a one hundred point scale which gives the per cent of scores which fall below it. It is named for the per cent of cases lying below it.

Quartile deviation. The quartile deviation is used as an index of the dispersion about the median. It is half the distance between the two scores representing the range of the middle fifty per cent.

III. ORGANIZATION OF THE REMAINDER OF THE PAPER

Chapter II points out the importance of a testing program as a factor in understanding each child. The use of tests from very early times is mentioned.

Chapter III describes the method of procedure and presents the data for each of the grades studied. Tables are used to show distribution of intelligence quotients, data including results of the Stanford Achievement Tests[4] and the Otis Quick Scoring Test,[5] grade placement, and the pupil's rank on each test.

Graphs show the distribution of intelligence quotients for each grade.

Chapter IV gives a summary of the study, the conclusions, and recommendations.

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[4]Truman L. Kelly and others, Stanford Achievement Test (New York: World Book Company, 1953).

[5]Arthur S. Otis, Otis Quick-Scoring Mental Ability Tests (Yonkers-on-Hudson, New York: World Book Company, 1939).

CHAPTER II

REVIEW OF THE LITERATURE

I. HISTORY OF THE TESTING PROGRAM

Many people have the mistaken idea that the testing program employed in the schools today is new and modern. This is far from the truth. Broom points out:

> Tests and measurements have been the traditional forms of school measures since schools have existed. As early as 300 B.C. intellectual studies were a part of the curriculum of the College of Ephebi in Athens and there was some arrangement whereby examinations were held in certain of the intellectual studies, particularly in grammar, geometry, rhetoric, and music. Even earlier than this, students at the end of their apprenticeship gave an exhibition of their proficiency in arms, actually a performance test.[1]

The use of tests and examinations could be traced through the centuries to the present time.

Broom says:

> There has been no decrease in the use of tests and examinations in schools through the centuries; but during the past century, a change has taken place in forms of measurement. For oral questions and verbal answers have been substituted written examinations, including in recent years teacher-made objective tests and standardized achievement tests.[2]

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[1]M. W. Broom, Educational Measurement in the Elementary School (New York: McGraw-Hill Book Company, Inc., 1939), p. 3, citing J. W. H. Walden, The Universities of Ancient Greece (New York: Charles Scribner's Sons, 1910), pp. 36, 135.

[2]Ibid., p. 4.

The increasing importance of measurement in educational placement is attested to by the rapid growth of established testing organizations and the founding of new ones, and by the number of local and regional testing programs which are in regular operation.[3]

II. ORIGINALITY OF THE PRESENT STUDY

Teachers have always endeavored to measure the results of their teaching efforts as indicated by the progress of their pupils toward desired educational goals.[4]

Countless studies have been made since the objective approach to the measurement of pupil intelligence and achievement made its appearance shortly after the beginning of the twentieth century.

The present study is the only one, to the investigator's knowledge, which uses this specific group and is based on these test results. Only in these aspects is it new or original. Results of previous studies would not be totally applicable to this particular group.

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[3]E. F. Lindquist, editor, Educational Measurement (Washington, D.C.: American Council on Education, 1951), p. 85.

[4]Harry A. Greene, Albert N. Jorgensen, and J. Raymond Gerberich, Measurement and Evaluation in the Elementary School (New York: Longmans, Greene, and Company, 1953), p. 1.

CHAPTER III

METHOD OF PROCEDURE AND REPORT OF THE STUDY

This study was made during the school year of 1953-1954.

I. SCOPE OF THE STUDY

The study was made in Meridian School in Brazil, Indiana. Grades one through six were taught by a faculty of eleven, of which the investigator was one. Departmentalized instruction was given in grades five and six.

The enrollment by grades appears in Table I.

TABLE I

ENROLLMENT IN MERIDIAN SCHOOL, 1953-1954

Meridian School	Grade						
	1	2	3	4	5	6	Total
Number of pupils	58	43	29	30	56	53	269

II. SOURCES OF DATA

The data for this study were obtained from test results, records on file in the principal's office, conferences with teachers, and interviews with pupils.

Pupil achievement was measured by the Stanford Achieve-

ment Tests. Primary Battery: Form J was given in the fall to grades two and three. Elementary Battery: Form J was given in grade four. Grades five and six were given the Intermediate Battery: Form J.

In the spring, Form K in each battery was given.

Mental ability was measured by the use of the Otis Quick Scoring Mental Ability Tests. The Alpha Test was given to grades two and three and the Beta Test was given in grades four, five, and six.

III. PRESENTATION AND TREATMENT OF DATA

In an ideal school situation each child would achieve to the limits of his ability. Though such ideal situations are nonexistent, nevertheless every effort should be made by the teacher to discover how well each child is achieving with regard to his capacity to achieve and to locate those pupils whose achievement is not consistent with ability.

A comparison of results on intelligence tests and achievement tests gives some indication as to how nearly the child is reaching his potential.

With a full realization of the shortcomings and fallacies of test results, the teacher will profit by a critical analysis of the performance of each child in her group.

This study is an analysis of data concerning pupils in grades two through six. Data and test results for each

grade are submitted and discussed separately in the following pages.

Grade two. Forty-three pupils were enrolled in grade two for the entire school year. The range in chronological age was from seven years and five months to nine years and two months at the time the second Stanford Achievement Test was given.

Results of the Otis Intelligence Test appear in Table II. The range was from 54 to 137. Forty-four per cent of the children had normal scores falling between ninety and one hundred nine. Less than five per cent had scores between eighty and eighty-nine and were classified as dull. Only 2.3 per cent were below seventy and classified as borderline deficiency cases.

At the opposite end of the scale, 18.6 per cent with scores between 110 and 119 were superior. Over 30 per cent with scores between 120 and 139 were very superior. None had I.Q.'s over 140, which would rate them as genius. These ratings were established by Greene, Jorgensen, and Gerberich.[1]

The data given in Table II were shown graphically in

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[1]Harry A. Greene, Albert N. Jorgensen, and J. Raymond Gerberich, Measurement and Evaluation in the Elementary School (New York: Longman's, Greene and Company, 1953), p. 265, citing Lewis M. Terman and Maud A. Merrill, Measuring Intelligence, A Guide to Administration of the New-Revised Stanford-Binet Tests of Intelligence (Boston: Houghton Mifflin Company, 1937), p. 265.

Figure 1.

Table III shows the results of the achievement test. Scores ranged from a high of 4.5 to a low of 1.2 at the second testing. The median was 3.2. The first quartile fell at 3.8 and the third quartile at 2.9. Thirty-six of the pupils were at grade level or above. Only seven were achieving below grade level.

Table IV shows the chronological age at the end of the year, I.Q. scores, age and grade equivalents at both the beginning and end of the year, and the achievement gain or loss in years and months.

In order to compare individual ability and achievement according to a plan suggested by Symonds,[2] the pupils were listed and ranks assigned for results of both the intelligence and achievement tests. These ranks appear in Table V. Pupil 11 ranked highest on the intelligence test and eighth on achievement. Pupil 2 was second on achievement and thirty-first in intelligence. Pupil 43 was last on both tests.

Two children in the class failed in the first grade. Three repeated the second grade because of low grades. Two repeated because time had been lost due to illness.

In summary, this group would be classed as a superior

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[2]Percival M. Symonds, Measurement in Secondary Education (New York: The Macmillan Company, 1928), pp. 521-25.

TABLE II

A DISTRIBUTION OF INTELLIGENCE QUOTIENTS IN GRADE TWO

Range	Frequency	Per cent
140-149	0	0
130-139	4	9.3
120-129	9	20.9
110-119	8	18.6
100-109	13	30.2
90-99	6	14.0
80-89	2	4.7
70-79	0	0
Below 70	1	2.3
	43	100.0

