

A STUDY OF THE EFFECT A DIVIDED  
TERM HAS UPON THE ACHIEVEMENT  
OF SEVENTH AND EIGHTH GRADE  
PUPILS

A STUDY OF THE EFFECT A DIVIDED  
TERM HAS UPON THE ACHIEVEMENT  
OF SEVENTH AND EIGHTH GRADE  
PUPILS

OKLAHOMA  
AGRICULTURAL & MECHANICAL COLLEGE  
LIBRARY  
NOV 8 1938

By

Jesse Morgan Welch

Bachelor of Science

Oklahoma Agricultural and Mechanical College

Stillwater, Oklahoma

1928

Submitted to the Department of Education  
Oklahoma Agricultural and Mechanical College  
In Partial Fulfillment of the Requirements  
For the degree of  
MASTER OF SCIENCE

1938

LIBRARY  
OKLAHOMA AGRICULTURAL & MECHANICAL COLLEGE  
STILLWATER OKLA

Approved:

OKLAHOMA  
AGRICULTURAL & MECHANICAL COLLEGE  
LIBRARY  
NOV 8 1938

*D. C. M. Intosh*  
In charge of Thesis

*N. C. Carr*  
Head of Department

*D. C. M. Intosh*  
Dean of Graduate School

109584

## ACKNOWLEDGEMENT

The writer wishes to express his appreciation to Doctor Congor, Dean of the School of Education, Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma, to Professor Dyess, Associate Professor of Education, Oklahoma Agricultural and Mechanical College, and chairman of his Thesis Committee, to Doctor Muerman, Professor of Rural and Visual Education, Oklahoma Agricultural and Mechanical College, and to Mr. E. D. Price, Superintendent of the Stillwater City Schools, members of my Thesis Committee, for their encouragement, helpful advice and criticism. The writer also wishes to express his appreciation to Noel Cruger, Superintendent of the Dill City Schools, and George O'Neal, Superintendent of Cordell City Schools, for their permission to use their schools in this study and for their loyal and cooperative attitude. And finally, the writer wishes to express his appreciation to the teachers and pupils of the seventh and eighth grades of the Port School, Dill City School, and the Cordell City School for their cooperation and help given in this study.

## TABLE OF CONTENTS

Chapter	Page
I. Introduction . . . . .	1
II. Description and Analysis of Data . . . . .	6
III. Compiling and Comparing Data . . . . .	37
IV. Summary and Conclusion . . . . .	45

## LIST OF TABLES

Table	Page
I Identification letters of the schools studied, and the number of pupils in the seventh and eighth grades of each.	5
II Chart illustrating the similarity of organization, length of term, and the experience and qualifications of the teachers in the seventh and eighth grades.	5
III Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Seventh Grade, School M.	7
IV New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Seventh Grade, School M.	9
V New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days school was in Session at the time of this last test, and the Number of Days each pupil had been present at the time of this test, in the Seventh Grade, School M.	11
VI Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Eighth Grade, School M.	13
VII New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Eighth Grade, School M.	15
VIII New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days school was in Session at the time of this last test, and the Number of Days each pupil had been Present at the time of this test, in the Eighth Grade, School M.	17

Table	Page
IX Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Seventh Grade, School N.	19
X New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Seventh Grade, School N.	20
XI New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. Number of Days school was in Session at the time of this last test, and the number of days each pupil had been present at the time of this test, in the Seventh Grade, School N.	21
XII Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Eighth Grade, School N.	23
XIII New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Eighth Grade, School N.	24
XIV New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days school was in Session at the time of this last test, and the Number of Days each pupil had been Present at the time of this test, in the Eighth Grade, School N.	25
XV Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average School Grade of the pupils of the Seventh Grade, School O.	27
XVI New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Seventh Grade, School O.	29

Table	Page
XVII New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days school was in Session at the time of this last test, and the Number of Days each pupil had been Present at the time of this test, in the Seventh Grade, School O.	31
XVIII Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Eighth Grade, School O.	33
XIX New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Eighth Grade, School O.	34
XX New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. Number of Days school was in Session at the time of this last test, and the Number of Days each pupil had been Present at the time of this test, in the Eighth Grade, School O.	35



## CHAPTER I

## Introduction

The purpose of this study is to determine, as nearly as possible, the effect that a divided or split term has on the achievement of the pupils in those schools employing this type of school term.

Divided or split term schools are those schools that are closed one or more times between the beginning and the closing of the regular school year for the purpose of permitting the pupils to take part in some local, seasonal enterprise, the school periods being arranged to conform with the times when the pupils are needed the least in the community enterprise.

In Oklahoma, the divided or split term schools, in general, are the rural, consolidated, and town or village schools in whose districts, or surrounding districts, the raising of cotton is the principal agricultural pursuit.

The cotton harvest, requiring a large amount of labor, comes during the school months of a regular school term and interferes with the attendance in school. In order to protect the school attendance record, the divided or split term schools were devised.

Classified according to the method of division, there are three general types of divided or split term systems. The first and most common type is the term that has only one break or division in the school year for the purpose of

allowing the pupils to take part in the community enterprise. In this case, taking for example some school in Washita county, school would begin after the cotton had been laid by and when a lull in the general farm work had occurred, sometime around the first of August, and would continue from six to eight weeks or until the cotton was ready to harvest. The school is then closed from four to eight weeks, until the crop has been harvested, when school re-opens and continues regularly, as far as cotton harvesting is concerned, until the close of the regular school year.

Type two is somewhat similar to type one, the only difference being that instead of having but one break for the purpose of harvesting there are several breaks, school being dismissed at intervals to harvest the cotton that has opened.

Type three is a modification of the first two types. In this case, the opening of the school term is the same but when the cotton first begins to open the school day is opened early in the morning, various activities are eliminated and the school day closes sometime around one o'clock to allow the pupils to gather the early opening cotton. This program is continued until almost all fields are ready to harvest and then school is closed completely until most of the fields are gathered when the part school and part work schedule is used again until all the cotton is gathered, after which the regular school day program is resumed.

The following is a graphic illustration of the three types of divided terms and a continuous term school:

Regular school day	_____	
Part school, part work	-----	
School not in session	.....	
Type I	<u>8 . . . 6 . . .</u>	<u>28</u>
Type II	<u>6 . 2 . 2 . . 5 . . 2 . 2 .</u>	<u>26</u>
Type III	<u>6 . 3 . . 4 . . 3 .</u>	<u>24</u>
Continuous term school		<u>36</u>

The numbers on the line indicate the number of weeks in the various divisions.

The recent school laws which have to do with the financing of State Aid Schools has caused these schools to make special effort to maintain the highest possible average daily attendance in order to qualify for more teachers and to keep the maintainance allowance as high as possible.

The schedules of all three types of divided or split term schools are so planned that the ending of the first and second semesters are about the same time, and as a rule, the closing dates of these schools do not differ more than a week from the continuous term school. About six weeks is the average amount of time the divided or split term schools in Washita county dismiss for cotton harvest.

