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GROUP SELF MOTIVATION IN  
HANDWRITING

by

Blanche Hedgecock Owen

An abstract of a thesis submitted to  
the Faculty of the Consolidated Uni-  
versity of North Carolina in partial  
fulfillment of the requirements for  
the degree of Master of Arts in Ed-  
ucation.

Greensboro

1943

The study seeks to determine the effect of group self-motivation on the improvement of the handwriting of fifth and sixth grade pupils; it further seeks to isolate and evaluate the devices that may be used by a group pursuing such a purpose.

The pupils participating in the project were in four grades, a fifth and sixth in a rural consolidated and a fifth and sixth in a city elementary school. One hundred and forty pupils participated. Prior to the initiation of the project, papers representative of the daily and formal handwriting of the pupils were collected and filed. Each pupil was given both the Metropolitan and the Pintner Intelligence Tests.

A setting was created from which the project developed spontaneously. Individual and group goals were established in terms of qualities on the Ayres Handwriting Scale. Each group kept before it a graphic record of individual and group progress. Inferior writers sought "hospitalization". Progress was substantial.

Among the conclusions reached were:

The improvement of writing through a self-motivated activity is possible for them.

The carry-over to all writing activity is very high.

There are no significant sex differences.

Intelligence, because of its relation to purpose, is markedly significant in the improvement of handwriting.

The pupil's rating on an achievement test of general character has no significant relationship to improvement of handwriting.

In case of regression the self-motivated activity rapidly brings the group to the level expected of them irrespective of the degree of that regression

Use by the pupils of a handwriting scale and a "hospitalization" device promotes progress.

*Signature H. M. [unclear]*

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Approved by:

*Franklin H. McNeill*  
Adviser

I wish to express my appreciation to Dr. Franklin H. McNutt,  
Head of the Department of Education of the Woman's College, University  
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Blanche Hedgecock Owen

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## CHAPTER I

### ORIGIN OF THE PROBLEM

Secondary, college, and commercial teachers have expressed complaints concerning the quality of the handwriting of school children.

Every year teachers hear criticism of the way penmanship is taught in the public schools. Parents and business men, and college professors voice disapproval of the poor quality of handwriting which they see generally. Much of the criticism is well founded. Students and adults often do exhibit a let-down in <sup>1</sup> quality of handwriting after they leave the elementary grades.

If children are to attain success in school, it is necessary for them to master the fundamental skills of reading, writing, and arithmetic. Of these the second, writing, is one of the principal ways they have of giving expression to their thoughts. Legible handwriting is a necessity, and it is the responsibility of the elementary school to develop it. However, it is a common complaint among secondary teachers that the children coming from elementary to high school, cannot write satisfactorily. Lee and Lee<sup>2</sup> bear out this statement when they point out that illegibility has been shown to increase from elementary to high school and to adulthood.

College teachers also have difficulty in being able to read the papers of their students. They find that there is generally a lack of the ability to write both legibly and rapidly. According to Macomber,<sup>3</sup> one has only to watch a group of college students taking a written examination or

<sup>1</sup>Frank Rennie Tubbs, "A Professionalized Study of Handwriting," (Unpublished Master's thesis, University of Tennessee, 1929), p.53.

<sup>2</sup>J. Murray Lee and Dorris May Lee, The Child and His Curriculum (New York: Appleton-Century, 1940), p.392.

<sup>3</sup>Glenn Freeman Macomber, Guiding Child Development in the Elementary Schools (New York: American Book Company, 1941), p.207.

watch a group at work in the library to realize that the exact posture and free arm movement, characteristic of the elementary school writing period of a few years ago, does not function in later life.

Commercial teachers are especially critical. They deplore the lack of good writing because they know that it is an indispensable asset to those seeking employment in the business world. Schonell<sup>4</sup> reveals that business men look searchingly for legible handwriting when interviewing boys and girls for positions, and annually there is an outcry against the low standards of writing in the schools of today.

Studies made by Dr. Frank N. Freeman and others show that most business and social activities require handwriting which has a quality of about 60 on the Ayers Scale, and a speed of about 65 letters per minute.

Current method is open to much criticism. According to well known authorities on handwriting, there has been much time wasted on drill that yields no results. Cole<sup>5</sup> has found that handwriting is the least understood subject, the one untouched by diagnosis, with both teachers and pupils in a chronic state of discouragement, knowing that little or no progress is being made in spite of daily practice.

The new approach to handwriting in the progressive schools is not through formal drill exercises, but by practice obtained in purposeful activities. Hildreth<sup>6</sup> shows that the child now simply practices writing in life situations, such as, writing for information, writing invitations

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<sup>4</sup>Fred J. Schonell, "Psychological Considerations in the Teaching of Handwriting", New Era XXI (June, 1940), 145.

<sup>5</sup>Luella Cole, "Heresies in Handwriting", Elementary School Journal XXVIII (April, 1928), 38.

<sup>6</sup>Gertrude Hildreth, Learning the Three R's (Philadelphia: Educational Publishers, 1936), p.237.

and notes of thanks. Satisfactory speed and legibility are thus obtained. with less time. Attention to handwriting in all of a child's written work is now considered necessary. Better results are obtained by these methods than by giving formal drill for fifteen minutes a day.

Progress in writing is obviously an individual matter. Each pupil, by checking his own work with an approved writing scale, can see his own defects and correct them. The teacher can use the major portion of the writing period assisting those students who need help and encouragement, Macomber<sup>7</sup> believes, that any practice of a formal nature should be determined by the individual for special drill. Practice so based becomes purposeful and much more effective than the formal and often boresome group drill of the past.

Some of the writing systems that have formerly been used required a great deal of time spent in making "pushes and pulls" and long lines of ovals. Kilpatrick<sup>8</sup> points out the futility of this kind of drill by showing that we get the needed drill on any operation after we have met it and have seen the need for it. The futility of drill that yields no results is brought out clearly by Dr. Franklin H. McNutt<sup>9</sup> who says that students work twelve years on arm movement and then shed it in twelve minutes.

<sup>7</sup>Glenn Freeman Macomber, Guiding Child Development in the Elementary School (New York: American Book Company, 1941), p.208.

<sup>8</sup>William Heart Kilpatrick, Foundations of Method (New York: Macmillan, 1932), p.358.

<sup>9</sup>Franklin H. McNutt, "Evaluation and Improvement of Elementary Instruction", (Unpublished lecture given to graduate students in Education S561 at Woman's College of the University of North Carolina. Greensboro. June, 1942.)

Statement of the Problem

The title of this thesis is:

Group Self Motivation in Handwriting.

The specific question is:

Is it possible to secure group self motivation of practice for the improvement of handwriting?

In the interest of clarity the foregoing question may be divided:

First, how can a setting be created that will cause each child in the group to feel a real personal need for improved handwriting? Second, what are the devices that can implement the group project?

Delimitation of the Problem

This problem was restricted to the fifth and sixth grade levels. The cooperating children were from two schools. The total number participating was one hundred and forty. Systems of handwriting, as such, were not included in this problem. Neither did the study deal with manuscript nor left-handed writing.

Importance of the Problem

Authorities are agreed on the importance of the problem. After the fourth grade, regression is often evident.

According to Snyder,<sup>10</sup> analysis of the data collected in many surveys shows that handwriting of the junior and senior high school pupils of today is markedly inferior to that of pupils in similar schools ten years ago.

<sup>10</sup>Marsh Allen Snyder, "The Present Status of the Teaching of Handwriting", (Unpublished Master's thesis, Ohio State University, 1938), p.70.

It has been made clear by previous studies that formal drill does not produce the desired results. Authorities tend to agree that the influences inspiring improvement in handwriting are from within the group. Fernald<sup>11</sup> thinks monotonous exercises were never found necessary for the development of clear, legible writing. Teacher-dictated exercises are even less effective and possess no value in improving writing.

#### Method

In the attack on the problem the following methods were used:

1. A search of the literature using the following guides:

Palfrey, Thomas R., and Colemand, Henry E.  
Guide to Bibliographies of Theses--United States and Canada, 2nd edition.  
Chicago, A.L.A., 1940. 54p.

United States. Library of Congress. Catalogue Division  
List of American Doctoral Dissertations Printed in 1912--Washington,  
Government Printing Office, 1913-1938.

Doctoral Dissertations Accepted by American Universities. 1933-34  
1941-42. Compiled for the National Research Council and the American  
Council of Learned Societies by the Association of Research Libraries,  
New, Wilson, 1934.

Monroe, Walter Scott  
Ten Years of Educational Research, 1918-27. University of Illinois,  
Bureau of Educational Research, Bulletin No.42 August, 1928. Urbana,  
Illinois, University of Illinois, 1928. 377p.

United States. Office of Education. Library  
Bibliography of Research Studies in Education, 1926-27, Washington,  
Government Printing Office., 1929-1942.

Good, Carter Victor  
Doctors' Theses Under Way in Education, 1930-31 - January 1943.

Gray, Ruth A.  
Doctors' Theses in Education, a list of 797 Theses Deposited with the Office  
of Education and Available for Loan. Washington, Government Printing Office,  
1935. 69p. (U.S. Office of Education. Pamphlet No. 60.)

<sup>11</sup>Grace M. Fernald, Remedial Techniques in Basic School Subjects  
(New York: McGraw-Hill, 1943), - 144.

Columbia University. Teachers College.

Register of Doctoral Dissertations Accepted in Partial Fulfillment of the Requirements for Degree of Doctor of Philosophy, Vol. 1, 1899-1936, compiled and edited by Anvor Barstad, and others, Teachers College Bulletin, 28th Series, No.4, February, 1937. New York, Teachers College, 1937. 136p.

New York University. Washington Square Library.

List of Doctors' and Masters' Theses in Education. New York University, 1890 - June 1936 - New York, N. Y. University, School of Education, 1937. 117p.

Northwestern University

List of Doctoral Dissertations, 1896-1934. Evanston, Illinois, the University, 1935.

Readers' Guide to periodical literature (Cumulated) 1900-1943. New York, Wilson.

Monroe, Walter Scott and Shores, Louis.

Bibliographies and Summaries in Education. New York, Wilson, 1936. 470p.

Education Index: A Cumulative Author and Subject Index to a Selected List of Educational Periodicals. Books and Pamphlets. New York, H. W. Wilson Company, 1929-February 1943.

The Bibliographic Index: A Cumulative Bibliography of Bibliographies. March, 1938. New York, H.W. Wilson, 1938.

Standard Catalog for Public Libraries; 1940 ed.

An Annotated List of 12000 Titles with a Full Analytical Index; compiled by Dorothy E. Cook and Isabel Stevenson Monro. New York, H. W. Wilson, 1940. 2,192p.

1941-42 Cumulated Supplement to the 1940 edition; and annotated list of 1595 titles. New York, Wilson, 1942. 295p.

Carnegie Corporation of New York. Advisory Group on College Libraries. A List of Books for College Libraries, approximately 14,000 Titles Selected on the Recommendation of 200 College Teachers, Libraries and Other Advisers, Prepared by Charles B. Shaw....Chicago, A.L.A., 1931. 810p.

Shaw, Charles B.

A List of Books for College Libraries 1931-38. Chicago, A.L.A. 1940. 284p.

Education Abstracts. Jan.-Feb. 1936

Albany, N. Y.

Selected References in Education 1933—Chicago, University of Chicago.



2. An experiment using the pupils and teachers of two fifth and two sixth grades. The procedure follows: Pupils' papers were collected prior to the initiation of the experiment. These were representative of both formal and daily writing. The groups were interested in the status of their writing through a self survey using the Ayers Scale. Graphs were made to show the progress.

#### Collateral Studies

A survey of the literature revealed certain studies that are related to the present one. In 1937, Kimmons<sup>12</sup> made a report of a comparative evaluation of two methods of remedial work in handwriting. The object of this study was to find a satisfactory way of improving the handwriting of children of the upper elementary grades. A Comparative study was made of the results obtained by using different methods of remedial work with two groups of fourth grade children. The author reports that: Self-directed study promoted the development of a very desirable attitude toward writing. Self-directed study in handwriting also was conducive to quicker and perhaps more lasting results than teacher-directed practice. Although the number of pupils was small and the results were not conclusive, they agreed with the psychological principle that interest and self-activity under guidance promote learning.

Tubbs<sup>13</sup> investigated the history, sociology, psychology, the hygiene of handwriting, and the methods of teaching it. He concluded that when educators concern themselves with the problem of fitting the curriculum

<sup>12</sup> Lelia Kate Kimmons. "A Comparative Evaluation of Two Methods of Handwriting" (Unpublished Master's thesis, University of Mississippi, 1937) p.10.

<sup>13</sup> Tubbs, op. cit., p.74.

to the physiological and mental needs of the pupils, they are making allowances for the hygiene of instruction. Basically, the hygiene of a subject involves the teaching of that subject with a consideration for the learner's health. Good physical health is the foundation of good mental health. In connection with the hygiene of handwriting, he discussed the school room, the posture, and the eye movement.

Griffis<sup>14</sup> made a study of disabilities in the mechanics of writing as a basis for instruction. The purpose of this study was for recommendations for curriculum revision in English. The author recommends that cooperation of the English teachers and the teachers in all other subjects should be encouraged and that individual instruction should replace group instruction when possible.

Snyder<sup>15</sup> has made a careful survey of the present status of the teaching of handwriting in the State of Ohio. The study sought to determine to what extent, if any, the teaching of handwriting is being neglected in the elementary schools of the state and to what extent, if any, the training of teachers to teach handwriting is being neglected. It is the writer's judgment that a good program in writing will be concerned with both the meanings and the skill elements in writing. There will be a need for practice exercises through which the child may hope to acquire skill in movement and form, and the increase of speed and quality with which he writes. Care should be taken to see that most exercises are concerned with meaningful content.

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<sup>14</sup>Minerva M. Griffis, "Disabilities in Mechanics of Writing as a Basis for Instruction", (Unpublished Master's thesis, Colorado State College, 1939), p.40.

<sup>15</sup>Marsh Allen Snyder, "The Present Status of Teaching Handwriting in Ohio", (Unpublished Master's thesis, Ohio State University, 1938), p.98.

Ward<sup>16</sup> has made an interesting study concerning an attempt to promote an economy of effort and time in the attainment of better handwriting skills. The purpose of this study was the isolation of one factor in handwriting, that is, the motor-kinaesthesia of the writing hand, and a prevention of harmful habits of pen gripping. This was attempted through the use of a psychologically constructed penholder gripping device, believed to be easier to control by young people. The experiment was carried out by the teachers of the fourth grade in ten schools.

It appears from the results of this experiment that the learning of the motor aspects of handwriting as early as the fourth grade of the elementary school can be facilitated through the use of a writing instrument.

Concerning mechanical aids, Hildreth<sup>17</sup> says:

In modern writing instruction, mechanical aids—gadgets for control of arm or finger movement, 'horse-shoes' to teach hand position, or pencils under the wrist to encourage arm movement--are discountenanced since no justification can be found for their use. More natural results are obtained without the use of these crutches, and no habits are formed that must later be broken. The child is more apt to be hindered than aided by mechanical writing devices.