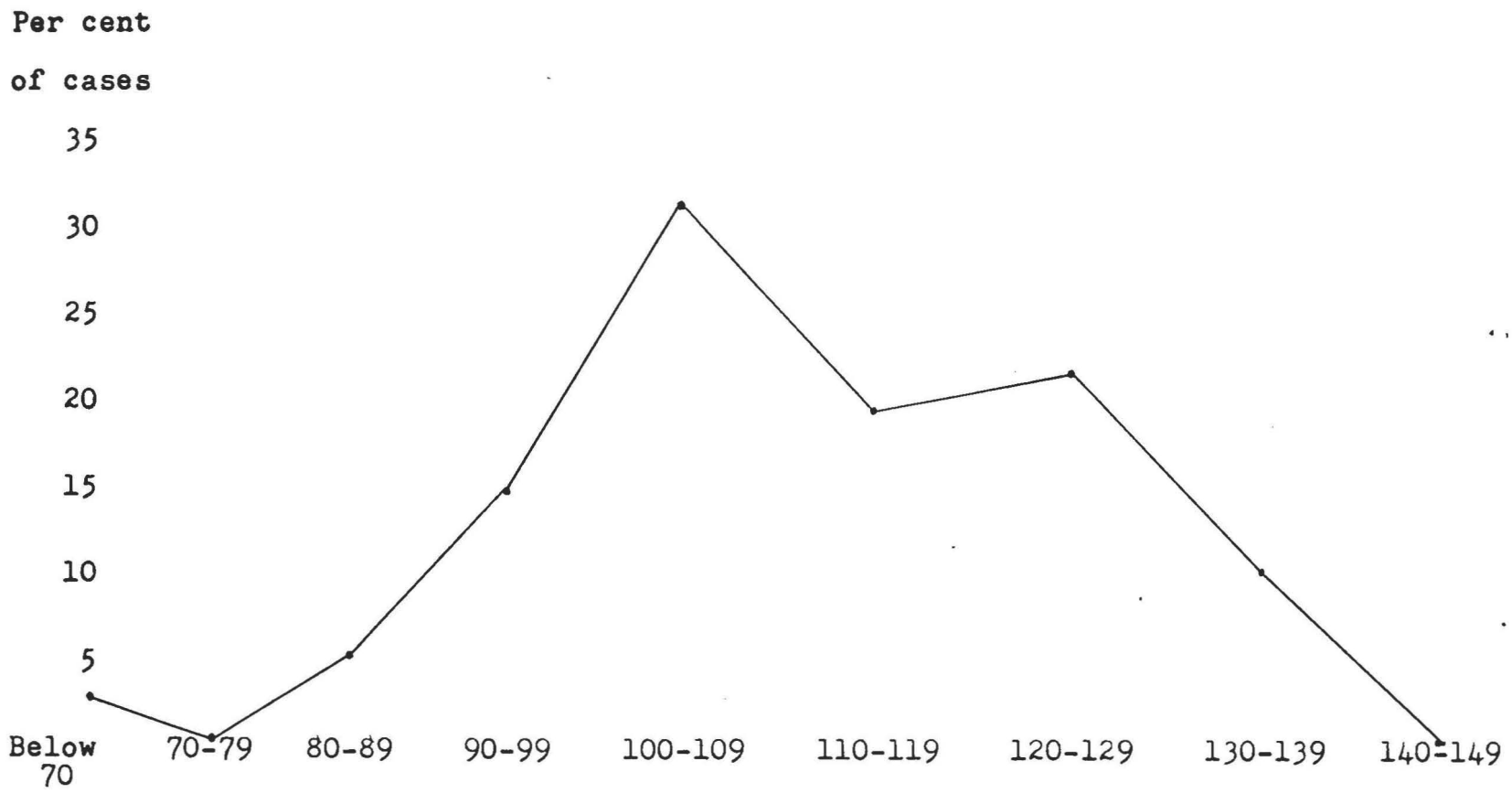

FIGURE 1

DISTRIBUTION OF THE INTELLIGENCE QUOTIENTS OF PUPILS IN GRADE TWO

TABLE III

GRADE PLACEMENT OF SECOND GRADE PUPILS AS COMPARED WITH NORMS FOR STANFORD ACHIEVEMENT SCORES

Grade placement	2.8
Stanford norm	
9.0	
8.5--8.9	
8.0--8.4	
7.5--7.9	
7.0--7.4	
6.5--6.9	
6.0--6.4	
5.5--5.9	
5.0--5.4	
4.5--4.9	3
4.0--4.4	4
3.5--3.9	8
3.0--3.4	13
2.5--2.9	10
2.0--2.4	3
1.5--1.9	0
1.0--1.4	1
Total	43
Median	3.2

TABLE IV

DATA FOR GRADE TWO

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test Equivalents				Gain or less in years and months
	Yrs.	Mos.		Grade 2.1	Age	Grade 2.8	Age	
1.____	7	9	127	1.8	6-10	4.5	9-6	+2.7
2.____	7	11	103	2.0	7-1	4.4	9-5	+2.4
3.____	8	1	121	2.3	7-4	4.4	9-5	+2.1
4.____	8	1	112	2.1	7-2	4.2	9-3	+2.1
5.____	8	3	127	2.4	7-5	4.2	9-3	+1.8
6.____	7	10	134	2.1	7-2	4.2	9-3	+2.1
7.____	7	6	127	2.4	7-5	4.0	9-0	+1.6
8.____	8	2	106	2.4	7-5	3.8	8-10	+1.4
9.____	8	4	133	2.8	7-10	3.8	8-10	+1.0
10.____	8	3	125	1.7	6-9	3.8	8-10	+2.1
11.____	7	6	137	2.1	7-2	3.8	8-10	+1.7
12.____	7	7	126	2.5	7-7	3.7	8-9	+1.2
13.____	7	8	128	2.7	7-9	3.6	8-8	+ .9
14.____	8	0	104	1.9	6-11	3.6	8-8	+1.7
15.____	8	2	107	2.1	7-2	3.6	8-8	+1.5
16.____	7	5	109	2.3	7-4	3.5	8-6	+1.2
17.____	7	11	112	1.8	6-10	3.4	8-5	+1.6
18.____	7	8	115	2.1	7-2	3.3	8-4	+1.2
19.____	7	10	117	2.0	7-1	3.3	8-4	+1.3
20.____	7	5	111	1.9	6-11	3.3	8-4	+1.6
21.____	7	5	134	2.3	7-4	3.3	8-4	+1.0
22.____	7	10	104	1.6	6-8	3.2	8-3	+1.6
23.____	7	6	111	1.8	6-10	3.2	8-3	+1.4
24.____	8	10	87	1.9	6-11	3.2	8-3	+1.3
25.____	8	1	98	1.6	6-8	3.1	8-1	+1.5
26.____	7	8	109	2.0	7-1	3.0	8-0	+1.0
27.____	7	11	121	2.0	7-1	3.0	8-0	+1.0

TABLE IV. (continued)

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test				Gain or loss in years and months
				Equivalents				
	Yrs.	Mos.		Grade 2.1	Age	Grade 2.8	Age	
28.____	8	8	93	2.0	7-1	3.0	8-0	+1.0
29.____	8	9	112	1.7	6-9	3.0	8-0	+1.3
30.____	7	6	105	1.6	6-8	2.9	7-11	+1.3
31.____	7	9	99	1.7	6-9	2.9	7-11	+1.2
32.____	8	0	106	1.4	6-5	2.9	7-11	+1.5
33.____	7	9	126	1.8	6-10	2.9	7-11	+1.1
34.____	8	4	108	1.8	6-10	2.9	7-11	+1.1
35.____	7	10	98	1.5	6-7	2.8	7-10	+1.3
36.____	7	7	91	1.5	6-7	2.8	7-10	+1.3
37.____	7	11	101	1.8	6-10	2.7	7-9	+ .9
38.____	7	10	103	1.4	6-5	2.6	7-8	+1.2
39.____	8	3	113	2.1	7-2	2.5	7-7	+ .4
40.____	8	11	88	1.7	6-9	2.2	7-3	+ .5
41.____	9	2	100	1.8	6-10	2.1	7-2	+ .3
42.____	7	9	93	1.3	6-4	2.0	7-1	+ .7
43.____	9	0	54	Below grade		1.2	6-3	
Median	7	11	109	1.9	6-11	3.2	8-3	+1.3

NOTE: Ages given in columns two and three are at the end of the year.

TABLE V

CLASS RANKS IN GRADE TWO ON INTELLIGENCE AND ACHIEVEMENT TESTS

Pupil's name	Rank	
	Intelligence test	Achievement test
1._____	6.3	1.0
2._____	31.5	2.5
3._____	12.5	2.5
4._____	17.3	4.3
5._____	6.3	4.3
6._____	2.5	4.3
7._____	6.3	7.0
8._____	26.5	8.25
9._____	4.0	8.25
10._____	11.0	8.25
11._____	1.0	8.25
12._____	9.5	12.0
13._____	5.0	13.33
14._____	29.5	13.33
15._____	25.0	13.33
16._____	22.5	16.0
17._____	17.3	17.0
18._____	15.0	18.25
19._____	14.0	18.25
20._____	20.5	18.25
21._____	2.5	18.25
22._____	29.5	22.33
23._____	20.5	22.33
24._____	42.0	22.33
25._____	36.5	25.0
26._____	22.5	26.25
27._____	12.5	26.25
28._____	38.5	26.25
29._____	17.3	26.25
30._____	28.0	30.2
31._____	35.0	30.2
32._____	26.5	30.2
33._____	9.5	30.2
34._____	24.0	30.2
35._____	36.5	35.5
36._____	40.0	35.5
37._____	33.0	37.0
38._____	31.5	38.0
39._____	16.0	39.0

TABLE V (continued)

Pupil's name	Rank	
	Intelligence test	Achievement test
40._____	41.0	40.0
41._____	34.0	41.0
42._____	38.5	42.0
43._____	43.0	43.0

group. Only seven per cent had subnormal intelligence test scores. Thirty-six were achieving at or above their grade level. Vast differences were noted in some instances between ranks on the intelligence and achievement tests.