A statistical study of the intelligence quotient, chronological age, educational age, educational score, and school grade was made, in the school year of 1937 - 38, in the

seventh and eighth grades of two schools having a divided term, and one in a school having a continuous term, in Washita county of Oklahoma.

The intelligence quotients were determined by the Otis Quick Scoring Mental Ability, Beta Tests, Form A, and the educational age, education scores, and educational grade were determined by the New Stanford Achievement Test, Forms V, W, and X. The tests were given by the superintendents of each school at the same corresponding time in their school terms. The Otis Quick Scoring Mental Ability, Beta Tests, Form A, and the New Stanford Achievement Test, Form V were given during the sixth week of the respective school terms; the new Stanford Achievement Test, Form W was given during the seventeenth week, and the New Stanford Achievement Test, Form X was given during the thirty-fifth week of the respective school terms.

The Achievement Test, Forms V, W, and X consist of equated tests in reading, spelling, language usage, literature, history, geography, physiology and hygiene, and arithmetic. Only the averages of these equated scores are recorded in the various tables and will be known as the educational score. The educational age and school grade is determined by the profile chart of the New Stanford Achievement Test, Forms V, W, and X.

In order that the schools and the pupils of the respective schools may be easily referred to or identified in further discussion, the schools will be given letters for

identification, and the pupils will be given numbers. The schools will be designated as follows:

TABLE I

School	Grade	No. of Pupils
M	7	37
M	8	44
N	7	27
N	8	18
O	7	33
O	8	21

The number of pupils as indicated above are those that have completed all tests given. These tests were given to all pupils present on the days tests were given, but those failing to take one or more of the tests have been eliminated from this study. Schools "M" and "N" have a divided or split term of Type One and were closed eight weeks for the cotton picking vacation for the year of this study. The three schools were selected for this study because of the corresponding locations, likeness of organization, length of term, and the experience and qualifications of teachers in the seventh and eighth grades.

The following chart illustrates the similarities in the three schools:

TABLE II

School	Organization	Avg. Exp. of Gr. 7 & 8 Teachers (years)	Average College Hrs. of Teachers	Length of term (months)
M	Departmental	4.75	126	9
N	Departmental	8.00	113	9
O	Departmental	4.75	126	9

## CHAPTER II

### Description and Analysis of Data

Those wishing to measure the achievement of a pupil or group of pupils in any grade in school use standardized tests, therefore the tests named in Chapter I were used by the writer in this study.

The Otis Quick Scoring Mental Ability, Beta Test, Form A is a group intelligence test standardized by grades and by ages, and is easily administered and checked.

The New Stanford Achievement Test, Forms V, W, and X is a test containing the ten subjects as listed in Chapter I. The test is easy to score, scores are comparable, and transcribing of scores is convenient; it contains a cumulative profile chart which gives a graphic representation of the standing of the pupil in each of the subjects, and the norms and probable errors. The coefficient of correlation is .95 for the seventh grade, and .96 for the eighth grade.

This study of the scores obtained from Forms V, W, and X of the New Stanford Achievement Test is made by comparing the average school grade, and the median, mean, standard deviation, and probable error of the educational age and educational score of grades seven and eight of the schools studied; the intelligence quotient, chronological age and percent of attendance having their influence on the study.

In this chapter, each test will be described together with results obtained from each group in it.

TABLE III

Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Seventh Grade, School M.

Pupil's Number	C.A.	I.Q.	Achievement Test, Form V	
			Edu. Age	Edu. Score
1	160	90	122	53.4
2	146	114	169	90.9
5	157	92	127	58.6
6	145	110	163	88.2
8	149	113	148	79.3
9	149	106	147	77.8
10	149	112	165	89.2
11	167	87	146	76.9
12	144	95	131	63.1
13	150	100	143	74.7
14	184	66	119	44.8
15	150	92	159	86.3
17	154	120	184	97.8
18	148	114	178	94.7
19	137	108	142	73.8
20	151	100	139	71.1
21	145	120	146	76.8
22	164	102	146	77.1
23	164	84	134	66.1
24	162	95	142	74.1
25	160	94	152	82.1
27	155	106	148	79.4
28	185	109	151	80.7
29	171	71	114	44.1
30	166	101	138	70.1
31	139	105	139	58.6
33	152	103	151	80.5
34	148	97	138	70.2
35	142	99	134	66.0
37	147	107	148	78.9
38	170	89	128	60.1
39	148	96	130	61.9
40	153	107	161	86.8
41	146	105	155	83.6
42	147	99	140	71.8
43	159	89	138	69.8
44	147	96	118	48.6
Median	151.25	101.50	144.38	74.64
Mean	154.79	100.33	143.31	73.28
S.D.	11.15	11.65	18.10	13.61
P.E.	1.24	1.30	2.01	1.51
Average School Grade				5.8

The information in Table III was obtained during the sixth week of School M. This grade has a mean intelligence quotient of 100.33, indicating that the class is of normal intelligence. It has a mean chronological age of 154.79 months and an educational age of 143.31 months, indicating the educational age is 1.48 months below the chronological age. The average achievement of this class is 5.8 school grades.



TABLE IV

New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Seventh Grade, School M.

Pupil's Number	Achievement Test, Form W	
	Edu. Age	Edu. Score
1	133	64.9
2	167	90.1
5	134	66.3
6	169	90.7
8	157	84.6
9	155	84.2
10	157	84.7
11	154	83.2
12	130	62.4
13	151	81.4
14	117	46.6
15	167	89.9
17	188	99.6
18	182	97.0
19	144	76.3
20	150	80.3
21	147	77.9
22	169	91.0
23	121	52.4
24	141	73.3
25	154	83.0
27	163	88.1
28	167	89.6
29	115	45.2
30	150	80.2
31	132	64.3
33	161	87.2
34	154	83.2
35	136	67.7
37	163	87.8
38	128	60.5
39	141	72.9
40	137	68.8
41	159	86.0
42	139	71.3
43	148	79.5
44	144	76.0
Median	151.2	80.8
Mean	150.9	78.4
S.D.	16.7	11.7
P.E.	1.9	1.3
Average School Grade		6.4

The results presented in Table IV show the mean of the educational age to be 150.9, a gain of 7.6 months over Table III. It shows the mean of the educational score to be 78.4, a gain of 5.1 points over Table III. It shows the average school grade to be 6.4, a gain of .6 of a grade over Table III. There were 2.75 months between this test and the one shown in Table III, but the class made 7.6 months in the educational age, and .6 of a grade in the average school grade during this time.

TABLE V

New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days school was in Session at the time of this last test, and the Number of Days each pupil had been present at the time of this test, in the Seventh Grade, School M.