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<sup>16</sup>John W. Ward, "An Attempt to Promote and Economy of Effort and Time in the Attainment of Better Handwriting Skills", (Unpublished Master's thesis, Indiana University, 1940), p.40.

<sup>17</sup>Hildreth, op.cit., p.236.

## CHAPTER II

## NEWER APPROACHES TO THE SKILLS

According to Dewey,<sup>1</sup> life has undergone great changes during the last decade; therefore it is necessary to make changes in education.

In the past, too much time has been given to the teaching of skills and learning facts that didn't meet the needs of the children. In the modern school, skills are taught chiefly for their practical value. To quote from the State Course of Study in Florida:<sup>2</sup>

It should be the ideal of every teacher to discover what skills and information her children need, which of these promise to be of permanent worth, which may be learned effectively by her pupils, and having discovered these things, to make automatic the use of these skills and items of information with the greatest possible economy of time and effort.

In order for satisfactory results to be accomplished by drill, it must be purposeful to the pupil, and he must see the necessity for it and accept it as an essential learning experience. Book<sup>3</sup> said:

To make learning truly economical, there must be a definite purpose and some planning to achieve it. A definite purpose guides the learner's work, serves as a means for checking his reactions and serves as additional stimulus that elicits pertinent suggestions and successful trial response. The inner drive towards successful activity which any definite purpose inevitably provides, is in reality one of the most essential factors in economical learning.

It is the opinion of Macomber<sup>4</sup> that improvement in oral and written expression grows out of purposeful situations. If children are engaged in

<sup>1</sup>John Dewey, "Some Aspects of Modern Education", School and Society XXI (October, 1933), 19-21.

<sup>2</sup>The State Course of Study of Florida Elementary Schools. 1933, 19-21.

<sup>3</sup>William F. Book, Economy and Technique of Learning (Boston: Heath, 1932), p.405.

<sup>4</sup>Glen Freeman Macomber, Guiding Child Development in the Elementary School (New York: American Book Company, 1941), p.207

interesting activities, drill becomes more meaningful. At certain stages, drill is of vital importance in the mastery of the skill of handwriting. Some children need more drill because of poor motor coordination or lack of muscular control. These children must be given more time and practice than the group as a whole requires.

As has been expressed by Morrison<sup>5</sup> a common medium of experience is handwriting, and when handwriting is felt by the pupils to be a means of expressing ideas, then the learning is economical, genuine, and continuous. Hence handwriting is best learned, as is all written discourse, by practice in expressing ideas.

The modern teacher has a great deal of material from which to choose that will be of use in drill. Quoting the Florida State Course of Study:<sup>6</sup>

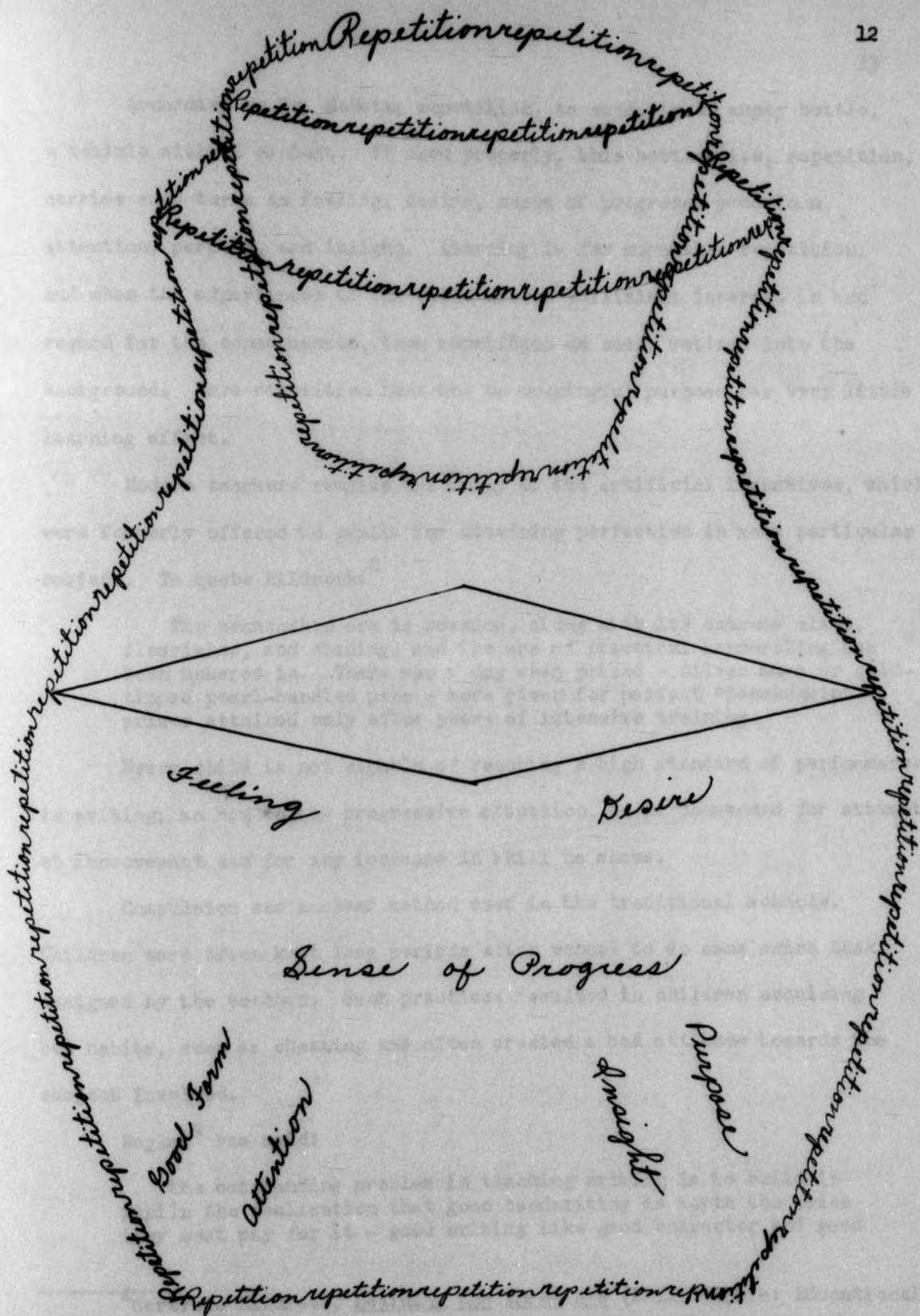
Numerous aids for the teacher in conducting drill are now available. Flash cards, games of various kinds, graphs and charts showing individual and group progress can be used effectively. Excellent work books in nearly all fields of study in the elementary school are available. Teachers should keep themselves informed about the best drill materials that are to be procured and should use all possible means to make drill effective.

The illustration on the following page is a copy taken from a drawing made by Dr. Franklin H. McNutt<sup>7</sup> to illustrate the effect of repetition on learning. Feeling, desire, sense of progress, good form, attention, purpose, and insight are the contents that give the bottle, i.e, repetition, value.

<sup>5</sup>Henry C. Morrison, The Curriculum of the Common School, Chicago, University, 1940. p.40.

<sup>6</sup>Florida State Course of Study, State Department of Public Instruction, 1933. p.19.

<sup>7</sup>F. H. McNutt, "Evaluation and Improvement of Elementary Instruction", (Unpublished lecture given to graduate students in Education 2561 at Woman's College of the University of North Carolina, Greensboro, June, 1942.)



Relation of Repetition to Motive.

According to Dr. McNutt, repetition, as such, is an empty bottle, a vehicle without content. If used properly, this bottle, i.e, repetition, carries such terms as feeling, desire, sense of progress, good form, attention, purpose, and insight. Learning is far more than repetition, and when the experiences of the child arouse sufficient interest in and regard for the consequences, then repetition as such, retires into the background. Bare repetition that has no meaningful purpose has very little learning effect.

Modern teachers realize the folly of the artificial incentives, which were formerly offered to pupils for attaining perfection in some particular subject. To quote Hildreth:<sup>8</sup>

The penmanship era is passing, along with its extreme slant, flourishes, and shading, and the era of practical handwriting has been ushered in. There was a day when prized - silver mugs or gold-tipped pearl-handled pens - were given for perfect "penmanship", prizes attained only after years of intensive training.

Every child is not capable of reaching a high standard of performance in writing; so now in the progressive situation, he is commended for attempts at improvement and for any increase in skill he shows.

Compulsion was another method used in the traditional schools. Children were often kept long periods after school to do some extra task assigned by the teacher. Such practices resulted in children acquiring bad habits, such as cheating and often created a bad attitude towards the subject involved.

Boyles<sup>9</sup> has said:

the outstanding problem in teaching writing is to build in pupils the realization that good handwriting is worth the price they must pay for it - good writing like good character and good

<sup>8</sup>Gertrude Hildreth, Learning the Three R's (Philadelphia: Educational Publishers 1936) p.216.

<sup>9</sup>Catherine P. Boyles, Eastern Commercial Teachers Association, Problems of Handwriting, Thirteenth Yearbook (Philadelphia: The Assoc., 1940p.135.

manners is not a gift of the gods. It is the result of much self-discipline, constant watchfulness, and hours of practice so that the habit of good writing may become automatic.

According to McGaughy<sup>10</sup> in recent years the major emphasis in writing in the elementary school has been on legibility and satisfactory speed. If these are attained, the child's handwriting is ordinarily accepted. Apparently nervous and muscular control and an individual's temperament very largely determine the excellence of his performance as a writer. Undoubtedly the older elementary schools wasted many hours of the valuable time of pupils in trying to bring them to a degree of excellence of which they were not nervously and temperamentally capable. Hildreth<sup>11</sup> says:

The flourishes have passed like the horse and buggy of a leisurely day. Our handwriting habits have changed rapidly with the introduction of typewriters and fountain-pens and the increased use of short hand. As a result, handwriting instruction in schools is being revised. The new school holds that the most important characteristic of handwriting is its legibility.

After legibility, comes the factor of speed. It is not desirable to insist on too high a rate of speed as it will prevent the child from writing legibly. According to Johnson<sup>12</sup> a quality score on the Ayers Scale is sometimes taken as a minimum achievement point for the upper grades, and a speed of about sixty-five letters per minute is ordinarily considered to be sufficient.

The traditional school placed great emphasis on systems of handwriting. The most famous of these, the Spencerian, will go down in history. Samples

<sup>10</sup>J. R. McGaughy, An Evaluation of the Elementary School (New York: Bobbs-Merrill, 1937), p. 117.

<sup>11</sup>Gertrude Hildreth, Learning the Three R's Educational Publishers, (Philadelphia: 1936), p. 216.

<sup>12</sup>Inez Johnson, "Handwriting" Grade Teacher LV (December, 1937), p. 26.



of this style have been found in letters and diaries colored with age.

Morrison<sup>13</sup> reveals that the traditional admiration of the art of penmanship comes down to us from a time when true penmanship was a valued accomplishment for sundry vocational purposes. As such, even that value has largely disappeared on account of the universal use of the typewriter.

At one period, great emphasis was placed on systems. To quote Educational Records:<sup>14</sup>

Some years ago, there was great emphasis in the teaching of handwriting on so called "muscular movement" or arm movement exercises. As a result of research in this field showing that such exercises were less valuable than they had been assumed to be, a reaction set in against them, and they are now used much less frequently. As a matter of fact, the pendulum may have swung too far in the other direction. Movement exercises, judiciously used with pupils who are old enough to achieve coordination in the arm and finger movements needed in skillful writing, do have a distinct value in improving quality of line, correcting spacing and slant, and developing facility in certain elements of letter form. Mature writing is neither all arm nor all finger movement. It is a combination of the two, the grosser movements being made by the arm, and the finer adjustments by the fingers.

Concerning systems in writing DeLima<sup>15</sup> has said:

All the unnecessary curves, loops, flourishes, painful up and down shadings are omitted. Children now may write easily and use the tool directly for the purpose for which it was meant - they may now write because they have something to say. Some children require extra help because of poor motor coordination or lack of muscular control. These children must be given more time and more practice than others.

Writing systems, as such, have been discontinued to a great extent in the newer schools. More attention is now paid to the child than to any

<sup>13</sup> Henry C. Morrison, The Curriculum of the Common School, (Chicago: University Press, 1940), p.41.

<sup>14</sup> Educational Records Bulletin No. 18 (Revised) The Use of Test Results in Diagnosis and Instruction in the Tool Subjects: Educational Records Bureau, New York, 1936, p.20.

<sup>15</sup> Agnes DeLima, The Little Red School House, (Macmillan: New York, 1942), p.140.

sort of a system. Too close adherence to any system in writing creates lack of interest and is likely to cause fatigue, tension, and discouragement. Modern instruction in handwriting demands a more practical and natural style.

In planning this experiment, Kilpatrick's<sup>16</sup> definitions and descriptions were adopted. These follow:

#### Definitions and delimitations

A project is any purposeful activity. It is a purposeful way of treating children in order to stir the best in them and to trust them to themselves as much as possible. A project is not a device to put over chosen subject matter. Purpose cannot be assigned.

#### Classifications

##### 1. The Producer's Project

The purpose here is to produce something. It may vary in importance from building a sand house to building a nation.

##### 2. The Consumer's Project

The purpose of this project is to consume in some way, to use, and to enjoy.

##### 3. The Problem Project

The purpose of this project is to solve a problem, to clear up some intellectual difficulty.

##### 4. The Drill Project

The purpose in this project is to acquire some item or degree of skill or knowledge.

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<sup>16</sup>William H. Kilpatrick, The Foundations of Methods (New York: Macmillan, 1932), p. 343-358.

## CHAPTER III

## DESCRIPTION OF THE EXPERIMENT

In order to get a more representative sampling of the Piedmont Area of North Carolina, two schools were chosen, one, Oak View, a rural elementary school and the other, Brentwood, a city elementary school. Although both schools were typical with regard to pupils and purposes, neither school had students distinguished in quality of writing.

The grades selected for participation were the fifth and sixth. The sixth grade of Oak View was chosen because the teacher was particularly interested in the problem. The fifth grade teacher also had shown interest in the teaching of writing and now was anxious to take part in order to see how much improvement her group of children could make. The fifth and sixth grade teachers in Brentwood both were very much interested in handwriting.

There were one hundred and forty children in the four grades selected for the experiment. Of the one hundred and forty, seventy-five were girls and sixty-five boys. In anticipation of the project, all were given the following tests: the Pintner Intelligence and the Metropolitan Achievement Test. Tables I, II, III, and IV show these results.