Grade three. The third grade had a total of twenty-nine pupils, ranging in chronological age from eight years to ten years and five months when the second Stanford Achievement Test was given.

Results obtained from the Otis Intelligence Tests are indicated in Table VI. I.Q.'s ranged from 77 to 138. Nearly thirty-eight per cent had normal intelligence. Nearly fourteen per cent were superior, forty-one per cent very superior, and none was genius. There were 3.5 per cent dull and another 3.5 per cent borderline deficiency. These facts are shown graphically in Figure 2.

Table VII shows that the grade placement indicated by the Stanford Achievement Test ranged from 3.0 to 5.1 at the second testing.

Table VIII indicates the chronological age at the end of the year, the I.Q. of each pupil, grade, and age equivalents at the beginning and end of the year, and the achievement gain or loss in years and months.

The median on the second Stanford Achievement Test was 4.2. The first quartile was 4.7 and the third quartile was 3.8. Twenty-three of the twenty-nine were achieving at

TABLE VI

A DISTRIBUTION OF INTELLIGENCE QUOTIENTS IN GRADE THREE

Range	Frequency	Per cent
140-149	0	0
130-139	5	17.2
120-129	7	24.1
110-119	4	13.8
100-109	6	20.7
90-99	5	17.2
80-89	1	3.5
70-79	1	3.5
Below 70	0	0
	29	100.0

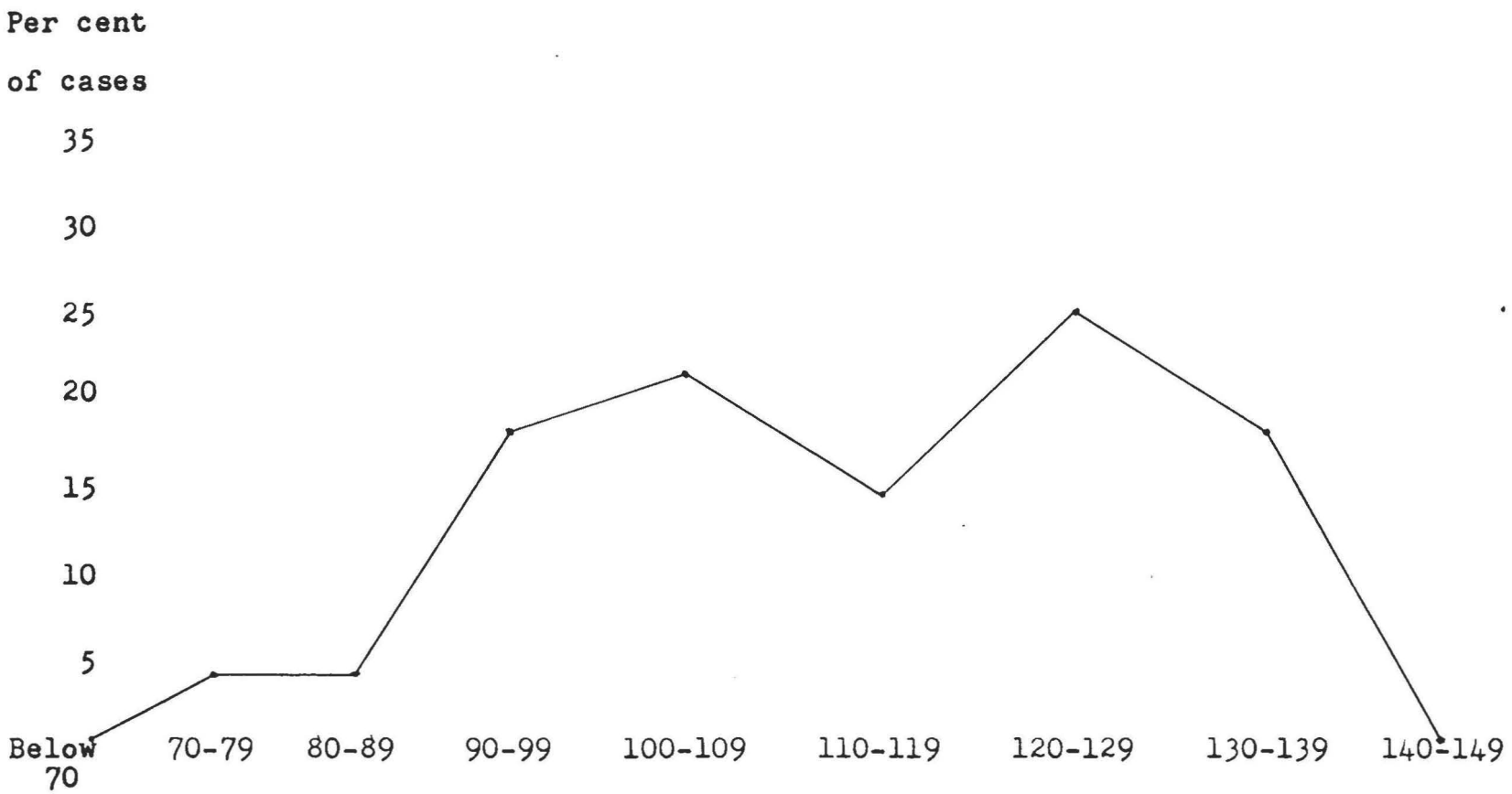

FIGURE 2

DISTRIBUTION OF THE INTELLIGENCE QUOTIENTS OF PUPILS IN GRADE THREE

TABLE VII

GRADE PLACEMENT OF THIRD GRADE PUPILS AS COMPARED WITH NORMS FOR STANFORD ACHIEVEMENT SCORES

Grade placement	3.8
Stanford norm	
9.0	
8.5--8.9	
8.0--8.4	
7.5--7.9	
7.0--7.4	
6.5--6.9	
6.0--6.4	
5.5--5.9	
5.0--5.4	3
4.5--4.9	8
4.0--4.4	8
3.5--3.9	7
3.0--3.4	3
2.5--2.9	0
2.0--2.4	0
1.5--1.9	0
1.0--1.4	0
Total	29
Median	4.2

TABLE VIII

DATA FOR GRADE THREE

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test				Gain or loss in years and months
				Equivalents				
	Yrs.	Mos.		Grade 3.1	Age	Grade 3.8	Age	
1._____	9	3	125	3.5	8-6	5.1	10-1	+ 1.6
2._____	8	7	135	4.2	9-3	5.0	10-0	+ .8
3._____	8	0	138	2.9	7-11	5.0	10-0	+ 2.1
4._____	9	3	130	3.7	8-9	4.9	9-11	+ 1.2
5._____	8	11	124	3.5	8-6	4.9	9-11	+ 1.4
6._____	8	11	137	3.3	8-4	4.8	9-10	+ 1.5
7._____	8	9	121	3.5	8-6	4.7	9-9	+ 1.2
8._____	9	1	121	3.7	8-9	4.7	9-9	+ 1.0
9._____	9	4	115	3.4	8-5	4.7	9-9	+ 1.3
10._____	8	9	128	3.1	8-1	4.5	9-6	+ 1.4
11._____	9	6	110	3.2	8-3	4.5	9-6	+ 1.3
12._____	8	9	107	3.3	8-4	4.4	9-5	+ 1.1
13._____	8	10	135	4.2	9-3	4.3	9-4	+ .1
14._____	8	8	125	4.2	9-3	4.2	9-3	.0
15._____	9	3	103	3.2	8-3	4.2	9-3	+ 1.0
16._____	9	0	109	2.5	7-7	4.1	9-1	+ .9
17._____	8	8	114	3.3	8-4	4.0	9-0	+ .7
18._____	9	5	108	2.8	7-10	4.0	9-0	+ 1.2
19._____	9	3	98	2.9	7-11	4.0	9-0	+ 1.1
20._____	9	6	99	2.7	7-9	3.9	8-11	+ 1.2
21._____	9	5	89	2.6	7-8	3.8	8-10	+ 1.2
22._____	8	7	107	2.5	7-7	3.8	8-10	+ 1.3
23._____	8	6	112	2.8	7-10	3.8	8-10	+ 1.0

TABLE VIII (continued)

Pupil's name	Age		Otis I.Q. score	Stanford Achievement Test				Gain or loss in years and months
	Yrs.	Mos.		Equivalents				
				Grade 3.1	Age	Grade 3.8	Age	
24.____	9	8	98	2.7	7-9	3.7	8-9	+1.0
25.____	9	9	98	2.7	7-9	3.7	8-9	+1.0
26.____	10	4	107	3.1	8-1	3.5	8-6	- .4
27.____	8	6	123	2.4	7-5	3.4	8-5	+1.0
28.____	10	3	95	1.8	6-10	3.3	8-4	+1.5
29.____	10	5	77	2.5	7-7	3.0	8-0	+ .5
Median	9	1	112	3.1	8-1	4.2	9-3	+1.1

NOTE: Ages given in columns two and three are at the end of the year.

or above grade level.