Pupil's Number	Achievement Test, Form X		Days Present
	Edu. Age	Edu. Score	
1	140	72.1	163.5
2	182	97.1	164.5
5	127	59.5	164.5
6	167	90.3	159.5
8	176	94.2	164.5
9	178	94.9	159.5
10	178	94.9	166.0
11	148	79.1	160.0
12	128	59.7	167.0
13	146	77.2	167.0
14	117	46.7	154.5
15	176	94.4	164.5
17	197	105.6	146.0
18	186	99.2	147.0
19	144	75.7	158.5
20	161	86.6	166.5
21	178	95.4	166.0
22	169	91.1	162.5
23	148	78.7	143.5
24	150	80.1	165.0
25	155	84.1	141.0
27	163	88.3	145.5
28	163	87.7	165.0
29	116	46.3	162.0
30	159	85.9	164.0
31	143	75.1	167.0
33	157	85.3	167.0
34	172	91.6	154.0
35	146	77.0	167.0
37	172	92.2	163.0
38	130	62.4	164.0
39	138	70.5	164.0
40	163	87.8	166.5
41	155	83.7	166.0
42	147	78.2	167.0
43	146	77.5	167.0
44	140	72.4	167.5
Median	156.9	85.4	Days in
Mean	156.3	81.8	Session 167.0
S.D.	19.4	13.6	--
P.E.	2.2	1.5	Percent
			of
	Average School Grade	7.0	Attendance 96.5

The results presented in Table V show the mean of the educational age to be 156.3, a gain of 5.4 months over Table IV and a gain of 13.0 months over Table III. It shows the mean of the educational score to be 81.8, a gain of 3.4 points over Table IV and a gain of 13.6 points over Table III. It shows the average school grade to be 7.0 grades, a gain of .6 of a school grade over Table IV and a gain of 1.2 school grades over Table IV. This test, Form X, was given during the thirty-fifth week of school, one week before the close of the second semester and eight weeks after the second test, Form W. There were eleven weeks between test forms V and W, and eighteen weeks between test forms W and X, but there was a greater gain in both the educational score and educational age in the first case than there was in the second. The percent of attendance for this grade was 96.5.

TABLE VI

Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the Pupils in the Eighth Grade, School M.

Pupil's Number	C.A.	I.Q.	Achievement Test, Form V	
			Edu. Age	Edu. Score
1	170	108	195	104.7
2	160	110	188	99.8
3	168	107	157	84.8
4	160	95	134	66.4
5	173	96	165	88.6
6	157	99	148	78.7
8	157	103	163	87.6
9	170	86	152	81.7
10	161	108	167	90.4
11	159	99	157	84.7
12	168	89	141	72.6
13	175	94	139	71.4
14	164	110	173	95.1
15	161	104	178	95.1
16	155	126	191	101.8
17	155	99	154	83.1
18	158	104	176	94.3
19	173	93	150	80.1
20	161	103	152	81.8
21	177	98	146	77.1
22	169	96	163	88.3
23	156	99	176	94.4
24	154	119	194	104.2
25	158	113	167	89.8
27	146	109	154	87.3
28	178	78	133	65.0
29	198	88	152	82.3
31	160	105	159	85.8
33	161	105	148	78.9
34	161	105	155	84.1
35	166	96	155	83.8
37	159	92	136	68.4
38	162	116	189	100.8
39	160	93	142	73.9
40	164	121	180	95.9
41	159	115	184	97.9
42	172	107	154	82.7
44	158	105	180	95.6
45	158	110	180	95.6

(cont'd.)

TABLE VI  
(cont'd.)

Pupil's Number	C.A.	I.Q.	Achievement Test, Form V	
			Edu. Age	Edu. Score
46	181	77	147	78.4
47	161	120	165	99.4
48	161	109	157	85.1
49	162	98	139	70.6
Median	162.3	103.8	157.5	84.6
Mean	164.9	103.0	162.1	86.0
S.D.	18.2	11.0	17.2	10.1
P.E.	.9	1.2	1.9	1.1
Average School Grade				7.5

The results presented in Table VI show the mean of the chronological age to be 164.9, the mean of the intelligence quotient to be 103.0, the mean of the educational age to be 162.1, and the educational score to be 86.0. This class has an average intelligence ability, and its educational age is 2.8 months below the mean of the chronological age. The class has an average school grade of 7.5 which is .5 of a grade below the eighth grade. This test was given during the sixth week of school.

TABLE VII

New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Eighth Grade, School M.

Pupil's Number	Achievement Test, Form W	
	Edu. Age	Edu. Score
1	200	108.5
2	180	96.5
3	159	86.2
4	151	80.6
5	167	90.0
6	159	86.4
8	155	84.4
9	144	75.7
10	184	97.9
11	151	80.8
12	146	76.9
13	141	73.1
14	182	97.1
15	189	100.7
16	195	104.9
17	150	79.8
18	165	99.2
19	163	87.9
20	159	85.9
21	157	85.2
22	152	82.1
23	167	89.6
24	192	103.2
25	157	85.1
27	174	93.1
28	147	78.1
29	163	87.6
31	169	90.8
33	176	93.8
34	151	80.7
35	174	93.2
37	152	82.4
38	189	101.5
39	154	83.3
40	194	103.7
41	182	97.0
42	165	89.4
44	176	94.0
45	180	96.5
46	167	89.7
47	191	102.2
48	174	92.6
49	144	75.6

(cont'd.)

TABLE VII  
(cont'd.)

	Achievement Test, Form W	
	Edu. Age	Edu. Score
Median	164.8	90.0
Mean	167.3	90.2
S.D.	17.3	9.3
P.E.	1.9	1.0
Average School Grade		8.1

The results presented in Table VII show the mean of the educational age of the eighth grade to be 167.3, a gain of 5.2 months over Table VI. It shows the mean of the educational score to be 90.2, a gain of 4.2 points over Table VI; and the average school grade to be 8.1, a gain of .6 of a grade over Table VI. This test was given during the seventeenth week of school, eleven weeks after the first test.



TABLE VIII

New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days school was in Session at the time of this last test, and the Number of Days each pupil had been present at the time of this test, in the Eighth Grade, School M.

Pupil's Number	Achievement Test, Form X		Days Present
	Edu. Age	Edu. Score	
1	206	110.9	167.0
2	186	98.7	166.5
3	178	95.0	166.0
4	163	88.5	164.0
5	180	96.3	165.0
6	157	85.0	161.5
8	165	89.5	164.0
9	151	80.9	158.5
10	180	96.5	166.0
11	152	82.1	166.5
12	152	82.0	156.5
13	154	83.2	167.0
14	159	85.7	166.0
15	184	98.4	167.0
16	206	111.2	166.5
17	172	92.3	167.0
18	191	102.2	166.5
19	176	94.5	158.5
20	169	90.7	167.0
21	142	94.6	147.0
22	163	88.1	166.5
23	152	82.4	166.5
24	198	106.6	166.0
25	169	91.2	166.0
26	161	86.8	167.0
27	163	88.1	146.5
28	147	78.2	167.0
29	157	85.5	164.0
31	178	94.8	162.0
33	189	101.1	167.0
34	163	87.9	149.0
35	163	88.3	159.5
37	169	90.7	164.0
38	195	105.4	160.0
39	155	83.8	166.0
40	200	108.0	167.0
41	151	81.3	166.0
42	188	100.4	166.0
44	176	94.3	167.0
45	195	104.9	167.0

(cont'd.)