TABLE I

## \*INTELLIGENCE AND ACHIEVEMENT TEST RESULTS

## FIFTH GRADE, BRENTWOOD

No.	Sex		I. Q.	Achievement	No.	Sex		I. Q.	Achievement
	G.	B.				G.	B.		
1	✓		128	7.8	15		✓	103	6.2
2	✓		128	7.2	16	✓		103	6.8
3		✓	125	7.0	17		✓	102	6.5
4		✓	120	6.9	18		✓	101	6.5
5		✓	118	7.0	19		✓	100	5.8
6	✓		117	6.8	20		✓	97	6.2
7		✓	116	6.3	21		✓	95	6.2
8	✓		115	6.9	22	✓		93	5.7
9	✓		112	6.7	23	✓		92	6.2
10	✓		112	5.9	24	✓		89	6.0
11		✓	108	6.0	25		✓	84	5.3
12	✓		108	6.1	26	✓		84	5.1
13		✓	106	6.1	27	✓		82	5.5
14	✓		104	5.6	28		✓	76	5.1

\*Intelligence Test Used: Pintner Intelligence Test

Achievement Test Used: Metropolitan Achievement Test

TABLE II

## \*INTELLIGENCE AND ACHIEVEMENT TEST RESULTS

## SIXTH GRADE, BRENTWOOD

No.	Sex		I.Q.	Achievement	No.	Sex		I.Q.	Achievement
	G.	B.				G.	B.		
1	✓		131	7.5	19	✓		101	6.7
2	✓		131	8.3	20		✓	99	6.5
3		✓	122	8.0	21		✓	99	6.7
4	✓		121	7.8	22		✓	96	6.6
5	✓		119	7.6	23		✓	96	6.1
6		✓	114	7.8	24	✓		95	6.9
7	✓		112	7.2	25		✓	94	6.0
8		✓	112	6.9	26		✓	93	6.5
9		✓	108	7.3	27	✓		93	6.6
10		✓	107	6.7	28	✓		89	6.7
11	✓		107	6.7	29		✓	88	6.2
12		✓	106	6.9	30	✓		87	6.0
13		✓	106	6.6	31	✓		85	5.9
14	✓		106	7.3	32	✓		80	5.8
15	✓		105	6.6	33		✓	77	6.1
16	✓		102	6.9	34		✓	56	4.0
17	✓		102	7.7	35		✓	51	3.9
18		✓	102	6.5					

\*Intelligence Test Used: Pintner Intelligence Test

Achievement Test Used: Metropolitan Achievement Test

TABLE III

## \*INTELLIGENCE AND ACHIEVEMENT TEST RESULTS

## FIFTH GRADE, OAK VIEW

No.	Sex		I.Q.	Achievement	No.	Sex		I.Q.	Achievement
	G.	B.				G.	B.		
1	✓		135	7.0	23		✓	104	6.3
2	✓		128	7.5	24		✓	103	5.6
3	✓		125	6.7	25		✓	103	5.8
4	✓		119	6.8	26	✓		102	6.3
5		✓	119	6.7	27		✓	100	6.0
6	✓		118	7.9	28	✓		99	6.2
7	✓		117	7.5	29	✓		98	5.6
8	✓		115	7.0	30		✓	97	5.3
9		✓	113	6.9	31		✓	96	6.0
10	✓		112	6.4	32		✓	96	6.2
11		✓	112	5.8	33	✓		95	5.7
12		✓	111	6.7	34	✓		92	5.8
13		✓	110	6.6	35	✓		90	5.5
14	✓		110	6.0	36	✓		89	5.6
15		✓	107	6.7	37	✓		88	5.2
16	✓		107	5.3	38	✓		87	4.9
17	✓		107	6.2	39	✓		86	5.8
18	✓		106	6.7	40	✓		84	4.9
19	✓		106	6.4	41		✓	80	4.7
20	✓		106	6.7	42	✓		79	5.9
21	✓		105	6.3	43	✓		70	8.5
22		✓	104	6.3					

\*Intelligence Test Used: Pintner Intelligence Test  
 Achievement Test Used: Metropolitan Achievement Test

TABLE IV

## \*INTELLIGENCE AND ACHIEVEMENT TEST RESULTS

SIXTH GRADE, OAK VIEW

No.	Sex		I.Q.	Achievement	No.	Sex		I.Q.	Achievement
	G.	B.				G.	B.		
1	✓		140	7.5	18	✓		103	7.3
2		✓	135	7.4	19	✓		103	6.9
3	✓		121	7.3	20	✓		101	6.7
4		✓	120	8.1	21		✓	99	7.0
5		✓	115	7.3	22		✓	98	6.5
6		✓	113	6.9	23		✓	97	6.6
7	✓		111	7.0	24	✓		97	6.6
8	✓		110	7.4	25		✓	97	6.8
9		✓	108	7.2	26		✓	95	6.6
10		✓	108	7.8	27		✓	93	6.6
11		✓	107	7.4	28	✓		92	6.5
12		✓	107	7.2	29	✓		90	6.3
13	✓		106	6.7	30		✓	87	7.3
14		✓	106	7.3	31		✓	77	4.0
15	✓		105	7.0	32	✓		74	6.5
16	✓		104	7.2	33	✓		69	5.4
17	✓		104	6.8	34	✓		68	4.6

\*Intelligence Test Used: Pintner Intelligence Test

Achievement Test Used: Metropolitan Achievement Test

Before initiating the experiment it was necessary to collect a set of papers showing the daily handwriting. When writing these the pupils did not suspect that there was any definite purpose in this. These papers were representative of their writing as it was prior to the introduction of the motive to improve. It was also necessary to collect papers from one "writing lesson" to show their formal hands.

In order to secure a genuine group motive for the improvement of the writing, each teacher casually introduced this subject by showing the group and Ayres Writing Scale. The children were full of curiosity and wanted to use it. The teacher permitted them to scale the papers previously collected from the class. They were shocked and horrified at the results. Many wanted to rewrite the papers.

The teacher explained that these papers were merely examples of the work they did when they did not care. They should be kept to show how terrible the writing was. Each group then naturally and of its own accord expressed a genuine desire to improve its writing.

After discussion each group came to see that one should always write well, not just in a "writing lesson". They saw that progress would be marked only if every paper, regardless of its type or purpose, was well written. It was also apparent to them that the papers collected for the measurement of progress would have to be gathered at unsuspected times.

In order to save time and keep a more accurate record of what they were doing in writing, each group appointed a committee of five pupils to serve as a writing committee. The purpose of this committee was to examine carefully all papers collected at unpredictable times for six weeks. They



called attention to all errors as well as noted progress as it was made. The criteria used by the committee had been discussed and agreed upon by the group. One child asked if a prize would be given to the person who learned to write the best. It was made clear to him that what we were most interested in was seeing just how much each child could improve his writing instead of a few striving to attain perfection.

The children, tried the "hospital idea", that is, when the writing did not measure up to the expected standard, hospitalization was recommended for that person until he could overcome his disabilities. The results of the hospital experiment were very good. Each child thought this great fun, until he was hospitalized; then he put forth his greatest effort in order to be released from the hospital. It must be remembered that the hospital idea was a group idea and not a teacher imposed device.

Some of the children felt that within six weeks time, they could reach the goal of ninety on the Ayres Scale. Every one participating in the project improved and several of the children did reach the highest grade.

The children wanted to know about their progress from time to time; so they asked if they couldn't show these results by graphs. It was talked over and decided to plot the results of the scores on the black board every two weeks. There was a great deal of enthusiasm shown each time the papers were plotted. Every one was interested in seeing his score put up and in making comparisons with the scores on his initial set of papers. By means of these graphs, the children were enabled to measure the rate of their progress from time to time.

A record of all these graphs was kept, and at the end of the six weeks

period each child could see how near he had come to reaching his individual goal that he had set up in the beginning of the project. The class as a whole could see how much improvement the group had made during the trial period.

Before the children saw any samples of the project, samples of both the daily and formal papers were collected. The teacher and the pupils made copies of the April Scale with the results shown in Figures 1, 2, 3, and 4.

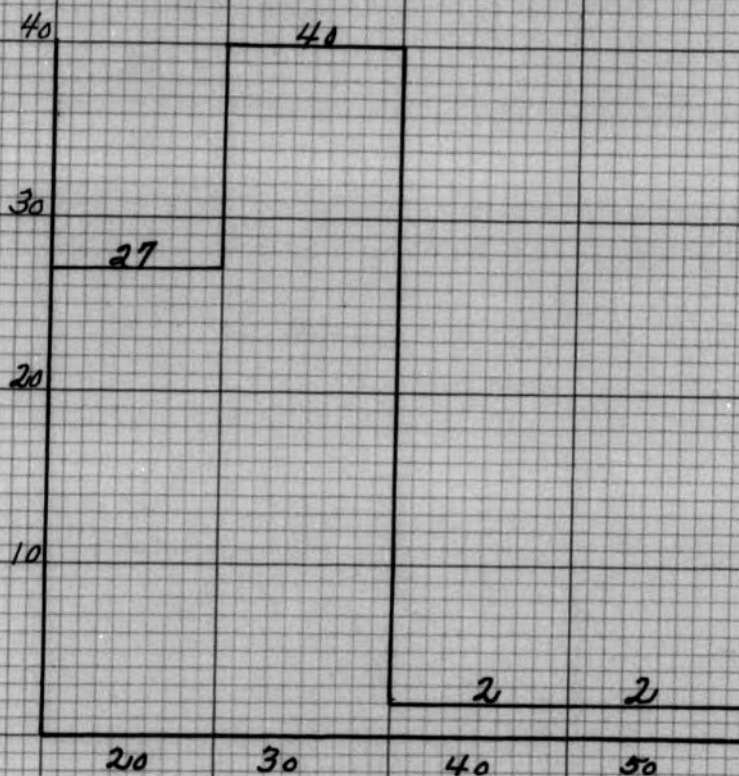
Figure 1 shows that all of the fifth grade papers scored at least as twenty on the April Scale, whereas 50% of the sixth grade children made the same low score. According to scores shown in Figures 2 and 3, the daily writing of the fifth grade children was superior to that of the sixth grade. One of the fifth grade teachers had had special training in writing and had taught penmanship. These facts may help to explain the quality of the writing of the fifth grade.

## CHAPTER IV

## RESULTS AND ANALYSIS

Before the children had any knowledge of the project, samples of both the daily and formal hands were collected. The teacher and the pupils graded these samples on the Ayres Scale with the results shown in Figures 1, 2, 3, and 4.

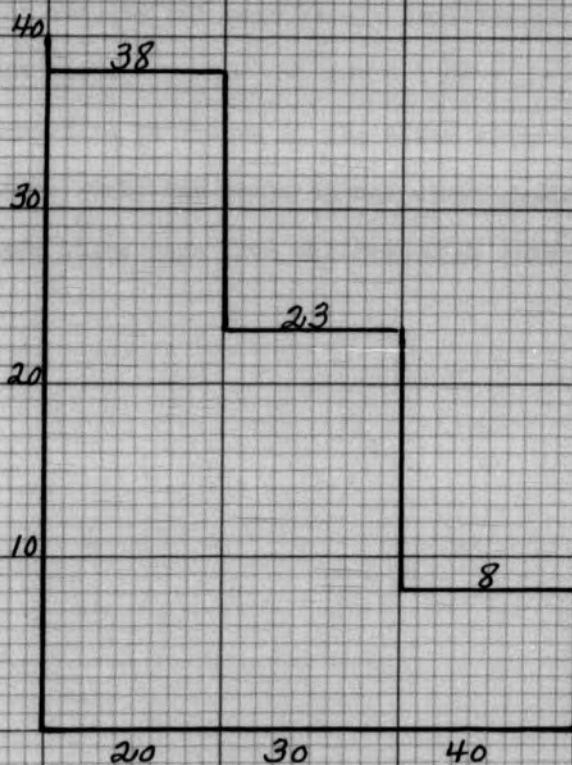
Figure 1 shows that 38% of the fifth grade papers scored as low as twenty on the Ayres Scale, whereas 55% of the sixth grade children made the same low score. According to scores shown in Figures 1 and 2, the daily writing of the fifth grade children was superior to that of the sixth grade. One of the fifth grade teachers had had special training in writing and had taught penmanship. These facts may help to explain the quality of the writing of the fifth grade.



20	30	40	50
Quality of Writing			
38%	56%	39%	3%

Figure 1

Daily Handwriting  
Original Papers, Fifth Grade  
Distribution on Ayres Scale.



Quality of Writing

55% 33% 12%

Figure 2

Daily Handwriting

Original Papers, Sixth Grade

Distribution on Ayres Scale

Comparing the original formal fifth grade writing with the original formal sixth grade writing, Figures 3 and 4, it was shown that 17% of the sixth grade attained a score of fifty, but only 3% of the fifth grade reached the same mark. This shows that the children in the sixth grade were not lacking in ability but were merely indifferent. Also regression seemed to be evident here.

According to Figure 4, the sixth grade shows up better in the formal handwriting. Only one child in the sixth grade scored twenty, while in the fifth grade there were five children with this score.

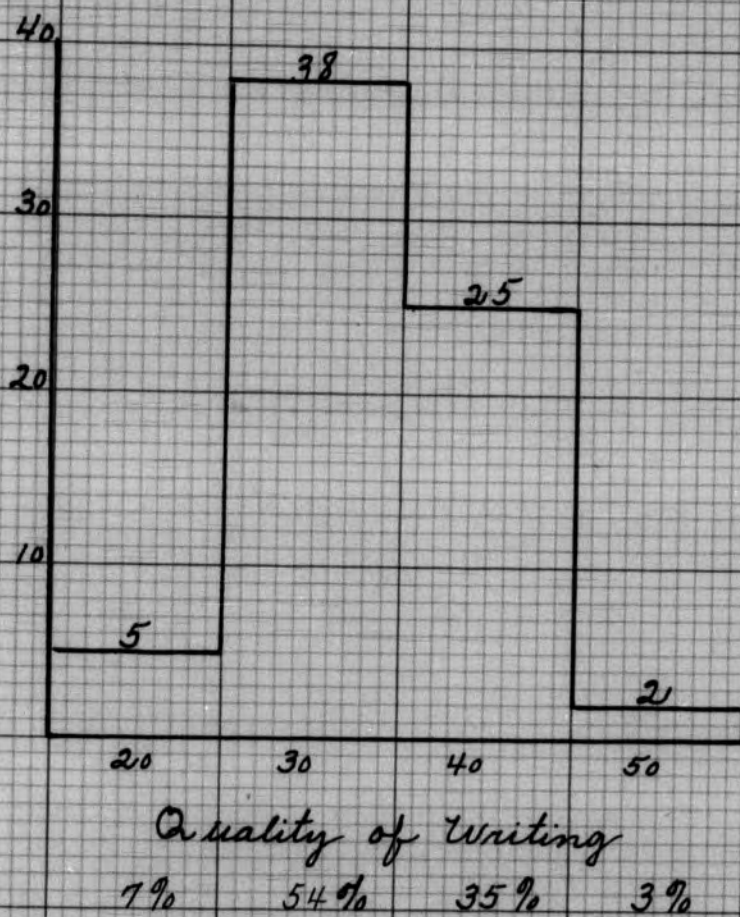
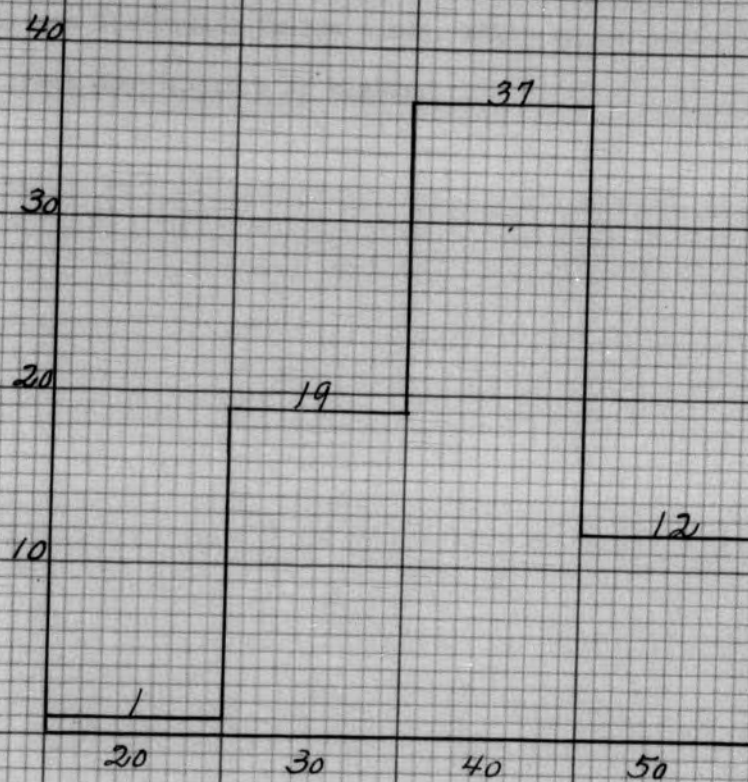


Figure 3

Formal Handwriting

Original Papers, Fifth Grade

Distribution on Ayres Scale



Quality of Writing  
 1% 28% 54% 17%

Figure 4

Formal Handwriting

Original Papers, Sixth Grade  
 Distribution on Ayres Scale.