A comparison of individual ranks of test results on the intelligence and achievement tests was given in Table IX. Some interesting comparisons were noted. The child with the highest achievement score ranked seventh on the intelligence test. The child highest in intelligence was second on achievement. Pupil 27 ranked tenth in intelligence and twenty-seventh in achievement. He was not achieving in terms of his apparent potential. One would expect the rankings to be closer.

Six of these children have failed for one year. One was retarded because of illness.

In summary, this group as a whole was superior in intelligence. Ninety-three per cent had I.Q.'s which are normal or above. Twenty-three of the twenty-nine were achieving at or above grade level. While the group as a whole was achieving in proportion to ability, several cases were noted where the wide difference between ranks on the test indicated failure of some children to achieve as one would expect them to.

Grade four. There were thirty pupils in grade four, ranging in chronological age from eight years and six months to eleven years and one month when the second Stanford Achievement Test was given.

TABLE IX

CLASS RANKS IN GRADE THREE ON INTELLIGENCE AND ACHIEVEMENT TESTS

Pupil's name	Rank	
	Intelligence test	Achievement test
1._____	7.5	1.0
2._____	3.5	2.5
3._____	1.0	2.5
4._____	5.0	4.5
5._____	9.0	4.5
6._____	2.0	6.0
7._____	11.5	7.3
8._____	11.5	7.3
9._____	13.0	7.3
10._____	6.0	10.5
11._____	16.0	10.5
12._____	19.3	12.0
13._____	3.5	13.0
14._____	7.5	14.5
15._____	22.0	14.5
16._____	17.0	16.0
17._____	14.0	17.3
18._____	18.0	17.3
19._____	24.3	17.3
20._____	23.0	20.0
21._____	28.0	21.3
22._____	19.3	21.3
23._____	15.0	21.3
24._____	24.3	24.5
25._____	24.3	24.5
26._____	19.3	26.0
27._____	10.0	27.0
28._____	27.0	28.0
29.	29.0	29.0

Results of the Otis Intelligence Test are given in Table X. The range of I.Q.'s was from 80 to 140. There were 36.7 per cent who had intelligence quotients which rated them normal. Thirty-three and three-tenths per cent were superior, 20 per cent very superior, and 3.3 per cent were classified as "near" genius. Only 6.7 per cent were dull and none was feeble-minded. The above-mentioned data are shown graphically in Figure 3.

The grade placement of pupils as compared with norms for Stanford Achievement Test scores is shown in Table XI. At the second testing the scores ranged from 1.3 to 7.2.

Various data about each class member including chronological age at the end of the year, I.Q., grade, and age equivalents at each achievement testing, and the gain or loss in achievement during the school year are shown in Table XII.

The median chronological age was 9 years and 9 months. The median I.Q. was 113. Median grade placement on the second Stanford Achievement Test was 5.6, the first quartile was 5.8, and the third quartile was 4.8. The median gain was 1.4. Twenty-four were achieving at grade level or above.

In Table XIII each pupil was ranked on both the intelligence and achievement tests. This would tend to indicate whether or not a child was achieving as he should, considering only his intelligence. Pupil 1 ranked highest on both tests. Pupil 29 and pupil 30 had identical ranks on both

TABLE X

A DISTRIBUTION OF INTELLIGENCE QUOTIENTS IN GRADE FOUR

Range	Frequency	Per cent
140-149	1	3.3
130-139	0	0.
120-129	6	20.
110-119	10	33.3
100-109	9	30.
90-99	2	6.7
80-89	2	6.7
70-79	0	0.
Below 70	0	0.
	30	100.0

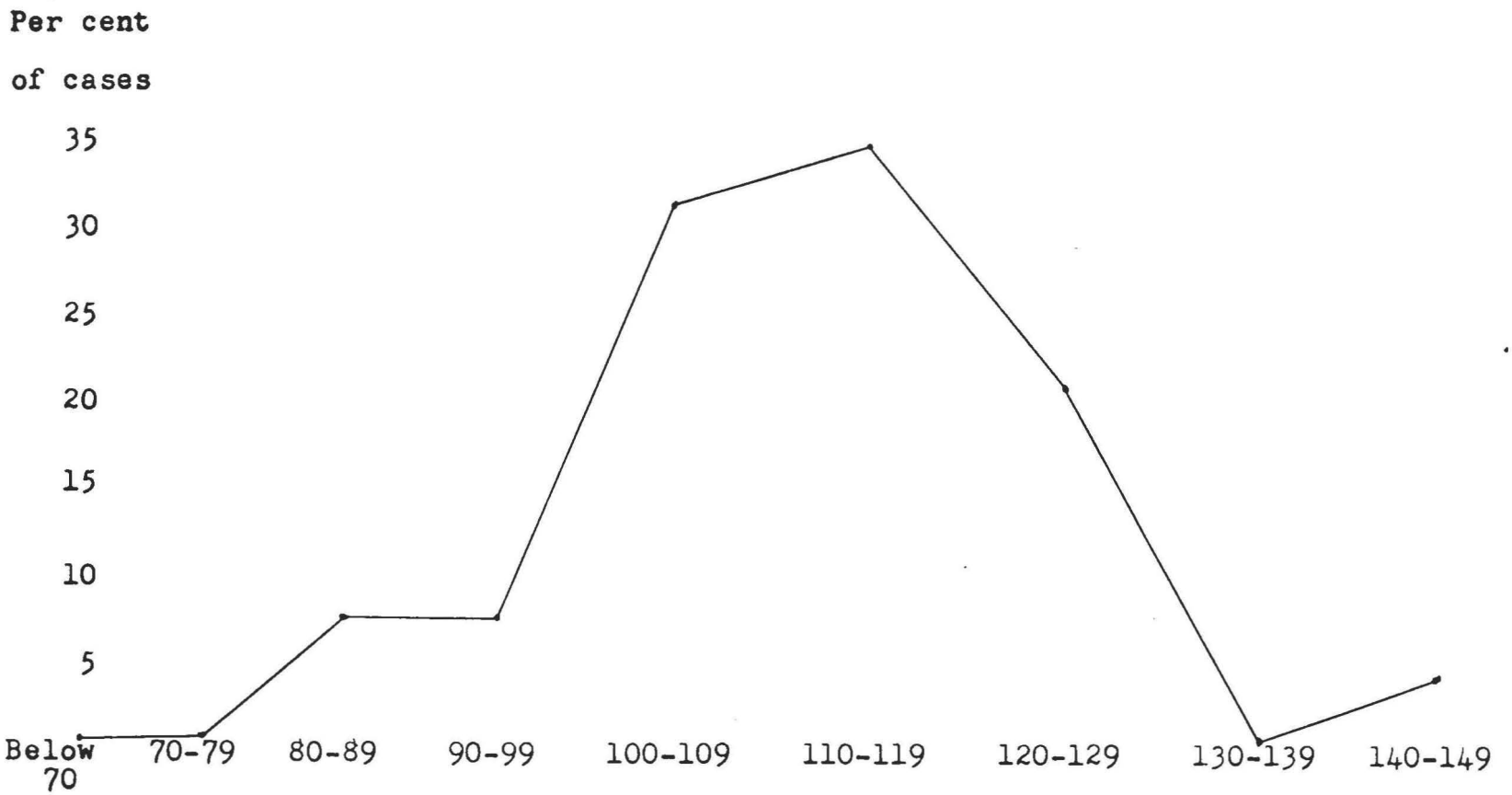

FIGURE 3

DISTRIBUTION OF THE INTELLIGENCE QUOTIENTS OF PUPILS IN GRADE FOUR

TABLE XI

GRADE PLACEMENT OF FOURTH GRADE PUPILS AS COMPARED WITH NORMS FOR STANFORD ACHIEVEMENT SCORES

Grade placement	4.8
Stanford norm	
9.0	
8.5--8.9	
8.0--8.4	
7.5--7.9	
7.0--7.4	2
6.5--6.9	4
6.0--6.4	0
5.5--5.9	11
5.0--5.4	5
4.5--4.9	4
4.0--4.4	2
3.5--3.9	1
3.0--3.4	0
2.5--2.9	0
2.0--2.4	0
1.5--1.9	0
1.0--1.4	1
Total	30
Median	5.6