TABLE VIII  
(cont'd.)

Pupil's Number	Achievement Test, Form X		Days Present
	Edu. Age	Edu. Score	
47	200	107.6	167.0
48	184	98.3	167.0
49	150	80.1	166.0
Median	167.90	92.0	Days in
Mean	172.6	93.5	Session 167.0
S.D.	16.9	10.1	--
P.E.	1.8	1.1	Percent
Average School Grade 8.6			Attendance 98.0

The results presented in Table VIII show the mean of the educational score to be 172.6, a gain of 4.3 months over Table VII, and a gain of 9.5 months over Table VI. The table shows the mean of the educational score to be 93.5, a gain of 3.3 points over Table VII, and a gain of 7.5 points over Table VI. It shows the average school grade to be 8.6, and a gain of .5 of a grade over Table VII, and a gain of 1.1 grades over Table VI. This test, Form X, was given during the thirty-fifth week of school, one week before the close of the second semester.

There were eleven weeks between test forms V and W, and eighteen weeks between test forms W and X, but the educational age, educational score, and the average school grade made a greater gain between test Form V and W. The percent of attendance for their grade was 98.0.

TABLE IX

Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Seventh Grade, School N.

Pupil's Number	C.A.	I.Q.	Achievement Test, Form V	
			Edu. Age	Edu. Score
1	151	82	135	66.9
2	151	103	152	81.8
3	159	75	123	54.0
4	138	112	154	83.3
5	175	66	119	49.9
6	167	82	143	74.9
7	165	83	137	68.7
9	131	128	167	90.3
10	153	90	141	72.6
11	145	110	150	80.2
12	132	113	143	74.7
13	148	92	125	56.2
14	148	108	152	82.0
15	142	75	134	66.0
16	143	87	129	60.6
17	162	76	132	64.4
18	164	80	128	60.4
19	140	108	157	85.4
20	150	79	126	56.9
21	146	94	124	54.8
22	143	106	147	77.6
23	154	111	159	85.9
24	163	97	140	72.5
25	168	80	139	70.8
26	150	75	131	62.8
27	149	86	136	68.3
28	154	77	131	63.2
Median	151.1	88.8	138.1	68.8
Mean	152.0	92.5	139.2	69.5
S.D.	10.8	15.1	12.3	10.9
P.E.	1.4	2.0	1.6	1.4
Average School Grade				5.6

The results presented in Table IX show the seventh grade of School N to have a mean chronological age of 152.0, a mean intelligence quotient of 92.5, a mean educational age of 139.2, being 2.7 months below the chronological age; a

mean educational score of 69.5, and an average school grade of 5.6 which is 1.4 grades below the seventh grade in which the class is enrolled. The intelligence quotient of this class is below normal or average. This test was given during the sixth week of school.

TABLE X

New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Seventh Grade, School N.

Pupil's Number	Achievement Test, Form W	
	Edu. Age	Edu. Score
1	131	63.0
2	169	90.6
3	132	64.1
4	189	100.9
5	127	59.3
6	134	66.5
7	142	73.6
9	174	93.3
10	155	84.1
11	152	81.9
12	148	78.9
13	132	64.1
14	169	91.2
15	120	51.0
16	126	57.8
17	126	58.3
18	131	63.3
19	167	90.2
20	125	56.5
21	134	65.6
22	154	83.4
23	186	99.5
24	146	77.1
25	143	75.3
26	124	55.2
27	144	76.3
28	133	65.2
Median	140.8	72.5
Mean	145.1	73.8
S.D.	19.3	14.8
P.E.	2.5	1.9
Average School Grade		6.0

The results presented in Table X show the mean of the educational age to be 145.1, a gain of 5.9 months over Table IX; the mean of the educational score to be 73.8, a gain of 4.3 points over Table IX; and an average school grade of 6.0 years, a gain of .4 grade from Table IV. This test was given during the seventeenth week of school, one week before the close of the first semester.

TABLE XI

New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days school was in Session at the time of this last test, and the Number of Days each pupil had been present at the time of this test in the Seventh Grade, School N.

Pupil's Number	Achievement Test, Form X		Days Present
	Edu. Age	Edu. Score	
1	137	68.8	169
2	169	91.1	136
3	137	69.4	165
4	178	94.6	170
5	137	69.5	162
6	148	79.1	170
7	144	75.6	171
9	182	96.7	161
10	169	90.8	171
11	159	86.6	171
12	152	82.4	167
13	142	74.5	166
14	172	92.2	169
15	138	69.8	169
16	143	75.0	169
17	135	66.6	169
18	139	71.4	155
19	152	81.8	170
20	132	64.5	169
21	139	71.1	153
22	161	86.7	170
23	198	106.7	171
24	154	82.9	165
25	142	74.0	171
26	129	60.6	166
27	155	84.4	170
28	144	76.3	166

TABLE XI  
(cont'd.)

	Achievement Test, Form X		Days Present
	Edu. Age	Edu. Score	
Median	144.5	78.1	Days in Session 171
Mean	151.2	79.4	
S.D.	16.8	11.3	--
P.E.	2.2	1.5	Percent of
Average School Grade		6.6	Attendance 97.0

The results presented in Table XI show the mean of the educational age to be 151.2, a gain of 6.1 months over Table X, and a gain of 12.0 months over Table IV; the mean of the educational score to be 79.4, a gain of 5.6 points over Table IX; and the average school grade to be 6.6, a gain of .6 of a grade over Table X, and a gain of 1.0 grades over Table IX.

This test was given during the thirty-fifth week of school, one week before the close of the second semester. There were eleven weeks between test forms V and W, and eighteen weeks between test forms W and X. This school, a divided term school, differs from School M, a continuous term school, in that it made a greater gain during the year in the educational age, educational score, and average school grade between test forms W and X, while School M made the greatest gain between test forms V and W. The division of School N came between test forms V and W. This school had 97.1 percent of attendance.

TABLE XII

Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Eighth Grade, School N.