Six percent of the fifth grade children made a score of twenty on their daily papers during the intermediate period, Figure 5, yet only 3% of the sixth grade scored as low as that as may be seen in Figure 6. The highest daily score for the fifth grade was sixty, which was made by only one individual in the class, while on the other hand, 3% of the sixth grade made a score of eighty.

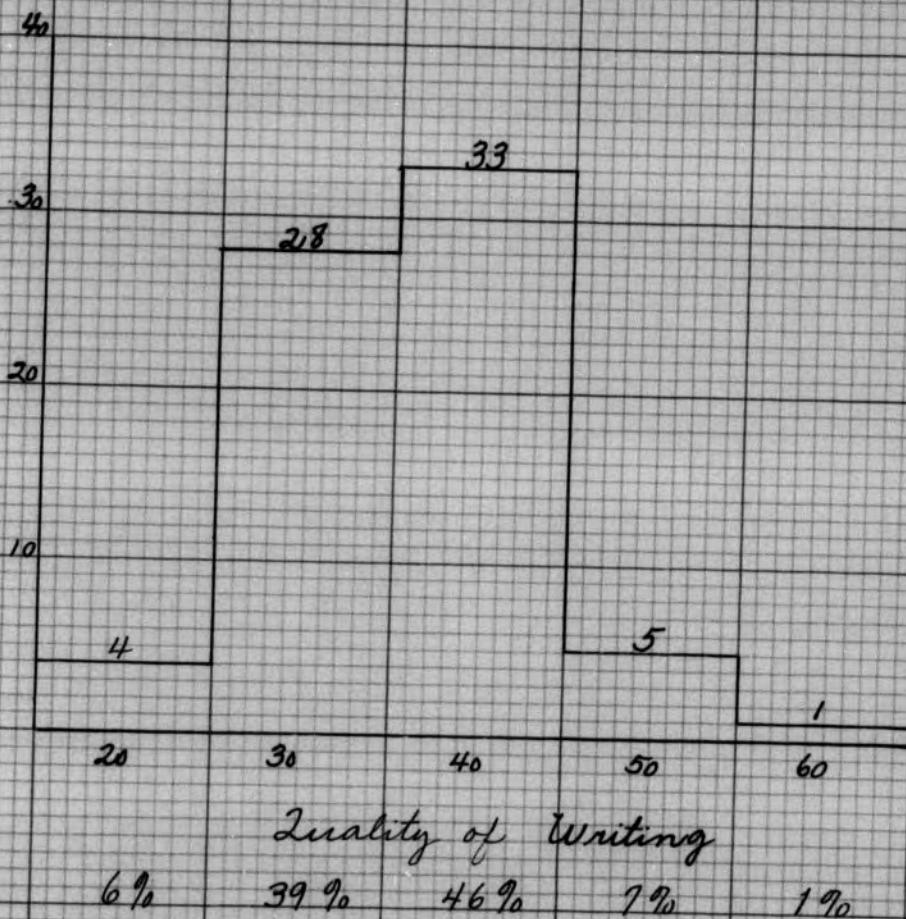


Figure 5

Daily Handwriting

Intermediate Papers, Fifth Grade

Distribution on Ayres Scale

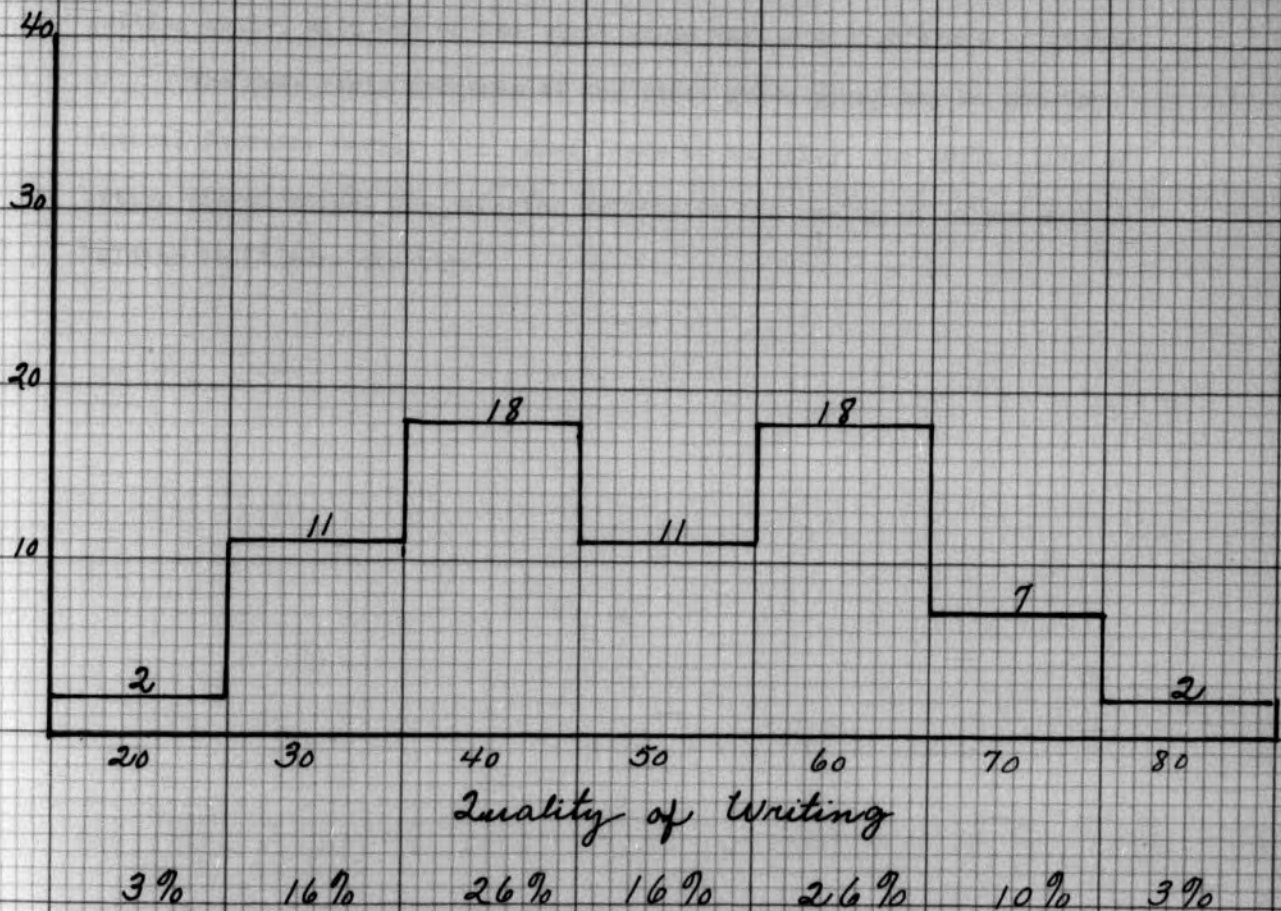
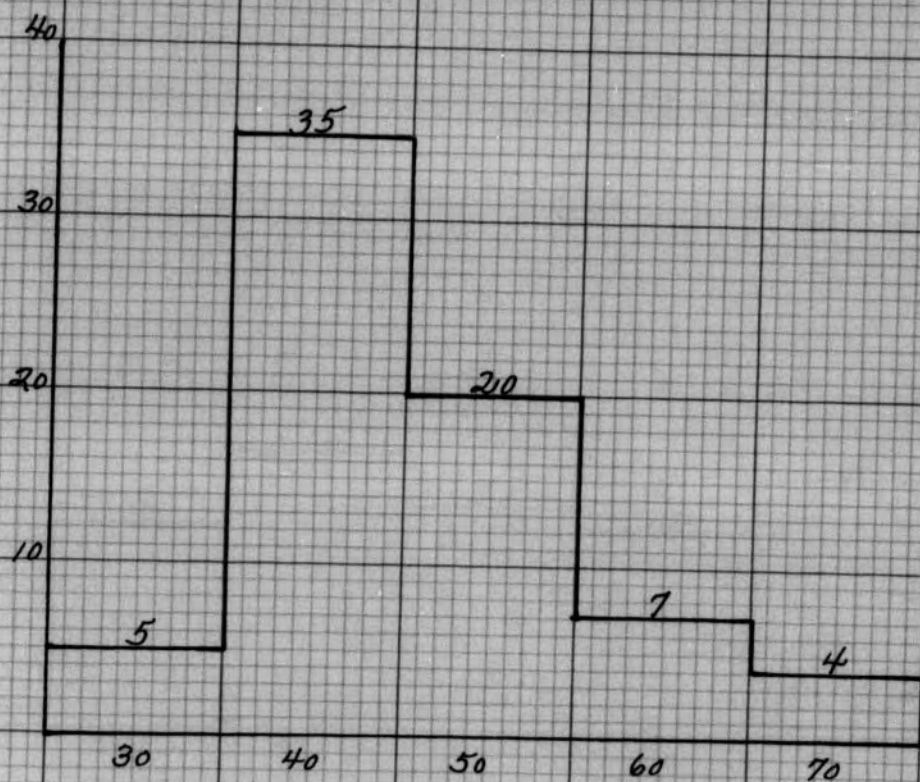


Figure 6  
Daily Handwriting.

Intermediate Papers, Sixth Grade  
Distribution on Ogden Scale

As seen in Figures 7 and 8, the greatest improvement in the intermediate formal papers was made by the sixth grade. Seven percent of the fifth grade children made thirty, and only 1% of the sixth grade made this low score. Six percent of the fifth grade reached seventy on the writing scale, with 22% of the sixth grade making a high score of eighty.

The more rapid progress of the sixth grade group may be due to several factors; namely, the added years of maturity, the possibility of better coordination, the superior ability in the seeing of an end and in holding to it persistently.



Quality of Writing  
 7%      49%      28%      10%      6%

Figure 7

Formal Handwriting

Intermediate Papers, Fifth Grade

Distribution on Agree Scale.



Quality of Writing

1%	17%	23%	19%	17%	22%
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Figure 8

Formal Handwriting

Intermediate Papers, Sixth Grade

Distribution on Ogden Scale.

The scores on the final daily papers of the fifth grade children were much higher at the end of the writing experiment. Not a child scored under forty as shown in Figure 9. The scores ranged from forty to ninety, the greatest number of children, 35%, making the score of fifty. Four percent of the group made ninety.

In the sixth grade, Figure 10, the final daily scores ranged from forty to ninety, with the greatest number of children, 28%, making the score of sixty. The highest score, ninety, was reached by fourteen percent of the children.

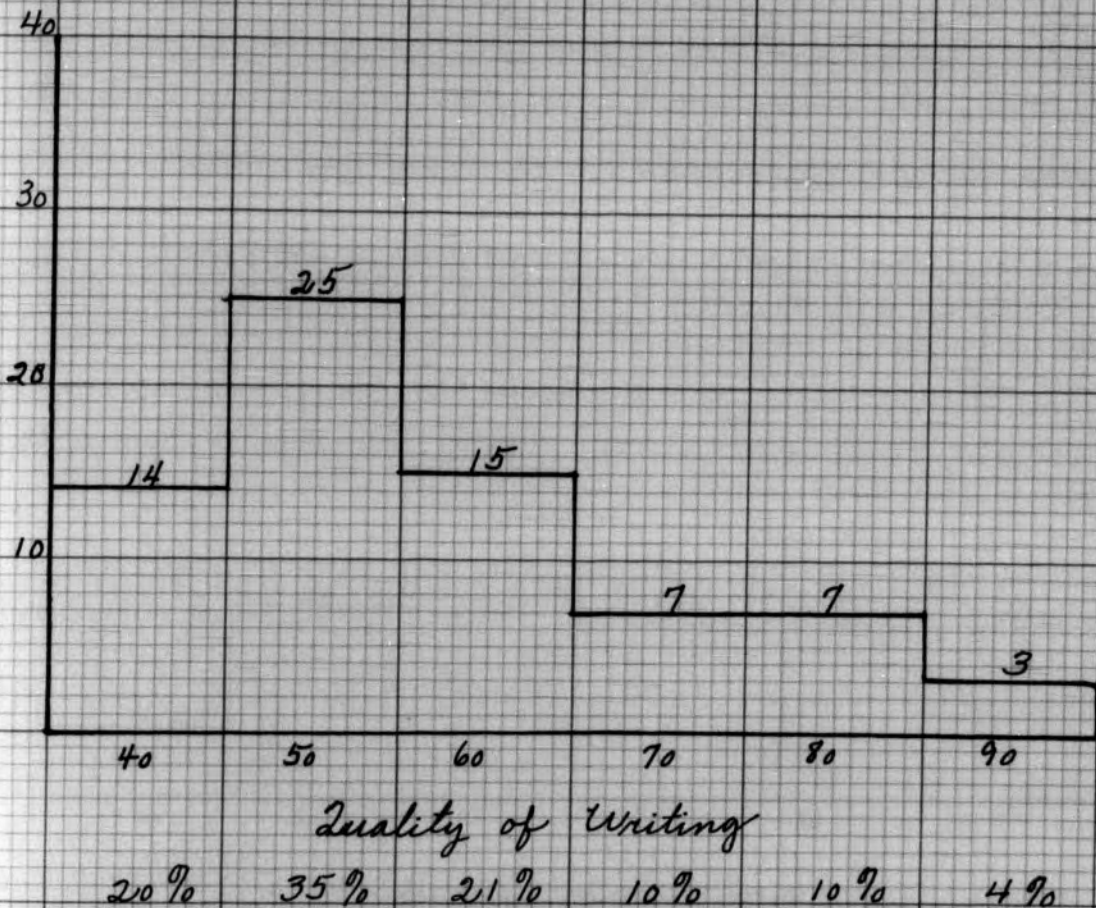


Figure 9  
 Daily Handwriting  
 Final Papers, Fifth Grade  
 Distribution on Ayres Scale