TABLE XII

DATA FOR GRADE FOUR

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test Equivalents				Gain or loss in years and months
	Yrs.	Mos.		Grade 4.1	Age	Grade 4.8	Age	
1.____	8	6	140	6.3	11-3	7.2	12-2	+ .9
2.____	10	0	116	5.6	10-7	7.0	12-0	+1.4
3.____	10	2	113	5.3	10-4	6.8	11-9	+1.5
4.____	9	9	115	5.6	10-7	6.8	11-9	+1.2
5.____	9	5	125	4.8	9-10	6.7	11-8	+1.9
6.____	10	0	97	4.9	9-11	6.5	11-6	+1.6
7.____	9	6	120	4.7	9-9	5.9	10-11	+1.2
8.____	9	7	126	4.8	9-10	5.8	10-10	+1.0
9.____	10	3	117	4.1	9-1	5.8	10-10	+1.7
10.____	9	11	114	4.0	9-0	5.8	10-10	+1.8
11.____	9	9	104	4.1	9-1	5.7	10-8	+1.6
12.____	9	4	117	4.7	9-9	5.6	10-7	+ .9
13.____	9	5	123	3.7	8-9	5.6	10-7	+1.9
14.____	9	11	107	3.6	8-8	5.6	10-7	+2.0
15.____	9	9	106	4.2	9-3	5.6	10-7	+1.4
16.____	9	5	107	5.0	10-0	5.5	10-6	+ .5
17.____	9	8	107	3.5	8-6	5.5	10-6	+2.0
18.____	10	5	119	4.7	9-9	5.4	10-5	+ .7
19.____	9	8	123	3.9	8-11	5.3	10-4	+1.4
20.____	9	1	111	3.2	8-3	5.1	10-1	+1.9
21.____	9	8	111	3.5	8-6	5.0	10-0	+1.5
22.____	9	5	120	4.2	9-3	5.0	10-0	+ .8
23.____	10	8	100	3.7	8-9	4.9	9-11	+1.2

TABLE XII (continued)

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test				Gain or loss in years and months
				Equivalents				
	Yrs.	MMos.		Grade 4.1	Age	Grade 4.8	Age	
24._____	9	4	117	3.5	8-6	4.8	9-10	+1.3
25._____	9	7	103	3.4	8-5	4.7	9-9	+1.3
26._____	10	11	101	3.2	8-3	4.7	9-9	+1.5
27._____	10	7	95	3.0	8-0	4.4	9-5	+1.4
28._____	11	0	107	2.9	7-11	4.2	9-3	+1.3
29._____	9	8	89	2.7	7-9	3.7	8-9	+1.0
30._____	11	1	80	1.5	6-7	1.3	6-4	- .2
Median	9	9	113	4.1	9-1	5.6	10-7	+1.4

NOTE: Ages given in columns two and three are at the end of the year.

TABLE XIII

CLASS RANKS IN GRADE FOUR ON INTELLIGENCE AND ACHIEVEMENT TESTS

Pupil's name	Rank	
	Intelligence test	Achievement test
1._____	1.0	1.0
2._____	12.0	2.0
3._____	15.0	3.5
4._____	13.0	3.5
5._____	3.0	5.0
6._____	27.0	6.0
7._____	6.5	7.0
8._____	2.0	8.3
9._____	9.3	8.3
10._____	14.0	8.3
11._____	23.0	11.0
12._____	9.3	12.25
13._____	4.5	12.25
14._____	18.25	12.25
15._____	22.0	12.25
16._____	18.25	16.5
17._____	18.25	16.5
18._____	8.0	18.0
19._____	4.5	19.0
20._____	16.5	20.0
21._____	16.5	21.5
22._____	6.5	21.5
23._____	26.0	23.0
24._____	9.3	24.0
25._____	24.0	25.5
26._____	25.0	25.5
27._____	28.0	27.0
28._____	18.25	28.0
29._____	29.0	29.0
30.	30.0	30.0

tests. Pupil 6 ranked twenty-seventh in intelligence and sixth in achievement. His achievement would indicate that he was working hard to achieve this rating. Pupil 22 ranked 6.5 in intelligence and 21.5 in achievement. Further investigation would perhaps reveal why he was not achieving in relation to the ability indicated by the test scores.

Four children have repeated one grade. One has repeated two grades. Two children were failed at the end of the school year 1953-1954.

In summary, the group was superior in intelligence. Only 6.7 per cent were sub-normal, and 3.3 per cent were "near" genius. Eighty per cent of the group were achieving at grade level, but individual ranks on the two tests indicated examples of children who were not achieving in relation to their potential indicated by intelligence scores.

Grade five. Grade five was comprised of fifty-six pupils ranging in chronological age from ten years and four months to fourteen years and five months at the time of administration of the second Stanford Achievement Test.

Results of the Otis Intelligence Test appear in Table XIV. The range of I.Q. was from 66 to 128. Fifty per cent had normal I.Q.'s ranging from ninety to one hundred nine. Twelve and a half per cent were below average with I.Q.'s from eighty to eighty-nine. Seven and two-tenths per cent were dull or feeble-minded. At the opposite end of the

TABLE XIV

A DISTRIBUTION OF INTELLIGENCE QUOTIENTS IN GRADE FIVE

Range	Frequency	Per cent
140-149	0	0
130-139	0	0
120-129	4	7.1
110-119	13	23.2
100-109	15	26.8
90-99	13	23.2
80-89	7	12.5
70-79	3	5.4
Below 70	1	1.8
	56	100.0

scale, twenty-three and two-tenths per cent had scores between one hundred ten and one hundred nineteen, which rated them above average. Four children, or seven and one-tenth per cent of the group, made scores between one hundred twenty and one hundred twenty-nine, which would classify them as superior. None of the group rated very superior or genius. These data are shown graphically in Figure 4.

Table XV gives the chronological age at the end of the year, the I.Q. score, the grade equivalent and age equivalent at the beginning and end of the year, and the achievement gain or loss in years and months of each pupil.

Table XVI indicates grade placement based on the Stanford Achievement Tests at the end of the year. The range was from 2.7 to 9.0. The median at the second testing was 5.7. The first quartile fell at 6.7 and the third quartile at 4.8. This indicates that the group as a whole was one month below grade level. Twenty-six of the fifty-six pupils had a grade equivalent of 5.8 or above.

These twenty-six pupils comprised 46.4 per cent of the group. It was noted previously that 80.3 per cent had normal or above-normal intelligence. It becomes evident that many are failing to achieve what their potential would allow, as evidenced by test scores.

In order to compare individual ability and achievement, the pupils were listed and their class rank was given