Pupil's Number	C.A.	I.Q.	Achievement Test, Form V	
			Edu. Age	Edu. Score
1	149	119	169	91.4
2	163	75	133	65.2
3	168	99	155	84.3
4	191	93	143	74.8
5	168	81	142	74.1
7	152	119	188	98.8
8	165	86	136	68.4
9	178	81	141	73.5
10	160	89	154	83.1
11	165	88	144	76.5
12	186	97	163	88.2
13	174	79	140	71.7
14	200	62	119	50.2
15	147	102	143	74.6
16	147	92	154	83.4
17	173	77	131	63.0
19	145	88	137	68.8
23	174	80	141	72.9
Median	167.5	87.5	142.9	73.3
Mean	167.5	89.4	146.4	75.6
S.D.	13.4	13.4	14.7	9.9
P.E.	2.1	2.1	2.3	1.6
Average School Grade				6.2

The results presented in Table XII show the eighth grade of School N to have a mean chronological age of 167.5, a mean intelligence quotient of 89.4, a mean educational age of 146.4, being 11.1 months below the chronological age; a mean educational score 75.6; and an average school grade of 6.2 school years which is 1.8 grades below the eighth grade in which the class is enrolled. The class is below the normal intelligence quotient. This test was given during the sixth week of school.

TABLE XIII

New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Eighth Grade, School N.

Pupil's Number	Achievement Test, Form W	
	Edu. Age	Edu. Score
1	178	95.3
2	130	62.2
3	163	87.9
4	163	88.5
5	147	77.7
7	198	107.1
8	150	80.3
9	147	78.3
10	157	85.1
11	151	81.1
12	165	88.6
13	135	67.2
14	136	67.9
15	147	77.7
16	163	87.7
17	123	54.4
19	128	59.8
23	144	76.2
Median	150.0	76.8
Mean	151.9	79.2
S.D.	17.9	18.2
P.E.	2.9	2.9
Average School Grade		6.6

The results presented in Table XIII show: the mean of the educational age to be 151.9, a gain of 5.5 months over Table XII; the mean of the educational score to be 79.2, a gain of 4.0 points over Table XII; and an average school grade of 6.6 school years, a gain of .4 grade from Table XII. This test was given during the seventeenth week of school, one week before the close of the first semester and eleven weeks after the test in Table XII.



TABLE XIV

New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days school was in Session at the time of this last test, and the Number of Days each pupil had been present at the time of this test, in the Eighth Grade, School N.

Pupil's Number	Achievement Test, Form X		Days Present
	Edu. Age	Edu. Score	
1	182	97.3	171
2	142	73.8	171
3	167	89.5	141
4	178	94.9	155
5	152	82.3	162
7	198	107.0	171
8	154	83.0	139
9	151	81.4	166
10	161	88.6	170
11	148	79.4	166
12	174	93.5	164
13	142	74.4	171
14	157	85.3	171
15	150	80.2	171
16	174	92.9	169
17	134	65.6	150
19	139	71.4	170
23	150	80.3	169
Median	154.0	82.0	Days in
Mean	158.2	84.0	Session 171
S.D.	16.2	10.2	--
P.E.	2.6	1.7	Percent
	Average School Grade	7.2	of Attendance 95.7

The results presented in Table XIV show: the mean of the educational age to be 158.2, a gain of 6.3 months over Table XIII, and a gain of 11.8 months over Table XII; the mean of the educational score to be 84.0, a gain of 4.8 points over Table XIII and a gain of 8.4 points over Table XII; and an average school grade of 7.2 school years, a gain of 1.0 grade over Table XII.

This test was given during the thirty-fifth week of School, one week before the close of the second semester.

There were eleven weeks between test forms V and W, and eighteen weeks between test forms W and X. This class made a greater gain between test forms W and X than between test forms V and W in the educational age, educational score and average school grade, differing again in order of gain from the same grade in school M, a continuous term school. This class has a percent of attendance of 95.7.

TABLE XV

Otis Quick Scoring Mental Ability, Beta Test, Form A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Seventh Grade, School O.

Pupil's Number	C.A.	I.Q.	Achievement Test, Form V	
			Edu. Age	Edu. Score
1	171	79	144	75.7
2	143	98	157	84.9
3	155	86	144	75.6
4	167	70	131	62.6
5	136	90	165	89.2
6	170	79	136	68.1
7	171	79	151	80.6
9	159	89	148	78.9
10	154	87	151	81.3
11	153	108	163	88.4
12	154	92	159	86.1
13	147	98	182	97.1
15	141	109	157	84.6
16	132	118	161	87.2
17	197	70	139	71.4
18	166	70	135	66.8
19	151	113	178	95.3
20	165	83	144	75.9
21	146	85	141	73.3
22	138	103	163	88.4
23	156	71	141	72.9
24	194	80	141	73.3
25	150	97	176	93.7
26	153	74	133	65.0
27	150	97	150	80.4
28	148	107	165	88.9
29	167	81	151	80.8
30	148	99	146	76.6
31	170	71	126	56.7
35	145	98	146	77.1
37	140	105	154	83.2
38	173	92	152	82.0
39	153	102	165	89.4
Median	152.8	90.8	151.1	80.9
Mean	157.2	89.9	152.2	79.9
S.D.	14.7	12.5	13.4	10.2
P.E.	1.8	1.3	1.6	1.2
Average School Grade				6.7

The results presented in Table XV show the seventh grade of School O, a school with a divided term, to have a mean chronological age of 157.2, a mean intelligence quotient of 89.9, a mean educational age of 152.2 (five months below the chronological age), a mean educational score of 79.9, and an average school grade of 6.7 which is .3 of a grade below the seventh grade, the grade in which the class is enrolled. This class is below the normal intelligence quotient. This test was given during the sixth week of school.

TABLE XVI

New Stanford Achievement Test, Form W, giving Educational Age, Educational Score and Average School Grade of the pupils of the Seventh Grade, School O.

Pupil's Number	Achievement Test, Form W	
	Edu. Age	Edu. Score
1	141	73.0
2	159	86.0
3	148	78.6
4	132	64.1
5	148	78.6
6	131	63.4
7	151	80.6
9	152	81.4
10	178	95.2
11	169	90.8
12	146	76.8
13	186	98.4
15	150	79.8
16	165	88.6
17	137	68.8
18	133	64.9
19	186	98.8
20	141	72.6
21	150	80.4
22	176	94.1
23	136	67.6
24	144	76.3
25	155	83.6
26	133	64.9
27	148	78.6
28	165	88.9
29	154	83.0
30	157	84.8
31	126	56.7
35	150	80.4
37	157	84.8
38	157	84.8
39	172	91.8
Median	152.3	81.3
Mean	153.0	80.1
S.D.	15.2	10.3
P.E.	1.8	1.2
Average School Grade		6.8

The results presented in Table XVI show: the mean of the educational age to be 153.0, a gain of .8 months over Table XV; the mean of the educational score to be 80.1, a gain of .2 points over Table XV; and an average school grade of 6.8 school years, a gain of .1 of a grade over Table XV. This test was given during the seventeenth week of school, one week before the close of the first semester and eleven weeks after the test in Table XV.

TABLE XVII

New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days School was in Session at the time of this last test, and the Number of Days each pupil had been present at the time of this test in the Seventh Grade, School O.