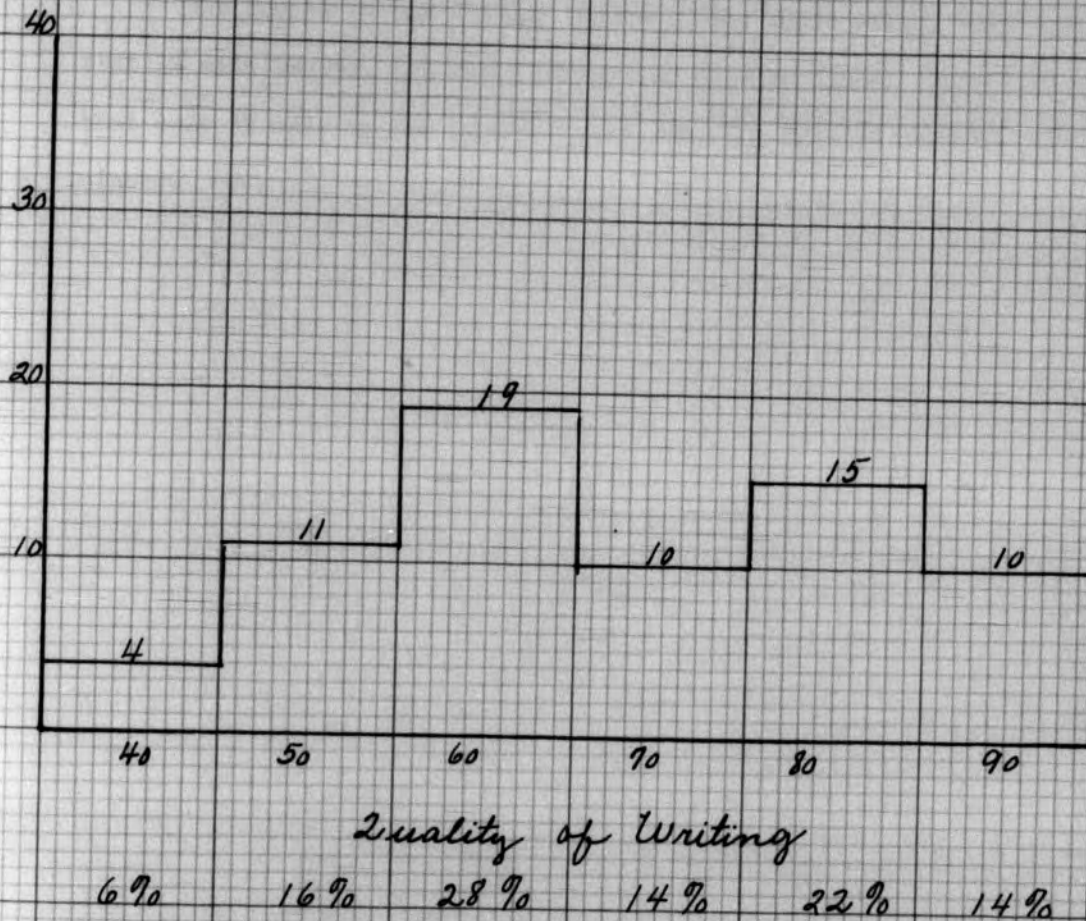


Figure 10  
 Daily Handwriting  
 Final Papers, Sixth Grade  
 Distribution on Ogus Scale

The scores on the final formal papers showed remarkable improvement. The initial scores of this grade, Figure 3, shows 7% made twenty, and only 3% made more than forty. Figure 11 shows that only 4% made as low as forty and 8% reached the highest goal of ninety.

The scores on the initial papers of the sixth grade, Figure 4, show that 1% made twenty, and only 17% made as high as fifty. Figure 12 shows that only 3% made as low as forty, and 33%, the highest possible score of ninety.



*Handwritten text, likely a caption or description of the figures, is extremely faint and illegible. It appears to contain the words 'Figure 3', 'Figure 4', and 'Final Scores'.*

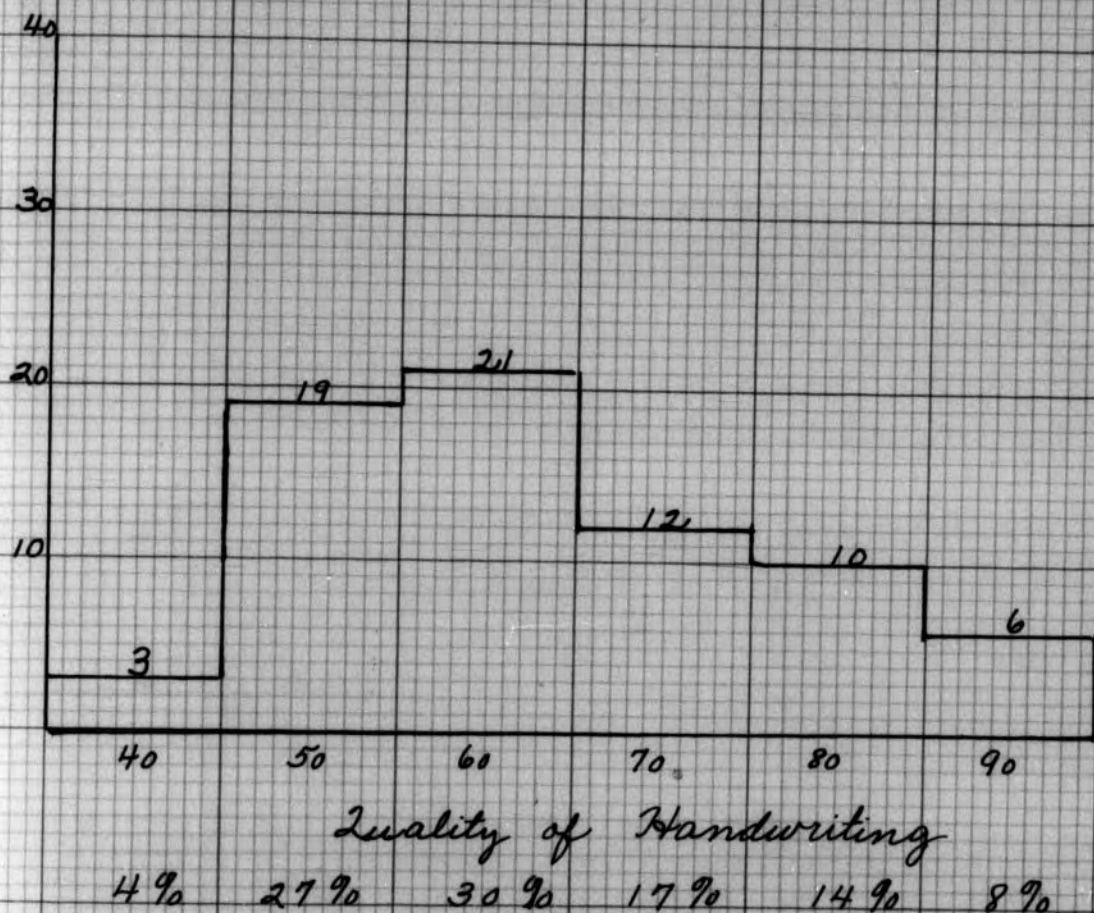


Figure 11  
 Formal Writing  
 Final Papers, Fifth Grade  
 Distribution on Ayres Scale



Quality of Writing

40	50	60	70	80	90
3%	3%	11%	25%	25%	33%

Figure 12

Formal Handwriting

Final Papers, Sixth Grade  
Distribution on Ayres Scale.

Table V is a summary of the improvement made by the fifth grade children on both daily and formal handwriting. The initial papers showed that 97% of the scores rated in quality between twenty and forty with 3% as high as fifty.

The final daily papers revealed that the children's range now was from forty to ninety, 3% receiving the rating of ninety.

The final formal papers indicate that 97% of the students now ranked from fifty to eighty with six children reaching a mark of ninety.

	DAILY	FORMAL
20	0	0
30	0	0
40	14	3
50	25	13
60	15	31
70	7	12
80	7	10
90	3	6

TABLE V

SUMMARY OF IMPROVEMENT  
DAILY AND FORMAL WRITING  
FIFTH GRADE

Initial Papers		Final Papers	
DAILY		DAILY	
Quality	No. of Pupils	Quality	No. of Pupils
20	27	20	0
30	40	30	0
40	2	40	14
50	2	50	25
60	0	60	15
70	0	70	7
80	0	80	7
90	0	90	3
FORMAL		FORMAL	
20	0	20	0
30	0	30	0
40	14	40	3
50	25	50	19
60	15	60	21
70	7	70	12
80	7	80	10
90	3	90	6

Table VI is a summary of the improvement made by the sixth grade children on both daily and formal handwriting. The initial papers showed that 89% of the scores rated in quality between twenty and thirty, with 11% scoring forty.

The final daily papers showed that the children's range now was from forty to ninety, 16% receiving the rating of ninety.

The final formal papers indicate that 65% of the students now ranked from forty to eighty, with twenty-three reaching the highest possible score, ninety.

TABLE VI  
 SUMMARY OF IMPROVEMENT  
 DAILY AND FORMAL WRITING  
 SIXTH GRADE

Initial Papers		Final Papers	
DAILY		DAILY	
Quality	No. of Pupils	Quality	No. of Pupils
20	38	20	0
30	23	30	0
40	8	40	4
50	0	50	11
60	0	60	19
70	0	70	10
80	0	80	15
90	0	90	10
FORMAL		FORMAL	
20	1	20	0
30	19	30	0
40	37	40	2
50	12	50	2
60	0	60	8
70	0	70	17
80	0	80	17
90	0	90	23



For the convenience of the interested reader the individual scores of all the children are given in Tables VII, VIII, IX, and X. As might be expected, the amount of improvement varies greatly with the individual. The greatest improvement in the daily handwriting as shown in Table VI was made by child number 20, who improved from 30 to 70, a gain of 40 points in quality. Child number 4 made no progress, as she maintained the same score. Four children numbered 9, 18, 23, and 24 showed a progress of only 10 points, that is, from 30 to 40. The mode for the initial daily papers was 30, which included the scores of 13 children. The mode for the final daily papers was 50, which included 13 children.

In the formal handwriting child number 20 progressed from 40 to 90, gaining 50 points in quality. The least progress, 10 points, was made by students numbered 18, 25, 26, and 27. The mode for the first formal writing was the same as the daily; however, the mode for the final formal writing was 60, there being 12 children in this area.

TABLE VII

INDIVIDUAL SCORES  
FIFTH GRADE, BRENTWOOD

Child's Number	Girls	Boys	First Daily Hand	First Formal Hand	Intermediate Daily Hand	Intermediate Formal Hand	Final Daily Hand	Final Formal Hand
1		✓	20	30	30	40	50	60
2	✓		20	30	40	50	50	60
3	✓		30	40	50	50	50	70
4	✓		50	40	40	60	50	60
5	✓		30	50	50	70	60	80
6	✓		30	40	40	50	50	70
7		✓	20	30	40	40	40	60
8		✓	20	30	40	40	40	60
9		✓	30	30	30	30	40	60
10	✓	✓	30	30	40	50	50	60
11		✓	30	40	40	50	60	70
12		✓	30	40	40	40	50	70
13	✓	✓	20	30	30	40	60	60
14		✓	30	40	30	50	50	60
15		✓	20	40	40	40	50	60
16	✓	✓	20	30	40	40	50	60
17		✓	20	30	40	40	40	50
18	✓	✓	30	40	50	60	40	50
19		✓	30	30	40	40	50	50
20	✓	✓	30	40	50	60	70	90
21	✓		30	40	50	50	50	60
22		✓	40	40	40	60	60	70
23		✓	30	30	30	40	40	50
24		✓	30	40	30	40	40	50
25		✓	20	30	30	40	40	40
26		✓	30	40	30	50	50	50
27	✓		20	40	40	50	40	50
28	✓	✓	30	30	40	60	60	70

To continue with Table VIII the most improvement in daily writing was made by pupils 31 and 35, who gained 60 points in quality. The least progress was shown by pupil number 18, who gained only 10 points. The mode of the first daily writing was 20 with 18 children making this rating; the mode of the final daily writing was 60, which included twelve children.

The formal handwriting indicates six students who showed progress of 50 points. It also showed that the lowest score was made by pupil number 15. Forty was the mode for the first formal writing scores with 21 students. The final formal mode had eight students making a score of 80.

TABLE VIII  
 INDIVIDUAL SCORES  
 SIXTH GRADE, BRENTWOOD

Child's Number	Girls	Boys	First Daily Hand	First Formal Hand	Intermediate Daily Hand	Intermediate Formal Hand	Final Daily Hand	Final Formal Hand
1	✓		20	30	60	70	60	80
2	✓		20	40	60	70	60	80
3	✓		20	40	70	80	60	70
4	✓	✓	30	40	70	80	50	70
5			20	40	80	80	50	60
6		✓	30	30	60	70	70	80
7		✓	30	40	60	80	80	80
8		✓	40	50	70	80	80	90
9		✓	20	30	60	60	40	60
10	✓		20	30	50	60	40	50
11	✓		30	40	70	80	80	80
12	✓		40	50	70	80	80	90
13	✓		20	30	40	50	50	60
14	✓		30	40	60	80	80	90
15		✓	20	30	30	40	40	40
16		✓	20	20	70	70	40	50
17	✓	✓	40	50	50	70	80	90
18		✓	30	40	60	70	40	50
19	✓		20	30	30	40	60	70
20	✓	✓	20	30	60	60	50	80
21	✓		30	40	70	70	60	80
22	✓		20	40	40	50	50	60
23	✓		40	50	80	80	90	90
24	✓	✓	30	40	60	60	50	70
25		✓	20	40	50	50	50	60
26		✓	20	40	50	60	50	60
27		✓	20	30	60	60	50	60
28		✓	20	40	40	50	60	70
29		✓	20	40	60	70	60	70
30		✓	30	40	40	50	60	70
31		✓	30	40	60	70	90	90
32		✓	30	40	30	50	60	70
33	✓		20	40	30	30	60	70
34	✓		30	40	50	60	60	80
35	✓		30	40	60	80	90	90

As can be seen in Table IX, four children, 18, 20, 31 and 40, achieved a quality of 60 in daily handwriting. Children numbering 5 and 19 have the lowest scores, each gaining only 10 points. Twenty-four children made a score of 30, which is the mode of the first daily handwriting. For the final daily writing, 50 was the mode including thirteen children.

The children, whose numbers are 20 and 40, in the formal writing improved in quality from 30 to 90, 60 points. The least progress, made by four pupils, was 10 points. Thirty is the mode for the first formal handwriting, as it has 25 students making the same. The mode of the final formal writing was 50 with thirteen children reaching this goal.