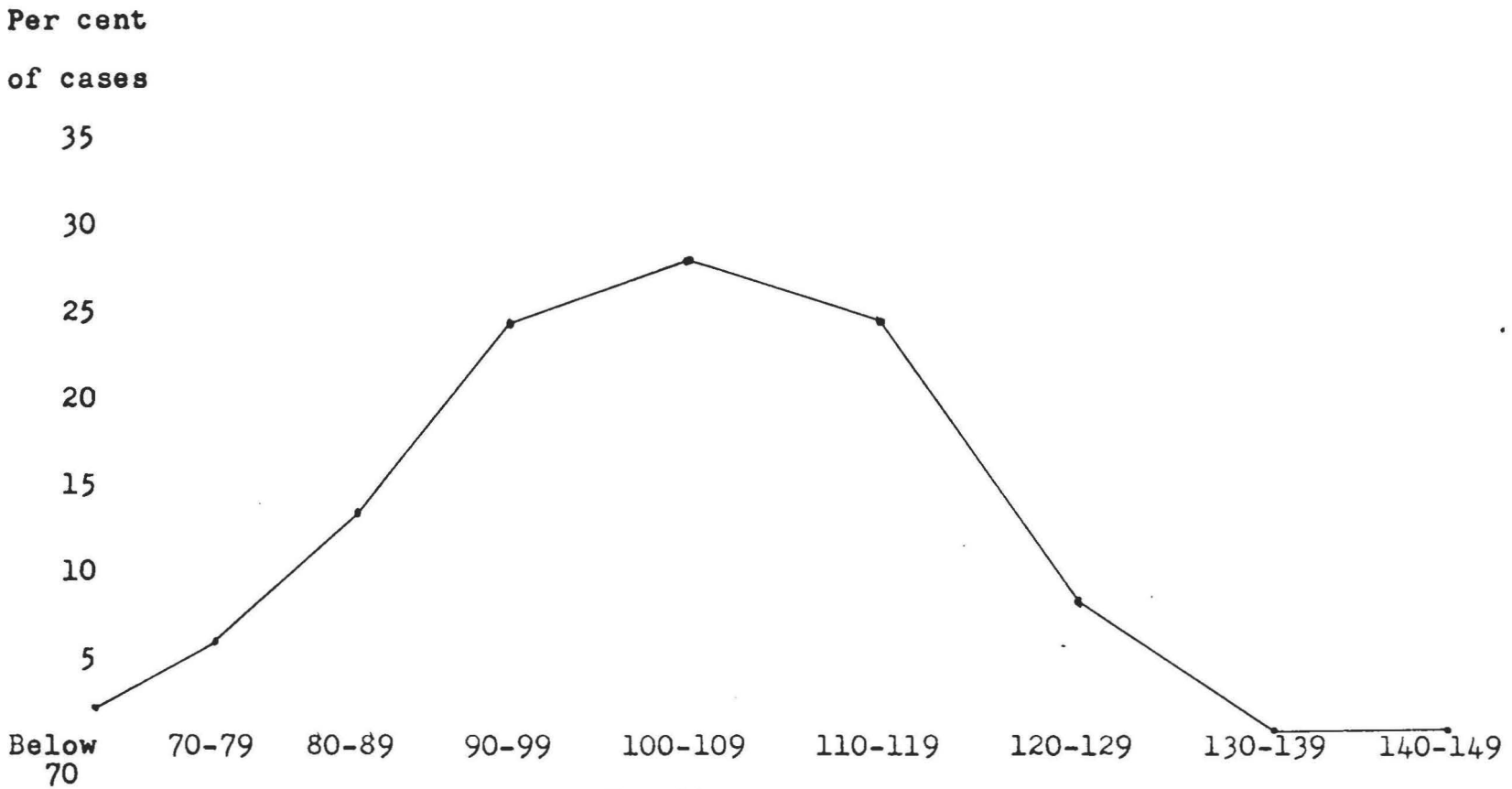

FIGURE 4

DISTRIBUTION OF THE INTELLIGENCE QUOTIENTS OF PUPILS IN GRADE FIVE

TABLE XV

DATA FOR GRADE FIVE

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test				Gain or loss in years and months
				Equivalents				
	Yrs.	Mos.		Grade 5.1	Age	Grade 5.8	Age	
1.____	10	10	121	7.2	12-2	9.0	14-0	+1.8
2.____	10	5	115	5.4	10-5	8.1	13-1	+2.7
3.____	11	1	128	5.7	10-8	8.0	13-0	+2.3
4.____	11	0	112	6.0	11-0	7.9	12-11	+1.9
5.____	10	9	119	6.6	11-7	7.8	12-9	+1.2
6.____	11	3	127	7.3	12-3	7.7	12-8	+ .4
7.____	10	10	121	6.3	11-3	7.6	12-7	+1.3
8.____	10	6	119	5.7	10-8	7.6	12-7	+1.9
9.____	11	1	119	6.3	11-3	7.4	12-4	+1.1
10.____	10	7	113	6.2	11-2	7.1	12-1	+ .9
11.____	10	6	111	4.8	9-10	6.9	11-10	+2.1
12.____	10	9	116	5.2	10-2	6.8	11-9	+1.6
13.____	10	4	118	5.7	10-8	6.7	11-8	+1.0
14.____	11	2	103	5.1	10-1	6.7	11-8	+1.6
15.____	10	9	105	4.8	9-10	6.4	11-4	+1.6
16.____	11	1	119	4.9	9-11	6.3	11-3	+1.4
17.____	10	10	102	5.0	10-0	6.3	11-3	+1.3
18.____	10	11	106	4.9	9-11	6.2	11-2	+1.3
19.____	10	7	112	4.7	9-9	6.0	11-0	+1.3
20.____	10	10	105	4.7	9-9	6.0	11-0	+1.3
21.____	10	8	109	5.9	10-11	5.9	10-11	0.
22.____	10	7	108	4.5	9-6	5.9	10-11	+1.4
23.____	10	10	105	5.3	10-4	5.9	10-11	+ .6
24.____	10	8	110	4.8	9-10	5.9	10-11	+1.1

TABLE XV (continued)

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test				Gain or loss in years and months
				Equivalents				
	Yrs.	Mos.		Grade 5.1	Age	Grade 5.8	Age	
25.____	11	2	106	5.0	10-0	5.8	10-10	+ .8
26.____	10	6	102	4.3	9-4	5.8	10-10	+ 1.5
27.____	10	11	106	5.2	10-2	5.7	10-8	+ .5
28.____	10	7	107	4.2	9-3	5.7	10-8	+ 1.5
29.____	10	7	114	5.4	10-4	5.6	10-7	+ .2
30.____	12	1	92	4.1	9-1	5.5	10-6	+ 1.4
31.____	10	6	105	4.1	9-1	5.5	10-6	+ 1.4
32.____	10	11	102	5.0	10-0	5.5	10-6	+ .5
33.____	10	7	99	4.4	9-5	5.4	10-5	+ 1.0
34.____	11	10	97	4.2	9-3	5.4	10-5	+ 1.2
35.____	11	5	97	4.2	9-3	5.1	10-1	+ .9
36.____	11	5	93	4.2	9-3	5.1	10-1	+ .9
37.____	11	4	94	4.1	9-1	5.0	10-0	+ .9
38.____	12	10	81	4.1	9-1	5.0	10-0	+ .9
39.____	12	3	88	4.0	9-0	5.0	11-0	+ 1.0
40.____	12	2	91	4.7	9-9	4.9	9-11	+ .2
41.____	10	7	95	3.4	8-5	4.8	9-10	+ 1.0
42.____	10	6	97	3.8	8-10	4.8	9-10	+ .9
43.____	10	11	96	3.9	8-11	4.8	9-10	+ .9
44.____	11	3	103	4.1	9-1	4.8	9-10	+ .7
45.____	11	9	92	4.3	9-4	4.8	9-10	+ .5
46.____	11	10	85	4.0	9-0	4.6	9-7	+ .6
47.____	12	8	89	3.5	8-6	4.5	9-6	+ 1.0
48.____	11	6	97	4.1	9-1	4.5	9-6	+ .4
49.____	11	1	92	4.4	9-5	4.2	9-3	- .2

TABLE XV (continued)

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test				Gain or loss in years and months
				Equivalents				
	Yrs.	Mos.		Grade 5.1	Age	Grade 5.8	Age	
50.____	11	9	84	3.4	8-5	3.7	8-9	+ .3
51.____	14	5	66	3.1	8-1	3.5	8-6	+ .4
52.____	12	8	76	2.3	7-4	3.5	8-6	+1.2
53.____	11	11	79	3.0	8-0	3.4	8-5	+ .4
54.____	13	7	73	3.3	8-4	3.2	8-3	- .1
55.____	11	6	80	2.9	7-11	3.1	8-1	+ .2
56.____	12	1	82	2.1	7-2	2.7	7-9	+ .6
Median	11	0	103	4.6	9-7	5.7	10-8	+1.1

NOTE: Ages given in columns two and three are at the end of the year.

TABLE XVI

GRADE PLACEMENT OF FIFTH GRADE PUPILS AS COMPARED WITH NORMS FOR STANFORD ACHIEVEMENT SCORES

Grade placement	5.8
Stanford norm	
9.0	1
8.5--8.9	0
8.0--8.4	2
7.5--7.9	5
7.0--7.4	2
6.5--6.9	4
6.0--6.4	6
5.5--5.9	12
5.0--5.4	7
4.5--4.9	9
4.0--4.4	1
3.5--3.9	3
3.0--3.4	3
2.5--2.9	1
2.0--2.4	0
1.5--1.9	0
1.0--1.4	0
Total	56
Median	5.7

on both the intelligence test and the achievement test. These ranks are shown in Table XVII.

These ranks would be expected to be rather close. If a child ranks high on the intelligence test and low on the achievement test, one might conclude that he is not using his ability as he might. Pupil number 16 and pupil number 29 are examples of such students.

Wider ranges of difference are noted in the upper half as compared with the lower half of the group. Five pupils in this latter group have failed because of poor grades. One of these five repeated both grades one and two. None of the children was retained at the close of the school year 1953-54.

In summary, the group as a whole had average intelligence. They were one month below level in achievement. Slightly less than half were achieving at grade level. There were outstanding examples of individuals whose performance on intelligence tests and achievement tests resulted in widely divergent scores.

Grade six. Fifty-three pupils comprised the group in grade six. Chronological ages ranged from eleven years and four months to thirteen years and ten months at the time of administration of the second Stanford Achievement Test.