Pupil's Number	Achievement Test, Form X		Days Present
	Edu. Age	Edu. Score	
1	148	76.8	169
2	159	85.7	169
3	147	78.5	167
4	133	65.2	164
5	176	93.9	167
6	130	62.0	166
7	157	85.0	165
9	155	84.0	165
10	180	96.1	171
11	180	95.6	170
12	157	85.5	166
13	186	99.4	171
15	169	90.7	154
16	157	85.1	173
17	132	63.8	173
18	140	72.2	152
19	191	102.0	172
20	143	75.2	172
21	157	84.9	167
22	182	97.0	171
23	147	77.6	160
24	136	67.8	122
25	186	99.4	170
26	133	65.0	173
27	163	87.8	152
28	169	90.5	170
29	154	82.9	172
30	150	79.9	172
31	132	63.8	160
35	163	87.7	160
37	152	82.1	171
38	163	88.5	172
39	165	89.0	173
Median	157.1	85.3	Days in
Mean	157.9	83.3	Session 173
S.D.	17.4	11.2	--
P.E.	2.1	1.3	Percent
			of
	Average School Grade	7.0	Attendance 97.5

The results presented in Table XVII show: the mean of the educational age to be 157.9, a gain of 8.9 months over Table XVI and a gain of 5.7 months over Table V; the mean of the educational score to be 83.3, a gain of 3.2 points over Table XVI and a gain of 3.4 points over Table XV; and an average school grade of 7.0 school years, a gain of .2 of a grade over Table XVI and a gain of .3 of a grade over Table XV.

This test was given during the thirty-fifth week of school, one week before the close of the second semester. There were eleven weeks between test forms V and W, and eighteen weeks between test forms W and X. This class made a greater gain between test forms W and X than between test forms V and W in the educational age, educational score and average school grade, differing in order from the same grade in School M, a continuous term school. This class had 97.5 percent of attendance.



TABLE XVIII

Otis Quick Scoring Mental Ability, Beta Test, Form 8A, giving the Intelligence Quotient; and New Stanford Achievement Test, Form V, giving the Chronological Age, Educational Age, Educational Score, and Average Grade of the pupils in the Eighth Grade, School 0.

Pupil's Number	C.A.	I.Q.	Achievement Test, Form V	
			Edu. Age	Edu. Score
2	178	102	180	95.7
3	152	82	140	71.7
4	156	95	163	88.0
5	164	111	176	93.6
6	150	114	192	102.8
7	150	103	174	92.8
8	180	84	150	80.2
9	161	79	157	85.2
10	150	98	144	75.6
11	157	116	200	108.0
12	165	81	142	74.2
13	164	103	151	80.7
14	179	83	144	76.0
15	150	108	178	95.1
16	159	103	178	95.5
17	164	97	151	80.6
18	164	103	184	98.4
19	162	95	140	72.2
20	178	80	146	77.2
22	163	92	138	70.1
23	160	96	172	91.7
Median	161.6	98.5	157.5	86.3
Mean	162.8	96.8	162.8	86.8
S.D.	8.9	10.1	18.7	10.6
P.E.	1.3	1.5	2.8	1.6
Average School Grade				7.6

The results presented in Table XVIII show the eighth grade of School 0, a school with a divided term, to have a mean chronological age of 162.8, a mean intelligence quotient of 96.8, a mean educational age of 162.8 (being exactly the same as the chronological age), a mean educational score of 86.8, and an average school grade of 7.6 school years which is .4 of a grade below the eighth grade

in which the class is enrolled. The class is slightly below the normal intelligence quotient. This test was given during the sixth week of school.

TABLE XIX

New Stanford Achievement Test, Form W, giving Educational Age, Educational Score, and Average School Grade of the pupils of the Eighth Grade, School O.

Pupil's Number	Achievement Test, Form W	
	Edu. Age	Edu. Score
2	180	96.2
3	141	73.4
4	163	88.2
5	195	105.2
6	189	101.4
7	176	94.1
8	147	78.3
9	152	81.9
10	161	87.0
11	198	107.3
12	161	87.3
13	169	91.3
14	146	77.0
15	180	95.8
16	176	93.7
17	157	84.7
18	189	101.2
19	152	81.6
20	150	80.0
22	144	76.3
23	163	90.6
Median	164.2	89.2
Mean	167.0	89.4
S.D.	18.1	9.9
P.E.	2.2	1.0
Average School Grade		7.9

The results presented in Table XIX show: the mean of the educational age to be 167.0, a gain of 4.2 months over Table XVIII; the mean of the educational score to be 89.4, a gain of 2.6 points over Table XVIII, and the average school grade to be 7.9 school years, a gain of .3 of a grade

over Table XVIII. This test was given during the seventeenth week of school, one week before the close of the first semester and eleven weeks after the test in Table XVIII.

TABLE XX

New Stanford Achievement Test, Form X, giving the Educational Age, Educational Score, and Average School Grade. The Days School was in Session at the time of this last test, and the Number of Days each pupil had been present at the time of this test in the Eighth Grade, School O.

Pupil's Number	Achievement Test, Form X		Days Present
	Edu. Age	Edu. Score	
2	178	95.5	128
3	147	78.4	168
4	176	94.0	173
5	198	106.7	169
6	191	101.6	173
7	186	98.9	153
8	157	85.0	172
9	163	88.2	166
10	159	85.6	171
11	200	108.1	173
12	184	98.4	173
13	147	78.5	173
14	178	95.0	173
15	196	102.0	171
16	163	88.1	166
17	195	104.6	166
18	154	85.4	169
19	154	82.8	171
22	154	82.7	162
23	174	92.8	171
Median	172.5	92.3	Days In
Mean	172.0	92.5	Session 173
S.D.	18.1	9.1	--
P.E.	2.7	1.4	Percent
Average School Grade 8.5			of Attendance 96.6

The results presented in Table XX show: the mean of the educational age to be 172.2, a gain of 5.0 months over Table XIX, and a gain of 9.2 months over Table XVIII; the mean of the educational score to be 92.5, a gain of 3.3

months over Table XIX and a gain of 5.9 months over Table XVIII; and the average school grade to be 8.5 school years, a gain of .6 of a grade over Table XIX and a gain of .9 of a grade over Table XVIII.

This test was given during the thirty-fifth week of school, one week before the close of the second semester. There were eleven weeks between test forms V and W, and eighteen weeks between test forms W and X. This class made a greater gain between tests W and X than between tests V and W in the educational score, educational age, and average school grade, differing in order from the same grade in School M, a continuous term school. This class had 96.6 percent of attendance.

STRATHEMER'S PARCHMENT

100 YEARS

CHAPTER III

Compiling and Comparing Data

TABLE XXI

Results of Tables III, IV, V, IX, X, XI, XV, XVI and XVII with the difference of the mean and median of the Educational Age and Educational Score, the Standard Deviation of the difference of the mean of the Educational Age and Educational Score, and the difference of the Average School Grade of the Seventh Grade, Schools M, N and O.