1	✓	30	40	40	70	70	80	23	✓	30	30	40	40	50	50
2	✓	20	30	30	40	50	60	24	✓	30	40	50	70	80	80
3	✓	20	30	40	50	60	80	25	✓	30	40	40	50	60	60
4	✓	20	20	30	40	50	60	26	✓	30	30	30	40	50	50
5	✓	20	30	30	30	40	50	27	✓	20	30	40	40	50	50
6	✓	20	40	30	40	50	60	28	✓	20	40	50	40	50	60
7	✓	30	40	50	50	60	70	29	✓	30	30	50	40	50	60
8	✓	30	40	40	50	60	70	30	✓	30	30	50	50	70	70
9	✓	30	40	30	50	60	70	31	✓	30	40	40	60	70	90
10	✓	20	30	40	50	60	70	32	✓	30	40	50	60	70	90
11	✓	20	30	30	40	60	70	33	✓	30	30	40	40	60	70
12	✓	30	30	40	50	60	80	34	✓	30	40	50	60	60	60
13	✓	30	40	40	50	60	70	35	✓	30	40	50	50	50	70
14	✓	30	30	40	50	60	70	36	✓	30	30	30	40	40	40
15	✓	20	30	30	30	40	50	37	✓	20	30	30	40	40	50
16	✓	30	30	30	40	50	60	38	✓	30	30	40	50	70	80
17	✓	20	30	30	30	40	50	39	✓	20	30	40	50	50	60
18	✓	30	40	50	60	70	80	40	✓	30	30	40	70	80	90
19	✓	30	30	30	40	40	40	41	✓	20	30	30	50	50	60
20	✓	30	30	40	50	60	90	42	✓	30	30	40	40	60	60
21	✓	30	30	40	40	50	60	43	✓	30	40	50	50	60	60
22	✓	30	30	30	40	50	60	44	✓	30	40	50	50	60	60



Table X indicated that four students 1, 7, 11, and 14 made a gain of 60 points in daily handwriting. The least progress was made by child number 32, who made only 20 points. The mode for the first daily writing was 20 for twenty pupils. For the final daily writing, the mode was 80, there being eight students in this bracket.

The student achieving the greatest progress was number 14, whose score increased from 30 to 90. The least progress, 10 points, was made by only one pupil, number 32. The mode for the first formal handwriting was 40, there being 16 students in this bracket. The mode for the final formal was 80 with twelve children reaching this mark.

TABLE X

 INDIVIDUAL SCORES  
 SIXTH GRADE, OAK VIEW

Child's Number	Girls	Boys	First Daily Hand	First Formal Hand	Intermediate Daily Hand	Intermediate Formal Hand	Final Daily Hand	Final Formal Hand
1			30	50	40	80	90	90
2	✓		40	50	60	80	90	90
3	✓		20	30	30	40	50	70
4	✓		20	30	30	40	50	60
5			20	30	20	40	50	60
6			20	30	40	40	50	50
7			30	40	40	60	90	90
8	✓		20	40	60	50	80	80
9			30	40	40	50	70	80
10			20	30	40	50	70	80
11			20	30	60	60	80	80
12	✓		30	40	40	80	80	80
13	✓		40	50	50	70	90	90
14	✓		20	30	40	50	80	90
15	✓		40	50	50	80	90	90
16	✓		20	30	40	40	50	50
17	✓		40	50	50	70	90	90
18	✓		30	40	50	60	80	90
19			20	40	20	50	50	60
20			20	30	30	40	70	70
21	✓		30	40	40	60	80	90
22			20	40	30	50	60	60
23	✓		20	40	30	40	60	70
24	✓		20	40	30	40	70	80
25	✓		20	40	30	50	60	80
26			30	40	60	70	70	70
27			30	40	40	60	80	80
28			20	40	40	50	70	70
29			20	40	40	50	70	80
30	✓		30	50	40	70	80	80
31	✓		20	30	40	40	60	70
32	✓		30	40	40	50	70	80
33	✓		30	40	40	50	70	80
34	✓		20	30	40	50	60	80



The results were compiled for the boys and girls separately. In the initial rating, it was found that the fifth grade boys scored lower than the girls. (Figures 13 and 14). The average score of the boys was 21 whereas that of the girls was 29.

It was found that the fifth grade boys scored lower than the girls in the formal writing. The scores of the fifth grade boys began at 32.7 and those of the girls at 34.4. This fact showed that there was very little difference in the writing ability of the two sexes. Some of the reasons for these minor differences could have been carelessness or difference in degree of coordination.

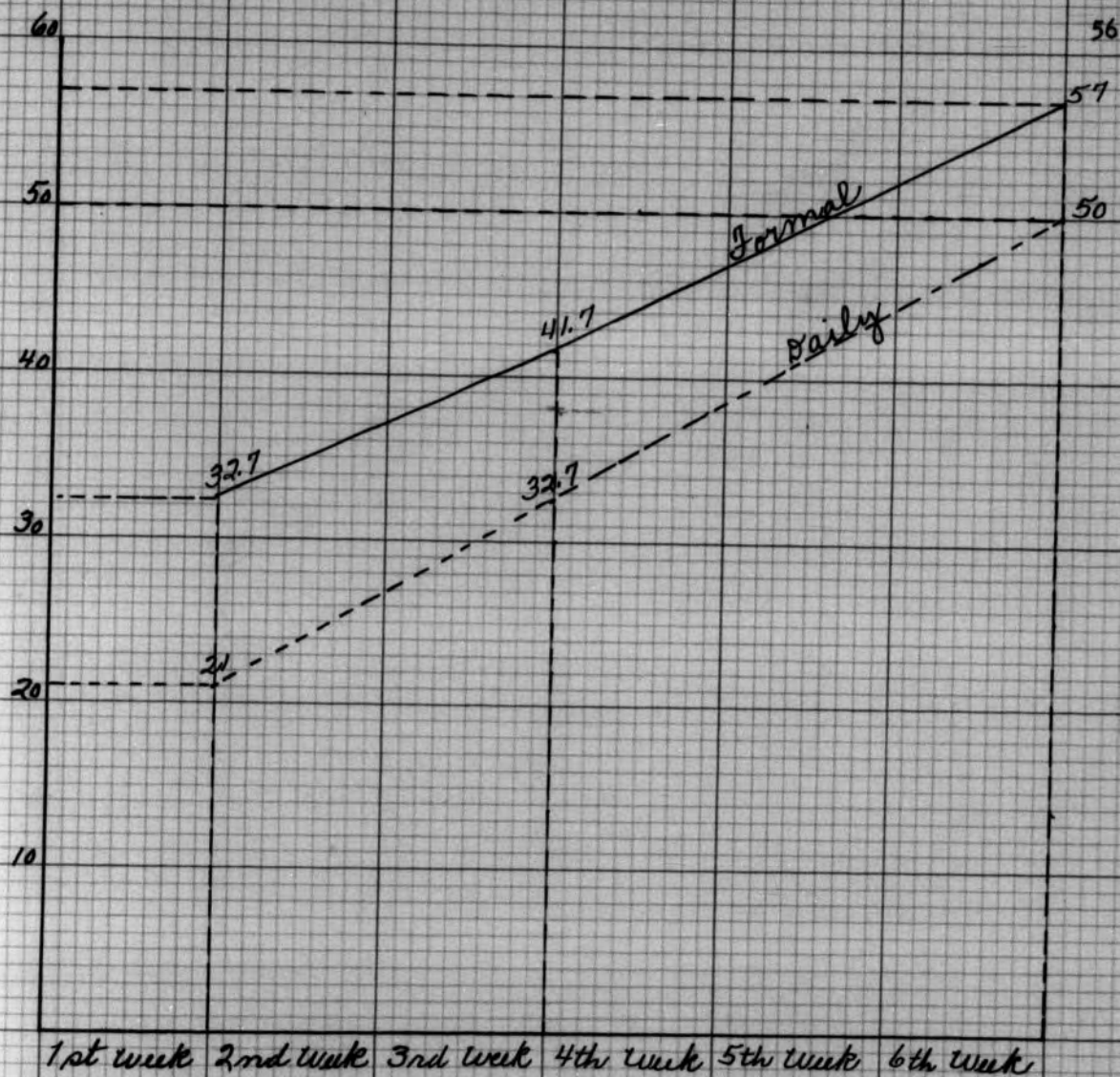


Figure 13

Progress of Fifth Grade Boys  
Journal and Daily Writing

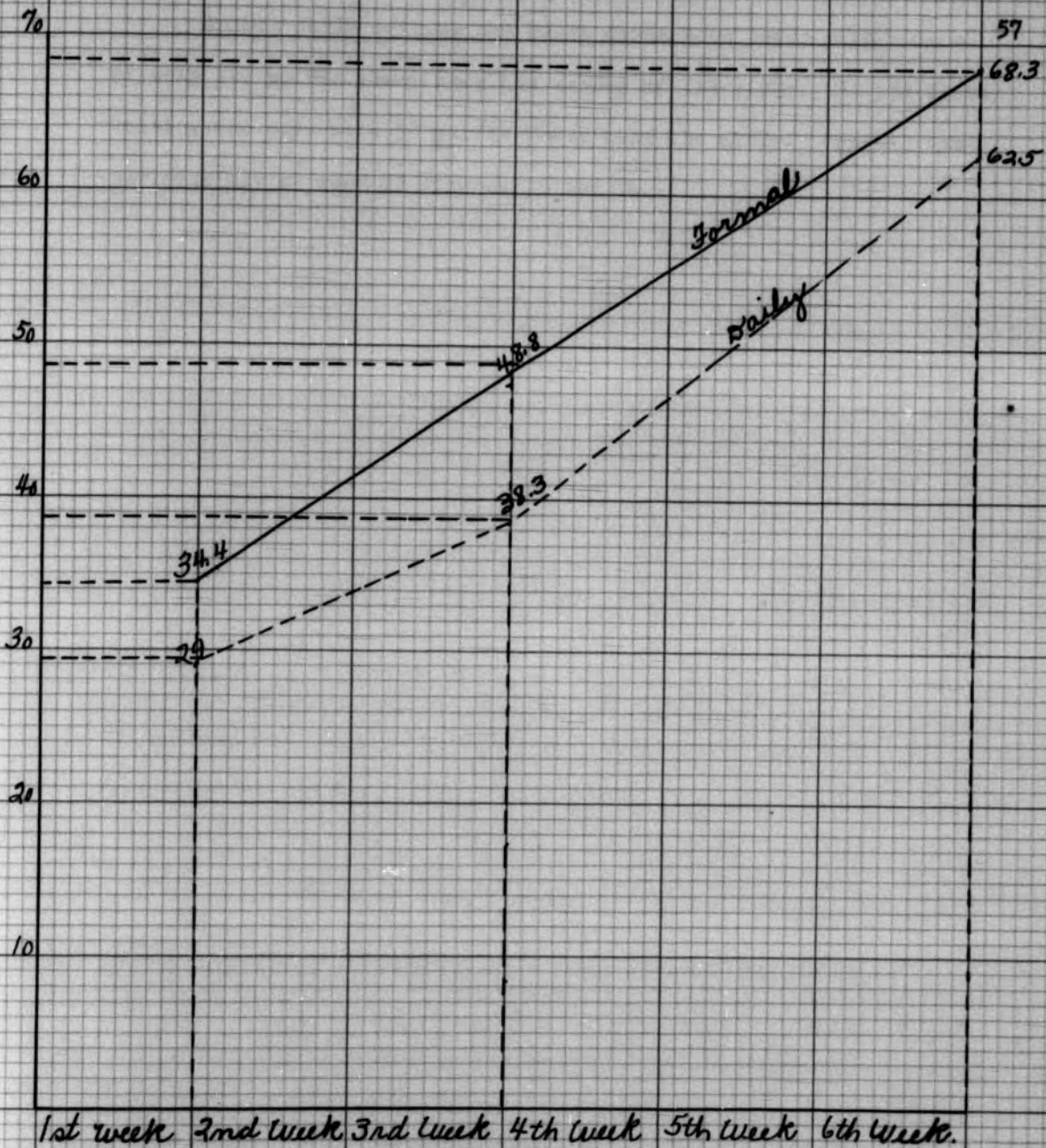


Figure 14  
 Progress of Fifth Grade Girls  
 Formal and Daily Writing

In the daily writing the sixth grade boys began with a score of only 1.6 points lower than the scores of the girls. In the formal writing the boys were 10 points lower than the girls. Graphic comparisons may be seen in Figures 15 and 16.