Table XVIII indicates results obtained from the Otis Intelligence Test. I.Q.'s ranged from 83 to 124. Forty-

TABLE XVII

CLASS RANKS IN GRADE FIVE ON INTELLIGENCE AND ACHIEVEMENT TESTS

Pupil's name	Rank	
	Intelligence test	Achievement test
1._____	3.5	1.0
2._____	11.0	2.0
3._____	1.0	3.0
4._____	14.5	4.0
5._____	5.25	5.0
6._____	2.0	6.0
7._____	3.5	7.5
8._____	5.25	7.5
9._____	5.25	9.0
10._____	13.0	10.0
11._____	16.0	11.0
12._____	10.0	12.0
13._____	9.0	13.5
14._____	28.5	13.5
15._____	24.25	15.0
16._____	5.25	16.5
17._____	30.3	16.5
18._____	21.3	18.0
19._____	14.5	19.5
20._____	24.25	19.5
21._____	18.0	21.25
22._____	19.0	21.25
23._____	24.25	21.25
24._____	17.0	21.25
25._____	21.3	25.5
26._____	30.3	25.5
27._____	21.3	27.5
28._____	20.0	27.5
29._____	12.0	29.0
30._____	42.3	30.3
31._____	24.25	30.3
32._____	30.3	30.3
33._____	33.0	33.5
34._____	34.25	33.5
35._____	34.25	35.5
36._____	41.0	35.5
37._____	40.0	37.3
38._____	51.0	37.3
39._____	47.0	37.3

TABLE XVII (continued)

Pupil's name	Rank	
	Intelligence test	Achievement test
40._____	45.0	40.0
41._____	39.0	40.2
42._____	34.25	40.2
43._____	38.0	40.2
44._____	28.5	40.2
45._____	42.3	40.2
46._____	48.0	46.0
47._____	46.0	47.5
48._____	34.25	47.5
49._____	42.3	49.0
50._____	49.0	50.0
51._____	56.0	51.5
52._____	54.0	51.5
53._____	53.0	53.0
54._____	55.0	54.0
55._____	52.0	55.0
56.	50.0	56.0

TABLE XVIII

A DISTRIBUTION OF INTELLIGENCE QUOTIENTS IN GRADE SIX

Range	Frequency	Per cent
140-149	0	0
130-139	0	0
120-129	8	15.1
110-119	16	30.2
100-109	16	30.2
90-99	9	17.0
80-89	4	7.5
70-79	0	0
Below 70	0	0
	53	100.0

seven and two-tenths per cent had average intelligence. Seven and five-tenths per cent were below average. Thirty and two-tenths per cent were above average; fifteen and one-tenth per cent were superior. This information is shown graphically in Figure 5.

Various data about the group including chronological age at the end of the year, I.Q. scores, grade and age equivalents at the time of both first and second testing on achievement, and achievement gain or loss during the year are presented in Table XIX.

Table XX shows the grade placement at the end of the year as indicated by the achievement test.

Scores ranged from 2.9 to 10.3 on the Stanford Achievement Test. The median at the second testing was 6.8. The first quartile fell at 7.9 and the third quartile at 5.7. This indicates the group was achieving at grade level. Twenty-seven of the fifty-three pupils made scores of 6.8 or above, indicating that 50.9 per cent were at grade level or above. However, intelligence test results showed that 92.5 per cent had normal or above-normal intelligence. Thus, one infers that more than forty per cent are not achieving as much as they are capable of doing.

Table XXI shows each pupil's rank on the intelligence test and the second achievement test. Wide divergence of the two ranks indicates that the pupil is not achieving as much

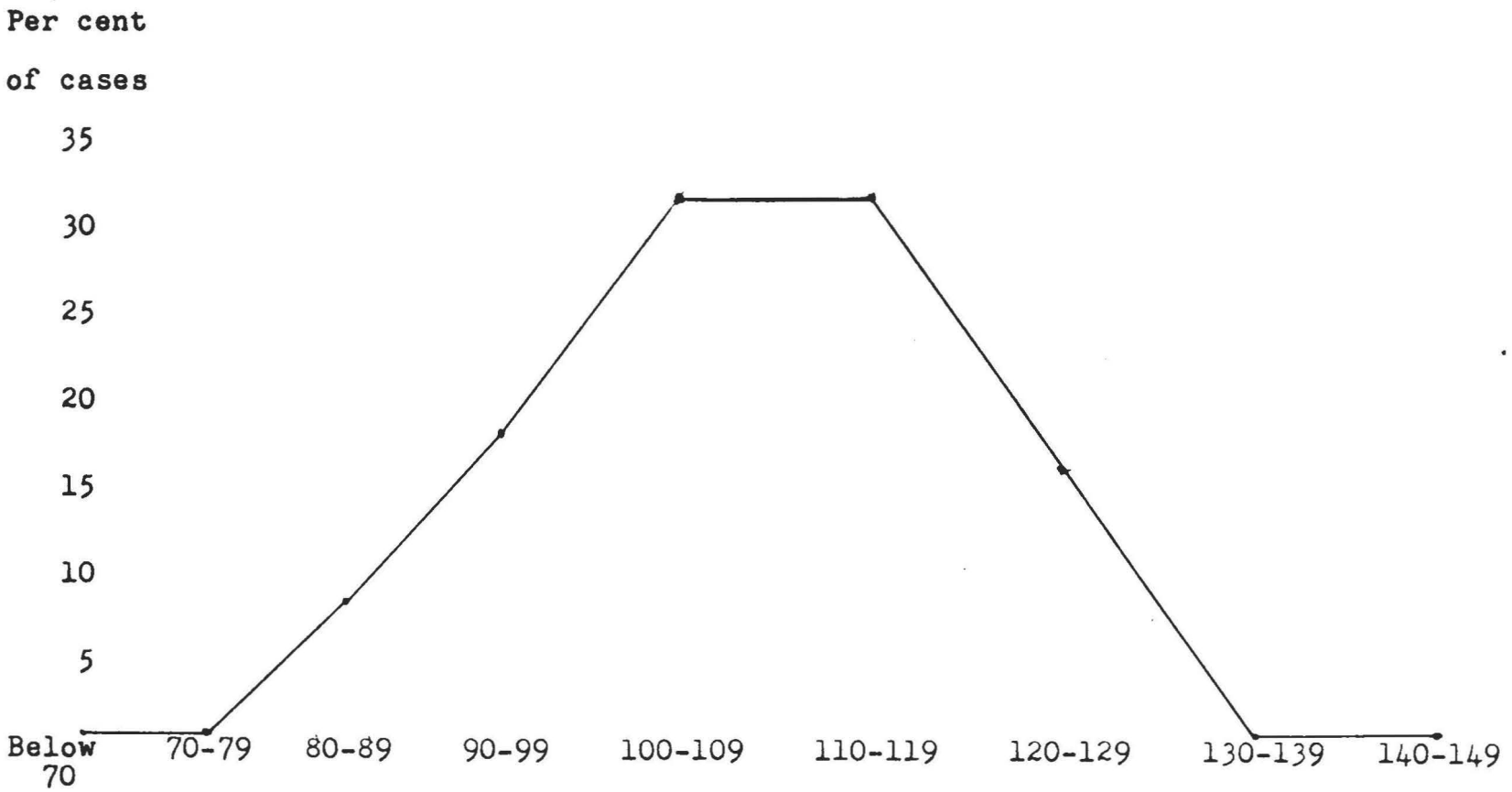

FIGURE 5

DISTRIBUTION OF THE INTELLIGENCE QUOTIENTS OF PUPILS IN GRADE SIX

TABLE XIX

DATA FOR GRADE SIX

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test				Gain or loss in years and months
				Equivalents				
	Yrs.	Mos.		Grade 6.1	Age	Grade 6.8	Age	
1.____	11	11	122	9.0	14-0	10.3	15-4	+1.3
2.____	11	10	122	8.3	13-4	9.9	14-11	+1.6
3.____	11	4	121	8.2	13-2	9.4	14-5	+1.2
4.____	12	3	123	7.4	12-4	9.4	14-5	+2.0
5.____	11	10	120	7.4	12-4	9.0	14-0	+1.6
6.____	11	11	112	7.4	12-4	8.8	13-10	+1.4
7.____	11	7	124	7.1	12-1	8.7	13-9	+1.6
8.____	12	3	122	8.4	13-5	8.6	13-7	+ .2
9.____	11	6	115	6.8	11-9	8.4	13-5	+1.6
10.____	12	3	119	7.6	12-7	8.1	13-1	+ .5
11.____	11	6	112	6.4	11-4	8.1	13-1	+1.7
12.____	11	11	114	7.5	12-6	8.0	13-0	+ .5
13.____	12	0	120	6.6	11-7	7.9	12-11	+1.3
14.____	12	2	110	6.3	11-7	7.9	12-11	+1.6
15.____	12	6	114	8.0	13-0	7.9	12-11	- .1
16.____	11	10	113	6.7	11-8	7.8	12-9	+1.1
17.____	11	5	119	6.3	11-3	7.7	12-8	+1.4
18.____	12	1	107	6.8	11-9	7.6	12-7	+ .8
19.____	11	10	114	6.8	11-9	7.6	12-7	+ .8
20.____	12	0	111	6.0	11-0	7.6	12-7	+1.6
21.____	12	4	100	4.8	9-10	7.5	12-6	+2.7
22.____	11	10	107	6.8	11-9	7.5	12-6	+ .7
23.____	11	7	119	6.4	11-4	7.3	12-3	+ .9
24.____	11	9	111	6.7	11-8	7.0	12-0	+ .3

TABLE XIX (continued)