	SCHOOL	INTELLIGENCE QUOTIENT	CHRONOLOGICAL AGE	EDUCATIONAL AGE			W to V	X to W	X to V	EDUCATIONAL SCORE			W to V	X to W	X to V	
				Test Form						Test Form						
				V	W	X				V	W	X				V
Median	M	101.5	151.3	144.4	151.3	156.9	6.9	5.6	12.5	74.6	80.8	85.4	6.2	4.6	10.8	
	N	88.8	151.1	138.1	140.8	144.5	2.7	3.7	6.4	68.6	72.5	78.1	3.7	5.6	9.3	
	O	90.8	152.8	151.1	152.8	157.1	1.2	4.8	6.0	80.9	81.3	85.3	.4	4.0	4.4	
Mean	M	100.3	154.8	143.3	150.9	156.3	7.6	5.4	13.0	73.3	78.4	81.8	5.1	3.4	8.5	
	N	92.5	151.9	139.2	145.1	151.2	5.9	6.1	12.0	69.5	73.8	79.4	4.3	3.6	9.9	
	O	89.9	157.2	152.2	153.0	157.5	.8	4.9	5.7	79.9	80.1	83.3	.2	3.2	3.4	
S.D.	M	11.7	11.2	18.1	16.7	19.4	-4.0	4.2	4.4	13.6	11.7	13.6	-2.9	2.9	3.2	
	N	15.1	10.8	12.3	19.3	16.8	4.4	-4.9	4.0	10.9	14.8	11.3	3.5	-3.6	3.0	
	O	12.5	14.7	13.4	15.2	17.4	3.5	4.0	3.8	10.2	10.3	11.2	2.5	2.6	2.6	
P.E. of Mean	M	1.3	1.2	2.0	1.9	2.2				1.5	1.3	1.5				
	N	1.9	1.4	1.6	2.5	2.2				1.4	1.9	1.5				
	O	1.3	1.8	1.6	1.8	2.1				1.2	1.2	1.3				
Percent of Attendance	School						Average School Grade			School						
	M			96.5						M	5.8	6.4	7.0	.6	.6	1.2
	N			97.1						N	5.6	6.0	6.6	.4	.6	1.0
O			97.5						O	6.7	6.8	7.0	.1	.2	.3	

An analysis of the scores made by the seventh grade of Schools M, N and O on the intelligence test and the three achievement tests shows the following:

1. School M has a mean intelligence quotient of 100.3; larger than that of Schools N and O with intelligence quotients of 92.5 and 89.9 respectively. The continuous term school has greater capacity for work than the two schools with a divided term which would be expected to influence a greater achievement.

2. School M has a mean chronological age of 154.8 months which is greater than that of School N with a mean chronological age of 151.9 months, but less than School O with a mean chronological age of 157.2 months.

3. School M, with a mean educational age of 145.3, 150.9 and 156.3 determined by tests V, W and X, made a gain of 7.6 months from test V to W, a gain of 5.4 months from test W to X, and a total gain of 13.0 months from test V to X. School N, with a mean educational age of 139.2, 145.1 and 151.2 as determined by tests V, W and X, made a gain of 5.9 months from test V to W, a gain of 6.1 months from test W to X and a total gain of 12 months from test V to X. School O, with a mean educational age of 152.2, 153.0 and 157.9, made a gain of .8 months from test W to X and a total gain of 5.7 months from Test V to X. School M made a greater gain during the year than either School N or O. School M made a greater gain during the first semester than it did the second, while Schools N and O made greater gains during the second semester than they did the first.

4. School M, with a mean educational score of 73.3, 78.4 and 81.8 points as determined by Test Forms V, W and X, made a gain of 5.1 points from test V to W, a gain of 3.4 points from test W to X and a total gain of 8.5 points from test V to X. School N, with a mean educational score of 69.5, 73.8 and 79.4, made a gain of 4.3 points from test V to W, a gain of 5.6 points from test W to X and a total gain of 9.9 points from test V to X. School O, with a mean educational score of 79.9, 80.1 and 83.3 points, made a gain of .2 points from test V to W, a gain of 3.2 from test W to X and a total gain of 3.4 points from test V to X. School M made a greater gain during the first semester than it did during the second, while Schools N and O made a greater gain during the second semester than the first.

5. School M, with an average of 5.8, 6.4 and 7.0 school grades for Test Forms V, W and X, made a gain of .6 of a grade from test V to W, a gain of .6 of a grade from test W to X, and a gain of 1.2 grades as a total gain from test V to X. School N, with an average school grade of 5.6, 6.0 and 6.6 determined by tests V, W and X, made a gain of .4 of a grade from test V to W, a gain of .6 of a grade from test W to X and a total gain of 1.0 grade from test V to X. School O, with an average school grade of 6.7, 6.8 and 7.0 school years, made a gain of .1 grade from test V to W, a gain of .2 from test W to X and a total gain of .3 of a grade from test V to X. School M gained .2 of a grade more than either School N or O, its gain for both the first and



second semester was the same, but Schools N and O made a greater gain during the second semester than the first.

TABLE XXII

Results of Tables VI, VII, VIII, XII, XIII, XIV, XVIII, XIX and XX with the difference of the mean and median of the Educational Age and Educational Score, the Standard Deviation of the difference of the mean of the Educational Age and Educational Score, and the difference of the Average School Grade of the Eighth Grade, Schools M, N and O.

	SCHOOL	INTELLIGENCE QUOTIENT	CHRONOLOGICAL AGE	EDUCATIONAL AGE			W to V	X to W	X to V	EDUCATIONAL SCORE			W to V	X to W	X to V
				Test Form						Test Form					
				V	W	X				V	W	X			
Median	M	103.8	162.3	157.5	164.8	167.9	7.3	3.1	10.4	84.6	90.0	92.7	5.4	2.7	8.1
	N	87.5	167.5	142.9	150.0	154.0	7.1	4.0	11.1	73.3	76.8	82.0	3.5	5.2	8.7
	O	98.5	161.6	157.5	164.2	172.5	6.7	8.3	15.0	86.3	89.2	92.3	2.9	3.1	6.0
Mean	M	103.0	164.9	162.1	167.3	172.6	5.2	4.3	9.5	86.0	90.2	93.5	4.2	3.3	7.5
	N	89.4	167.5	146.4	151.9	158.2	5.5	6.3	11.8	75.6	79.2	84.0	3.6	4.8	8.4
	O	96.8	162.8	162.8	167.0	172.0	4.2	5.0	9.2	86.8	89.4	92.5	2.6	3.3	5.9
S.D.	M	11.0	18.2	17.3	17.3	16.9	3.7	3.6	3.6	10.1	9.3	10.1	2.1	2.1	2.2
	N	13.4	13.4	14.7	17.9	16.2	5.5	5.7	5.2	9.9	18.2	10.2	4.9	4.9	3.3
	O	10.1	8.9	18.7	18.1	18.1	5.7	5.5	5.7	10.6	9.9	9.1	3.2	2.9	3.0
P.E. of Mean	M	1.2	.9	1.9	1.9	1.8				1.1	1.0	1.1			
	N	2.1	2.1	2.3	2.9	2.6				1.6	2.9	1.7			
	O	1.5	1.3	2.8	2.2	2.7				1.6	1.1	1.4			
Percent of Attend- ance	School								School						
	M		98.0				Average	M	7.5	8.1	8.6	.6	.5	1.1	
	N		95.7				School	N	6.2	6.6	7.2	.4	.6	1.0	
O		96.6				Grade	O	7.6	7.9	8.5	.3	.6	.9		