*Progress of Sixth Grade Boys, Formal and Daily Writing*

*Figure 15*

*Progress of Sixth Grade Boys, Formal and Daily Writing*

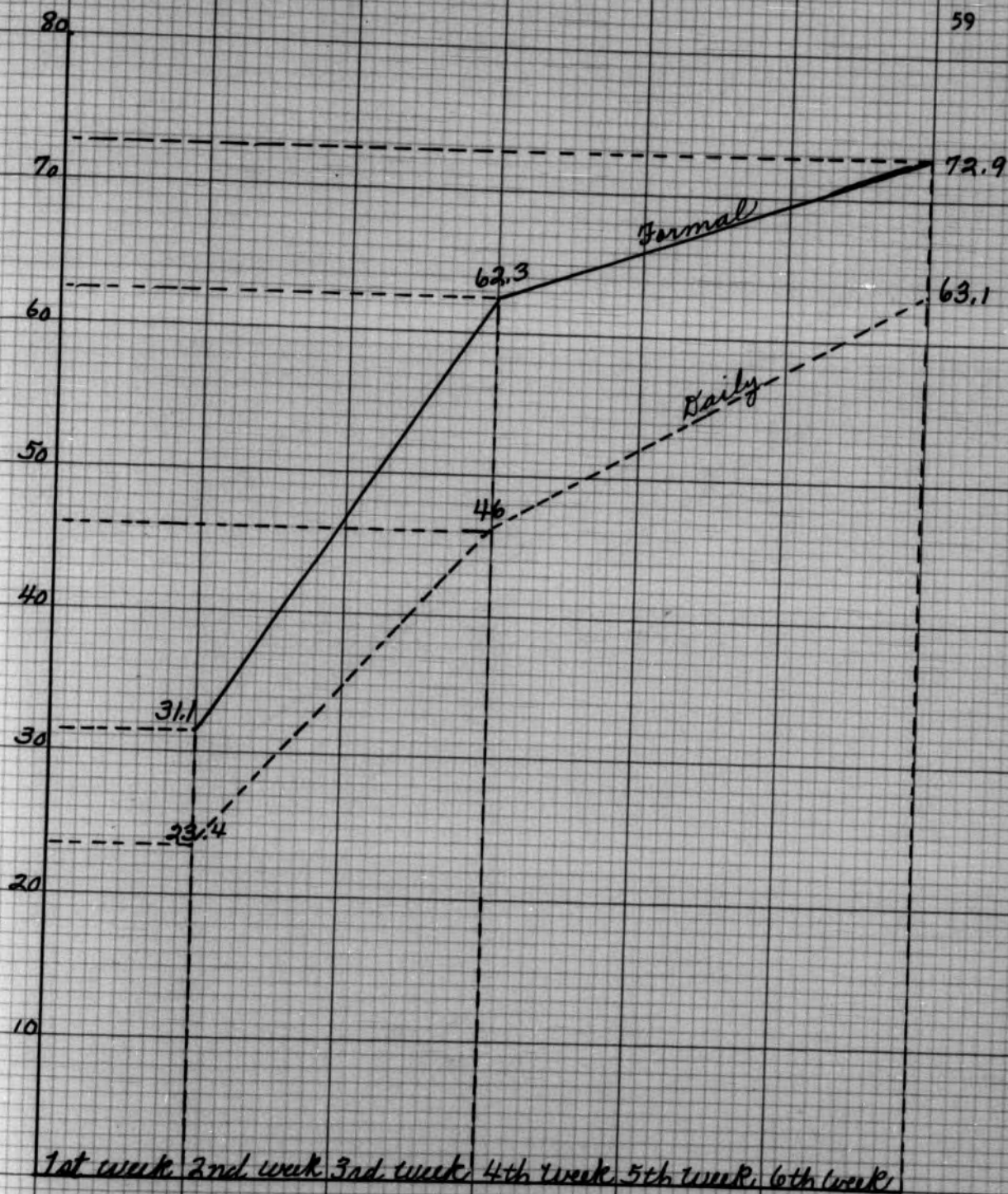


Figure 15

Progress of Sixth Grade Boys, Formal and Daily Writing

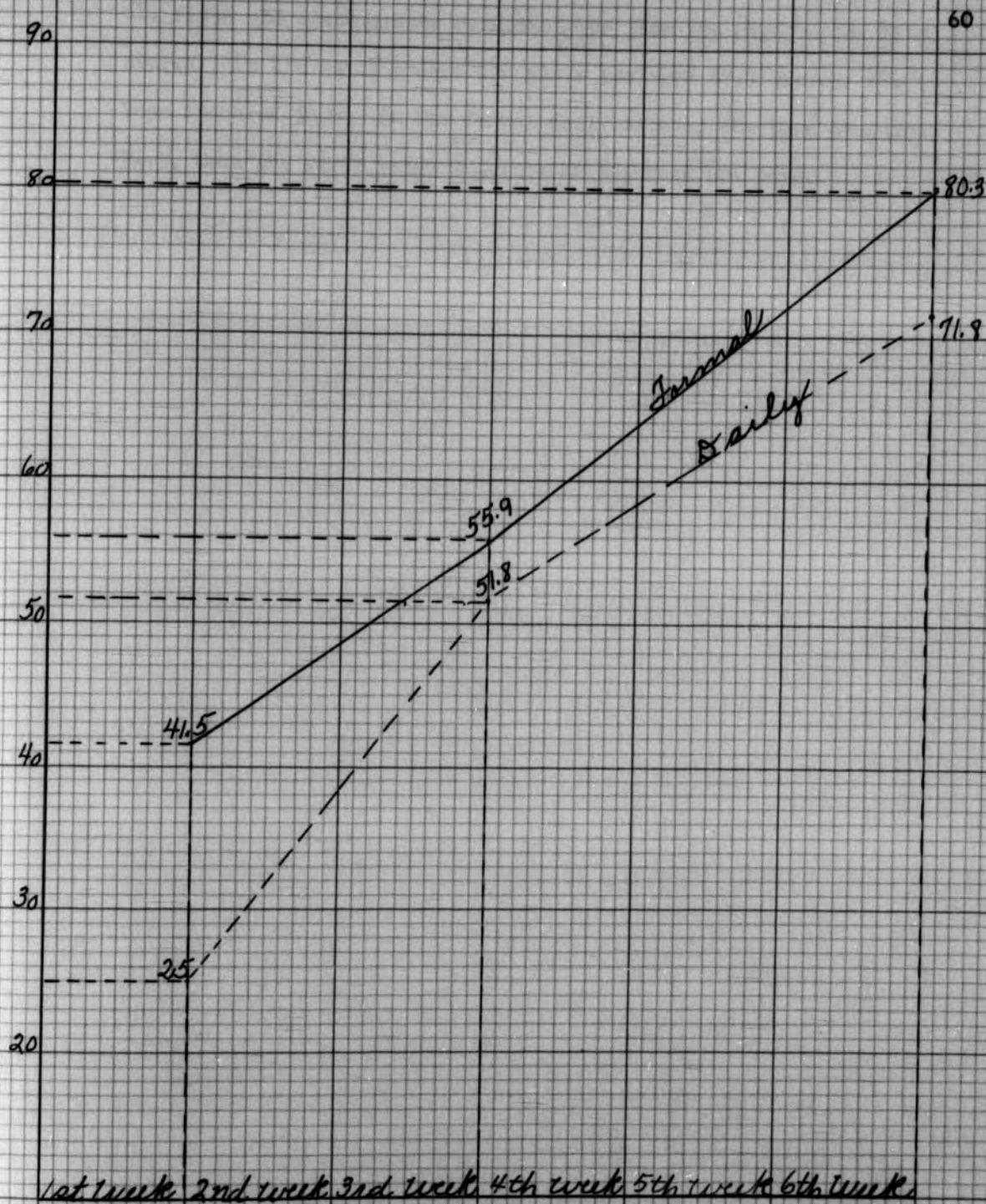


Figure 16  
 Progress of Sixth Grade Girls, Formal and Daily  
 Writing

From Figures 17 and 18, it is evident that the girls from both the fifth and sixth grades ranked higher than the boys on the final scores. In the daily scores the girls averaged 67.2 whereas the boys averaged 56.6. On the formal daily scores, the boys averaged 74.3, thus the girls rated 9 points higher than the boys.

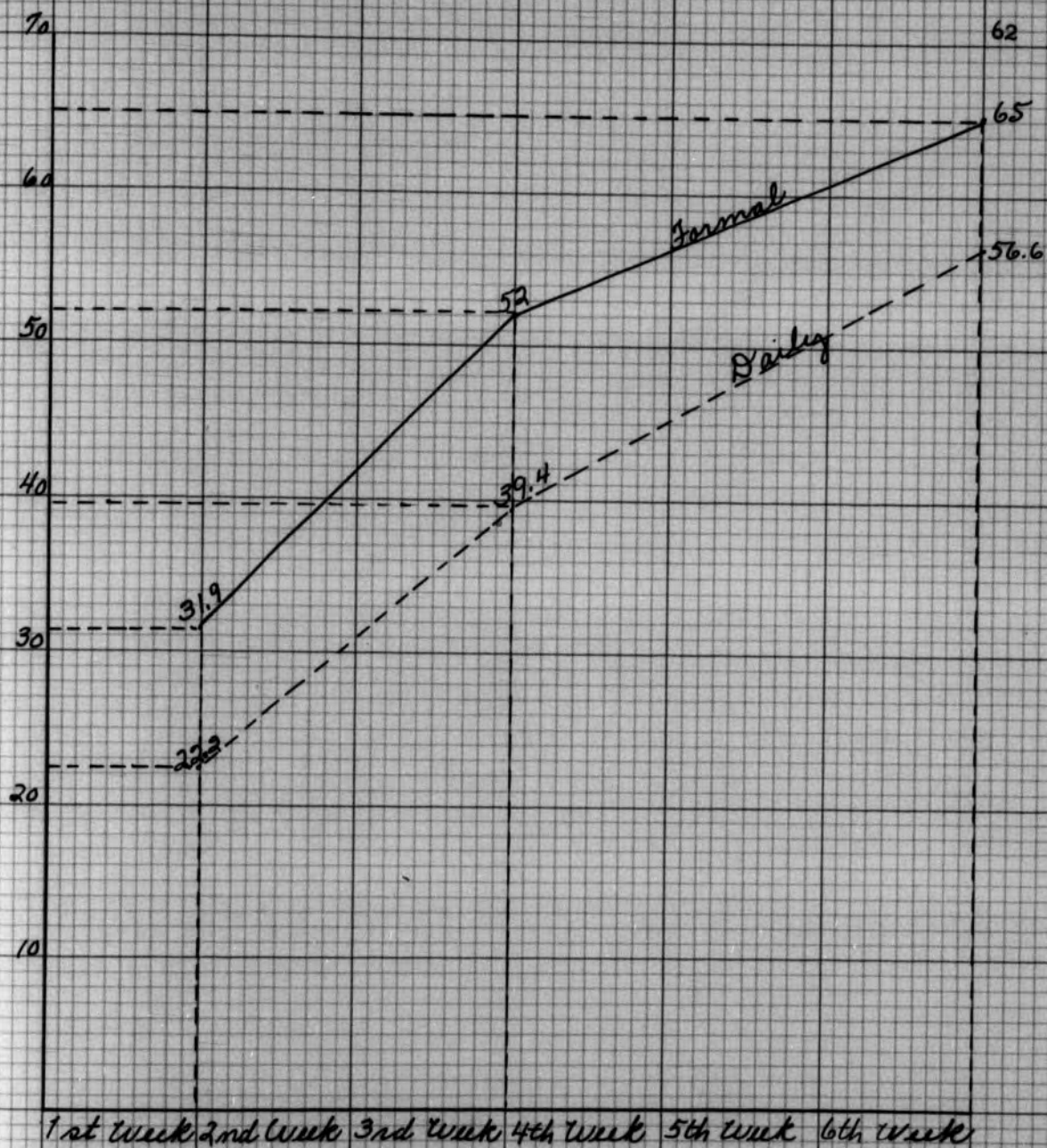


Figure 17  
 Progress All Boys  
 Formal and Daily Writing



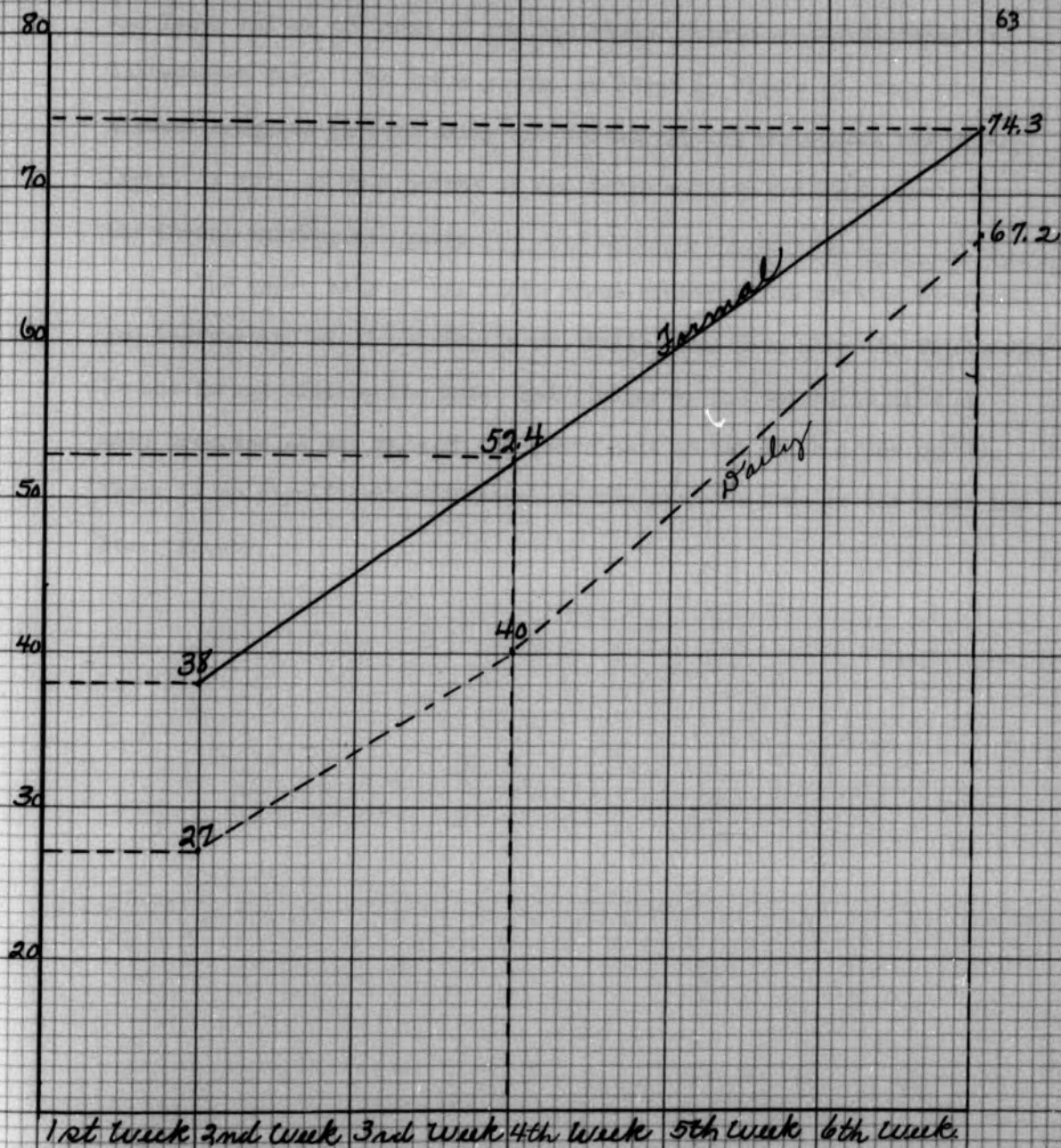


Figure 18

Progress all girls

Daily and Formal Writing

Figures 19 and 20 show the fifth grade group divided into upper and lower halves in terms of the individual scores on the Metropolitan Achievement Test. The lower group, as shown in Figure 19, made continuous progress in both daily and formal writing throughout the experiment. A gain of 26.5 points in the daily writing and 29.9 points in the formal writing was made.

The upper half of the fifth grade students made greater progress, and improvement of 31 points, in the daily writing as shown in Figure 20. In the formal writing the upper half failed by 1.2 points to make as much progress as was made by the lower half of the fifth grade pupils. There is no significant difference in the progress made by the upper and lower groups.