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test				Gain or loss in years and months
				Equivalents				
	Yrs.	Mos.		Grade 6.1	Age	Grade 6.8	Age	
25.____	11	10	108	5.5	10-6	6.9	11-10	+ .3
26.____	11	7	110	5.2	10-2	6.8	11-9	+1.6
27.____	11	4	107	6.0	11-0	6.8	11-9	+1.8
28.____	12	11	104	5.6	10-7	6.7	11-8	+1.1
29.____	12	0	111	6.1	11-1	6.7	11-8	+ .6
30.____	12	5	115	6.2	11-2	6.5	11-6	+ .3
31.____	12	0	101	4.6	9-7	6.5	11-6	+1.9
32.____	12	5	106	5.3	10-4	6.4	11-4	+1.1
33.____	11	6	106	5.2	10-2	6.3	11-3	+1.1
34.____	11	4	114	4.9	9-11	6.3	11-3	+1.4
35.____	12	10	102	5.6	10-7	6.3	11-3	+ .7
36.____	11	8	105	5.0	10-0	6.2	11-2	+1.2
37.____	11	9	99	5.1	10-1	6.1	11-1	+1.0
38.____	11	5	107	4.5	9-6	6.1	11-1	+1.6
39.____	13	6	91	4.8	9-10	5.8	10-10	+1.0
40.____	12	1	104	5.0	10-0	5.7	10-8	+ .7
41.____	12	3	99	5.1	11-1	5.6	10-7	+ .5
42.____	11	10	99	4.4	9-5	5.6	10-7	+1.2
43.____	11	4	107	4.7	9-9	5.5	10-6	+ .8
44.____	12	4	95	3.9	8-11	5.5	10-6	+1.6
45.____	13	8	92	5.6	10-7	5.4	10-5	- .2
46.____	13	10	83	4.8	9-10	5.3	10-4	+ .5
47.____	13	0	96	4.1	9-1	5.2	10-2	+1.1
48.____	13	3	93	4.3	9-4	5.1	10-1	+ .8
49.____	12	4	88	3.8	8-10	5.1	10-1	+1.3

TABLE XIX (continued)

Pupil's name	Age		Otis I.Q. scores	Stanford Achievement Test				Gain or loss in years and months
				Equivalents				
	Yrs.	Mos.		Grade 6.1	Age	Grade 6.8	Age	
50._____	12	4	92	4.1	9-1	4.9	9-11	+ .8
51._____	11	5	102	3.8	8-10	4.9	9-11	+1.1
52._____	11	6	95	4.1	9-1	4.6	9-7	+ .5
53._____	12	4	86	2.6	7-8	2.9	7-11	+ .3
Median	11	11	107	5.7	10-8	6.8	11-9	+1.1

NOTE: Ages given in columns two and three are at the end of the year.

TABLE XX

GRADE PLACEMENT OF SIXTH GRADE PUPILS AS COMPARED WITH NORMS FOR STANFORD ACHIEVEMENT SCORES

Grade placement	6.8
Stanford norm	
10.0--10.4	1
9.5-- 9.9	1
9.0-- 9.4	3
8.5-- 8.9	3
8.0-- 8.4	4
7.5-- 7.9	10
7.0-- 7.4	2
6.5-- 6.9	7
6.0-- 6.4	7
5.5-- 5.9	6
5.0-- 5.4	5
4.5-- 4.9	3
4.0-- 4.4	0
3.5-- 3.9	0
3.0-- 3.4	0
2.5-- 2.9	1
2.0-- 2.4	0
1.5-- 1.9	0
1.0-- 1.4	0
Total	53
Median	6.7

TABLE XXI

CLASS RANKS IN GRADE SIX ON INTELLIGENCE AND ACHIEVEMENT TESTS

Pupil's name	Rank	
	Intelligence test	Achievement test
1._____	3.3	1.0
2._____	3.3	2.0
3._____	6.0	3.5
4._____	2.0	3.5
5._____	7.5	5.0
6._____	19.5	6.0
7._____	1.0	7.0
8._____	3.3	8.0
9._____	12.5	9.0
10._____	9.3	10.5
11._____	19.5	10.5
12._____	14.25	12.0
13._____	7.5	13.3
14._____	24.5	13.3
15._____	14.25	13.3
16._____	18.0	16.0
17._____	9.3	17.0
18._____	27.2	18.3
19._____	14.25	18.3
20._____	21.3	18.3
21._____	40.0	21.5
22._____	27.2	21.5
23._____	9.3	23.0
24._____	21.3	24.0
25._____	26.0	25.0
26._____	24.5	26.5
27._____	27.2	26.5
28._____	35.5	28.5
29._____	21.3	28.5
30._____	12.5	30.5
31._____	39.0	30.5
32._____	32.5	32.0
33._____	32.5	33.3
34._____	14.25	33.3
35._____	37.5	33.3
36._____	34.0	36.0
37._____	41.3	37.5
38._____	27.2	37.5
39._____	50.0	39.0

TABLE XXI (continued)

Pupil's name	Rank	
	Intelligence test	Achievement test
40._____	35.5	40.0
41._____	41.3	40.5
42._____	41.3	40.5
43._____	27.2	43.5
44._____	45.5	43.5
45._____	48.5	45.0
46._____	53.0	46.0
47._____	44.0	47.0
48._____	47.0	48.5
49._____	51.0	48.5
50._____	48.5	50.5
51._____	37.5	50.5
52._____	45.5	52.0
53._____	52.0	53.0

as his ability indicates it is possible for him to achieve.

Pupils number 30, 34, and 51 are examples of vast differences in class rank on the two tests.

Eleven of these children have failed in one grade, and two have failed twice. Two repeated a grade because of illness. None was failed at the close of the 1953-54 school year.

In summary, these children are not achieving in proportion to their ability. Intelligence test scores indicate this to be a superior group as only 7.5 per cent had intelligence scores classifying them as below normal. Having worked with this group, the investigator is inclined to agree with the above finding. While 92.5 per cent had normal intelligence, only 50.9 achieved at grade level or above.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary. The investigator set forth on this study with the following purpose in mind: (1) to compare her pupils in Meridian School on standard norms of achievement, (2) to determine whether pupils are achieving in proportion to their ability to learn, (3) to detect inconsistencies between tested ability and achievement; and (4) to draw some conclusions as to what might account for such inconsistencies.

It was pointed out at the beginning of this study that children differ in ability, interests, experiences, and background. To discover these differences, the teacher finds a testing program helpful. A teacher is successful when she can guide and encourage her pupils to live up to their potentialities.

Pupil ability was measured on the Otis Quick-Scoring Mental Ability Test. Results of the tests revealed I.Q.'s ranged from 54 to 140. Only 9.6 per cent had I.Q.'s which would class them as dull or with borderline deficiency. Over 43 per cent were normal. About 46 per cent were superior, and .66 per cent "near" genius.

Results of the Stanford Achievement Test revealed that the grade placement in grades two through six was from below grade one to grade nine. Of the 211 pupils tested,

136, or 64.4 per cent, were achieving at or above grade level. There were 75 pupils, or 35.6 per cent, who were below grade level in achievement.

Comparison of results of the two tests indicates that many are not achieving up to the point which they should.

The median gain in each grade was more than one year. This indicates desired progress.

Comparison of each pupil's class rank on both intelligence and achievement revealed significant discrepancies. Many further case studies could be made in the attempt to reveal reasons for these differences.

The school is making little if any provision for the 9.6 per cent of the pupils who are dull or bordering on feeble-mindedness. They buy the same books, use the same equipment, and attempt practically the same assignments as do the normal, superior, or even "near" genius. Crowded conditions and lack of materials and supplies are a great disadvantage in helping each child develop as well as he might.

Conclusions. The children in the grades studied follow the normal curve of distribution of intelligence.

The achievement scores indicate that many of these children are not achieving in proportion to their intelligence. Furthermore, the school is doing little for those children incapable of learning academic subjects.

Recommendations. 1. Teachers know that intelligence tests are helpful, but they also need to explore their limitations as pointed out by Havighurst.[1] Since every intelligence test depends on learning, it is admittedly not a pure test of ability to learn. Children with different cultural backgrounds respond differently to tests. Nevertheless, conscientious teachers can profitably use the existing tests until better culture-fair tests are ready.

2. Tests and studies should be used in an attempt to discover the abilities and interests of children having I.Q.'s which make it impossible for them to progress in the traditional school.

3. "Opportunity rooms" should be set up with special equipment and a specially trained staff to accommodate the mentally handicapped.

4. Provision should be made for superior children to have instruction that is challenging and satisfying.

Only when the school has made provision for children with all levels of mental ability will it be helping each to achieve in line with what he is capable of achieving. Only then will it be instrumental in helping each child to find his place in society.

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[1]Robert J. Havighurst, "Using the I.Q. Wisely," NEA Journal, 40:540-541, November, 1951.

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