An analysis of the scores made by the eighth grade of Schools M, N and O on the intelligence test, and the three achievement tests shows the following:

1. School M has a mean intelligence quotient of 103.0 which is larger than that of either School N or O with intelligence quotients of 89.4 and 96.8 respectively. The school with a continuous term has a greater capacity for work than the two schools with a divided term.

2. School M, with a mean chronological age of 164.8 months has less than School N with a chronological age of 167.5 months, and greater than that of School O, with a chronological age of 162.8 months.

3. School M, with a mean educational age of 162.1, 167.3 and 171.6 months as determined by Test Forms V, W and X, made a gain of 5.2 months from test V to W, a gain of 4.3 from test W to X and a total gain of 9.5 from test V to X. School N, with a mean educational age of 146.4, 151.9 and 158.2, made a gain of 5.5 months from test V to W, a gain of 6.3 months from test W to X and a total gain of 11.8 months from test V to X. School M made a greater gain than School O, and a lesser gain than School N. School M made a greater gain during the first semester than the second, but Schools N and O made greater gains during the second semester than the first.

4. School M, with a mean educational score of 86.0, 90.2 and 93.5 points as determined by tests V, W and X, made a gain of 4.2 points from test V to W, a gain of 3.3

points from Test W to X and a total gain of 7.5 points from test V to X. School N, with a mean educational score of 75.6, 79.2 and 84.0 points as determined by tests V, W and X, made a gain of 3.6 points from test V to W, a gain of 4.8 points from test W to X and a total gain of 8.4 points from test V to X. School O, with a mean educational score of 86.8, 89.4 and 92.5 points, made a gain of 2.6 points from test V to W, a gain of 3.3 points from test W to X and a total gain of 5.9 points from test V to X. School M made a greater gain than School O and a smaller gain than School N but since School M's educational score is larger than that of School N its gain of 7.5 results in a greater gain in the average school grade than the 8.4 points gained by School N. School M made a greater gain during the first semester than it did during the second semester, but Schools N and O made greater gains during the second semester than the first semester.

5. School M, with an average school grade of 7.5, 8.1 and 8.6 school years as determined by tests V, W and X, made a gain of .6 of a grade from test V to W, a gain of .5 of a grade from test W to X and a total gain of 1.1 grade from test V to X. School N, with an average school grade of 6.2, 6.6 and 7.2 as determined by tests V, W and X, made a gain of .4 grade from test V to W, a gain of .6 of a grade from test W to X and a total gain of 1.0 grade from test V to X. School M achieved .1 of a grade more than School N and .2 of a grade more than School O during the year. School M

made a greater achievement during the first semester than the second semester, but School N and School O made a greater achievement during the second semester than the first semester.

## CHAPTER IV

## Summary and Conclusion

The conclusions reached in this study are not general in their application, nor can they be considered final in the particular situation to which they apply. The shifting of members of the student body from one type of school to another, occupations after school hours, and home environment, all have an influence on the achievement of the pupils but have not been studied in this problem by the writer.

In order for the study to be made most valuable there should be other investigations made, similar to this one, in different sections of the country. The expense and the amount of work involved prevented the writer from including more schools and other phases of the problem in this study.

The principal facts drawn from this study are as follows:

1. The seventh and eighth grades of Schools M, N and O are similar in organization, years of experience and the number of college hours of the teachers in the two grades, and the percent of attendance in these grades.
2. The seventh grade of School M, a school with a continuous term, made a greater achievement in the average school grade during the time of this study than either School N or School O, schools with divided terms.
3. The eighth grade of School M made a greater achievement in the average school grade during the time of this

study than either School N or School O.

4. The seventh grade of School M made a greater achievement in the average school grade during the first semester than the second semester, but schools N and O made the smaller achievement during the first semester, the semester in which the division occurred, than the second semester.

5. The eighth grade of School M made the greater achievement in the average school grade during the first semester than during the second semester, but Schools N and O made a smaller achievement during the first semester than the second semester.

As a final conclusion, this study serves to point out that the achievement has been retarded in the seventh and eighth grades of Schools N and O as a result of the split or divided term.

## BIBLIOGRAPHY

- Sorenson, H. Statistics for Students of Psychology and Education.
- Odell, C. W. Statistical Methods in Education.
- Garrett, H. E. Statistics in Psychology and Education.
- Dyess, B. C. Comparison of the Achievement of the Third Grade Pupils Taught by Training School Teachers with Achievement of Those Taught by the Regular Teachers.
- Ruden, W. G. How to Write a Thesis.
- Wilson, G. M. How to Measure in Education.
- Otis, R. S. Statistical Methods in Educational Measurements.



## APPENDIX

## New Stanford Achievement Test, Grades 4-9.

Total Score	Educational Age	Chron. Age	School Grade
110	204		
104	202		
108	200		
107	198		
106	197		
105	195		
104	194		
103	192		
102	191	--Adult--	
101	189	191	10.0
100	188	189	9.8
99	188	188	9.7
98	186	186	9.5
98	184	184	9.3
97	182	182	9.2
96	180	180	9.0
95	178	178	8.9
94	176	176	8.7
93	174	174	8.5
92	172	172	8.4
91	169	169	8.2
90	167	167	8.1
89	165	165	7.9
88	163	163	7.8
87	161	161	7.6
86	159	159	7.5
85	157	157	7.4
84	155	155	7.2
83	154	154	7.1
82	152	152	7.0
81	151	151	6.8
80	150	150	6.7
79	148	148	6.6
78	147	147	6.4
77	146	146	6.3
76	144	144	6.2
75	143	143	6.1
74	142	142	6.0
73	141	141	5.9
72	140	140	5.8
71	139	139	5.7
70	138	138	5.7

(cont'd.)

Total Score	Educational Age	Chron. Age	School Grade
69	137	137	5.6
68	136	136	5.5
67	135	135	5.4
66	134	134	5.3
65	133	133	5.2
64	132	132	5.1
63	131	131	5.0
62	130	130	4.9
61	129	129	4.8
60	128	128	4.7

---

Catherine Simpson