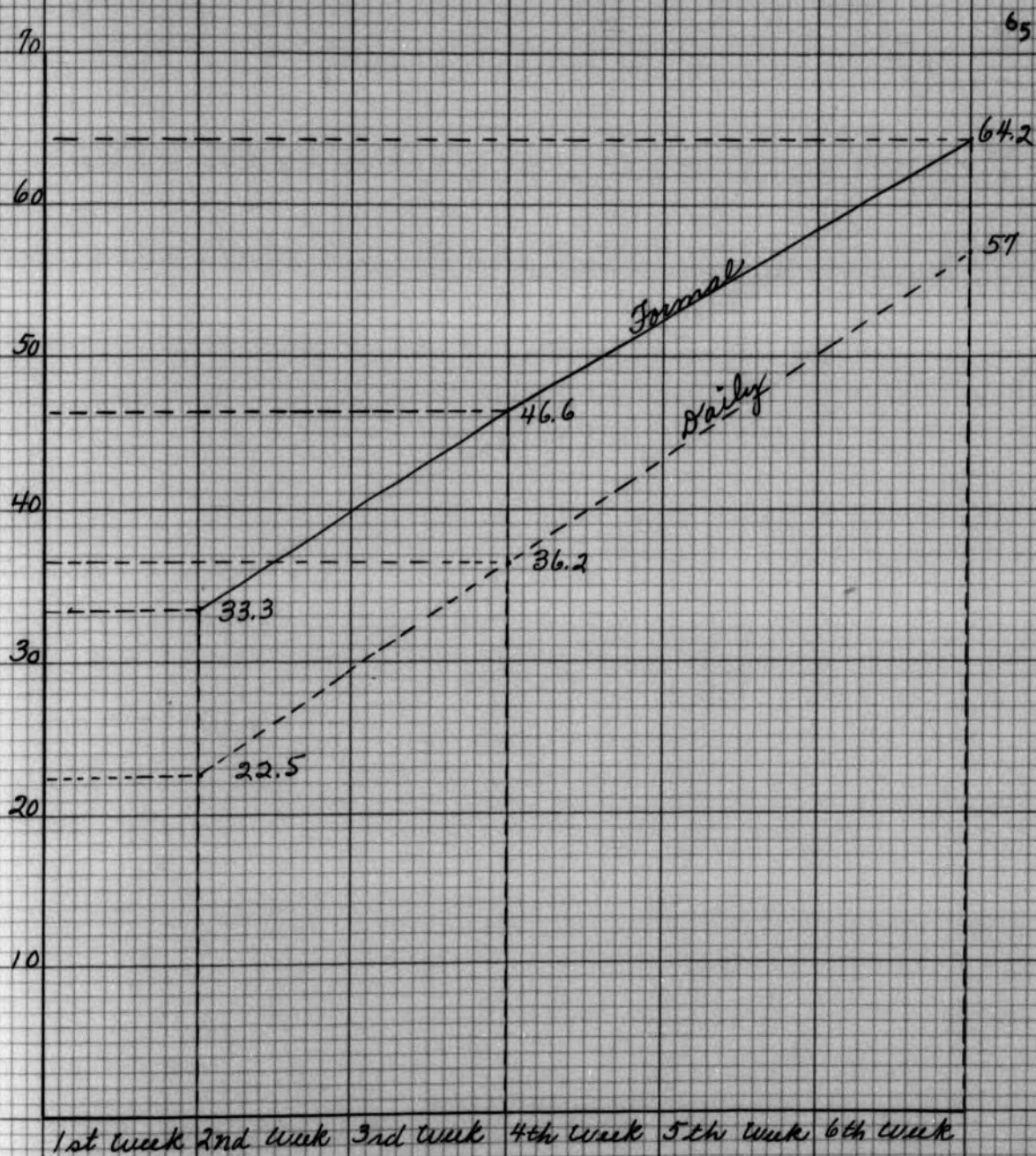


Figure 19

Improvement of Writing  
 Lower Half of Fifth Grade Pupils  
 Scored on Metropolitan Achievement Test

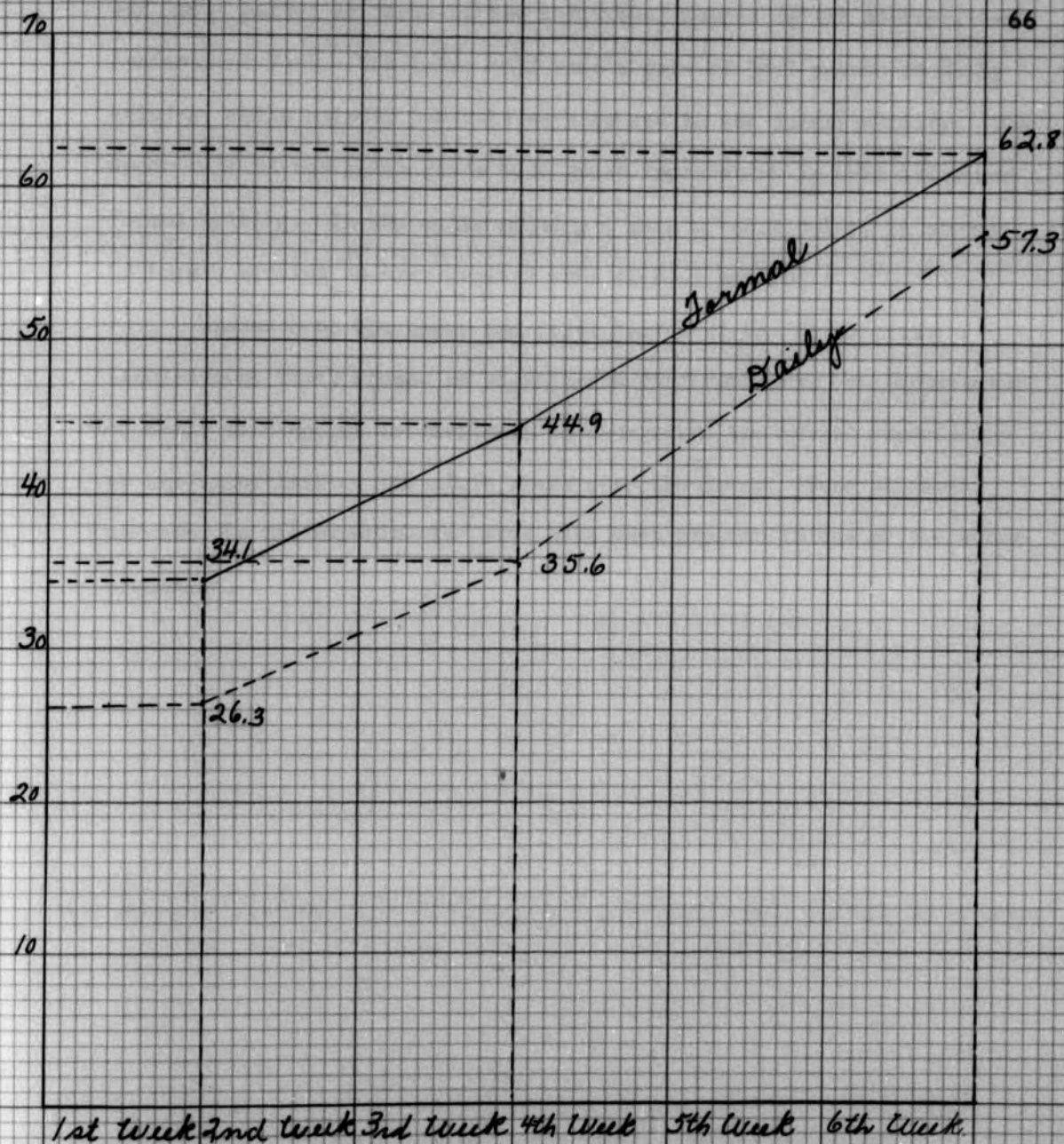


Figure 20

Improvement of Writing  
 Upper Half of Fifth Grade Pupils  
 Scored on Metropolitan Achievement Test

Figures 21 and 22 show the sixth grade groups divided into upper and lower halves in terms of the individual scores on the Metropolitan Achievement Test. The lower half made a gain of 37.3 points in daily writing, while only 33.3 points were gained in the formal writing. The upper half of the sixth grade made great improvement in both daily and formal writing. In the daily writing a gain of 46.2 points is shown; in formal writing an even greater gain of 52.3 points.

Inasmuch as the upper and lower halves of the fifth grade (Achievement Test) showed no significant differences in the improvement of their writing, it is difficult to understand the marked superiority of the upper half of the sixth grade over the lower. Some variable, unknown to the experimenter must have been present in one or the other situation.

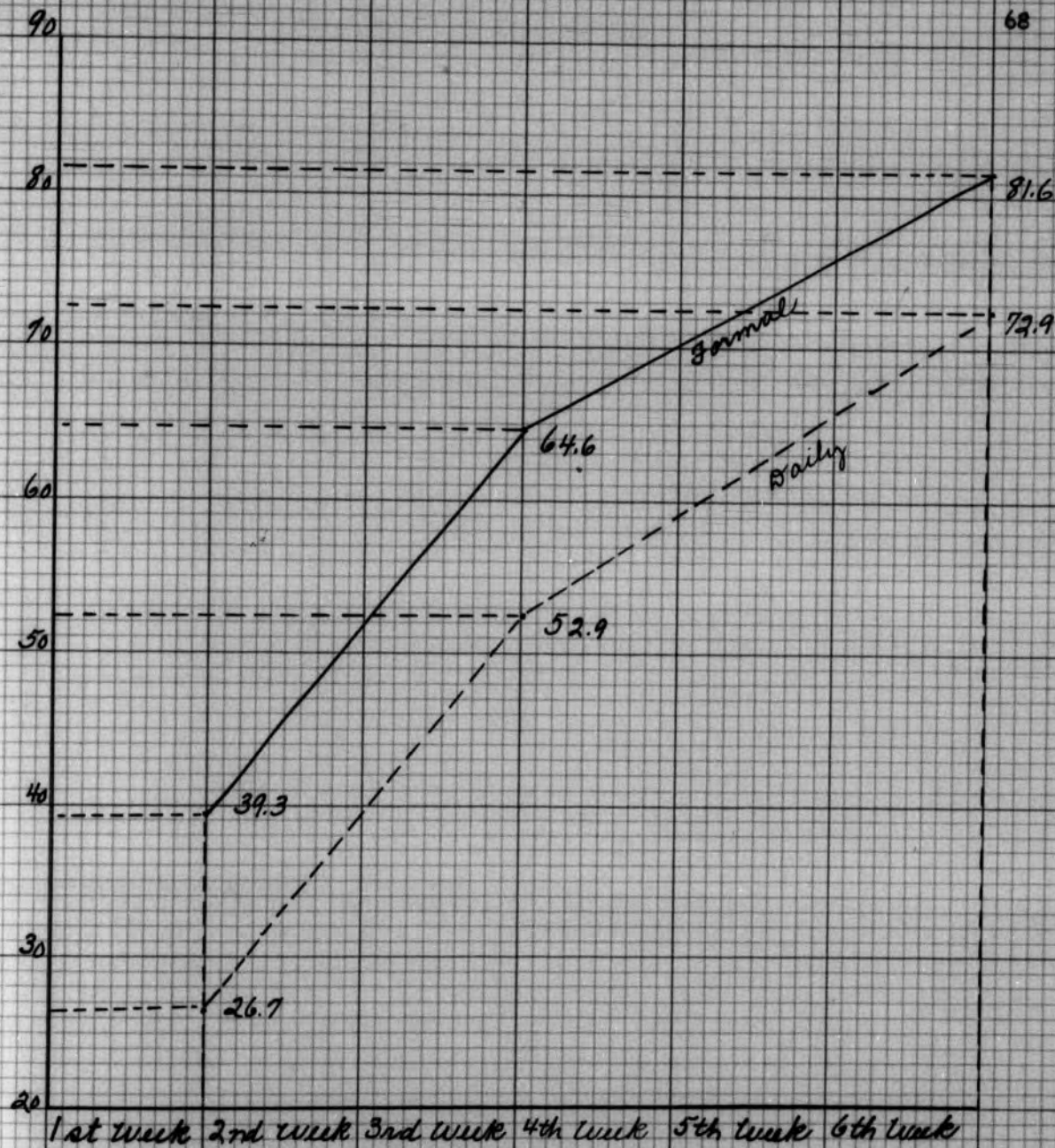


Figure 21

Improvement of writing  
 upper half of Sixth Grade Pupils  
 Scored on Metropolitan Achievement Test.

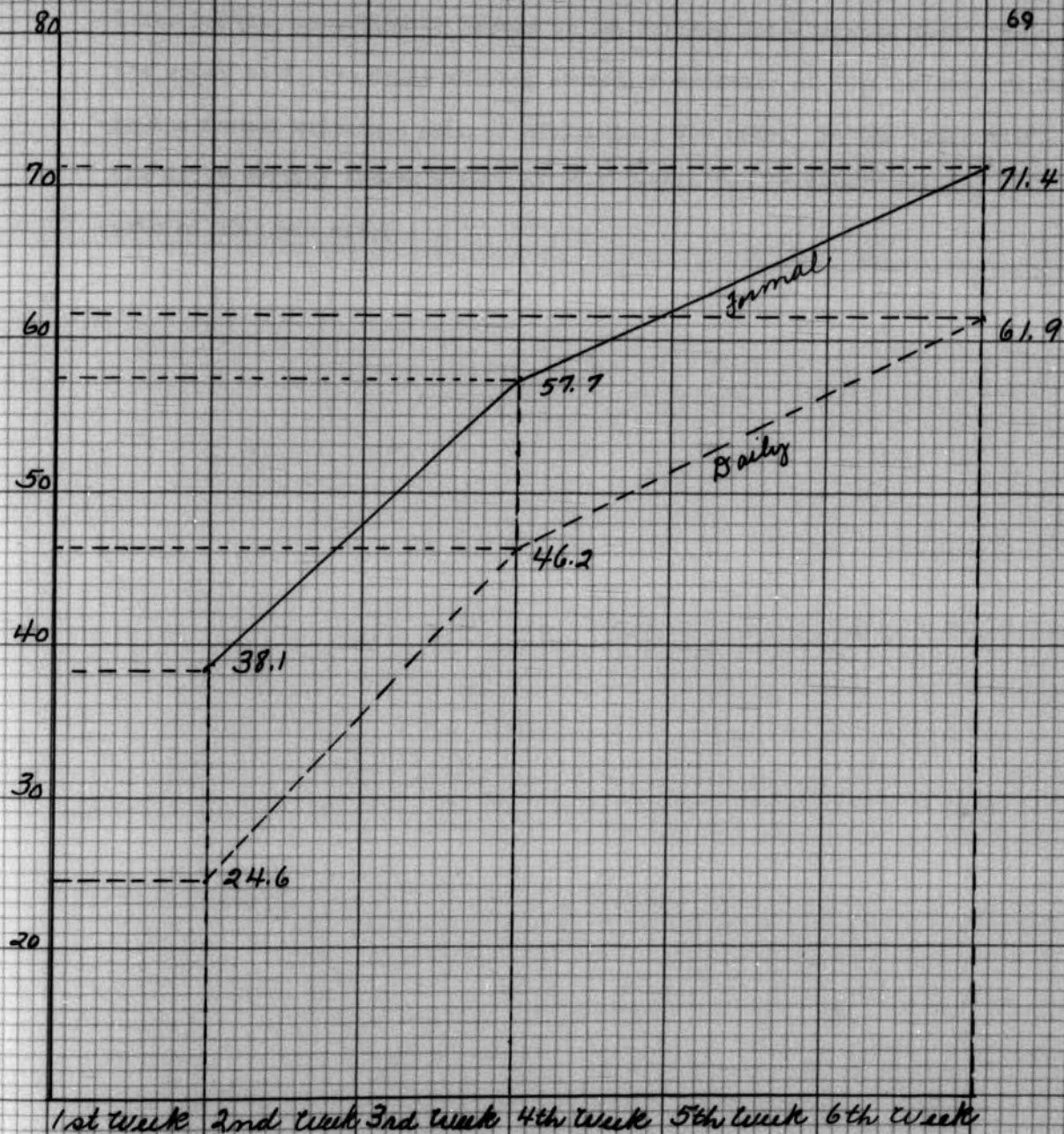


Figure 22

Improvement of Writing  
 Lower Half of Sixth Grade Pupils  
 Scored on Metropolitan Achievement Test.

Figures 23 and 24 show the fifth grade divided into the upper and lower halves, according to scores on the Pintner Intelligence Test. In the upper half, the daily writing showed an increase of 32.4 points, while in the formal writing a gain of 29.5 points was made. In the lower half, the daily writing showed a gain of 27.7, while in the formal writing a gain of 20.1 was made.



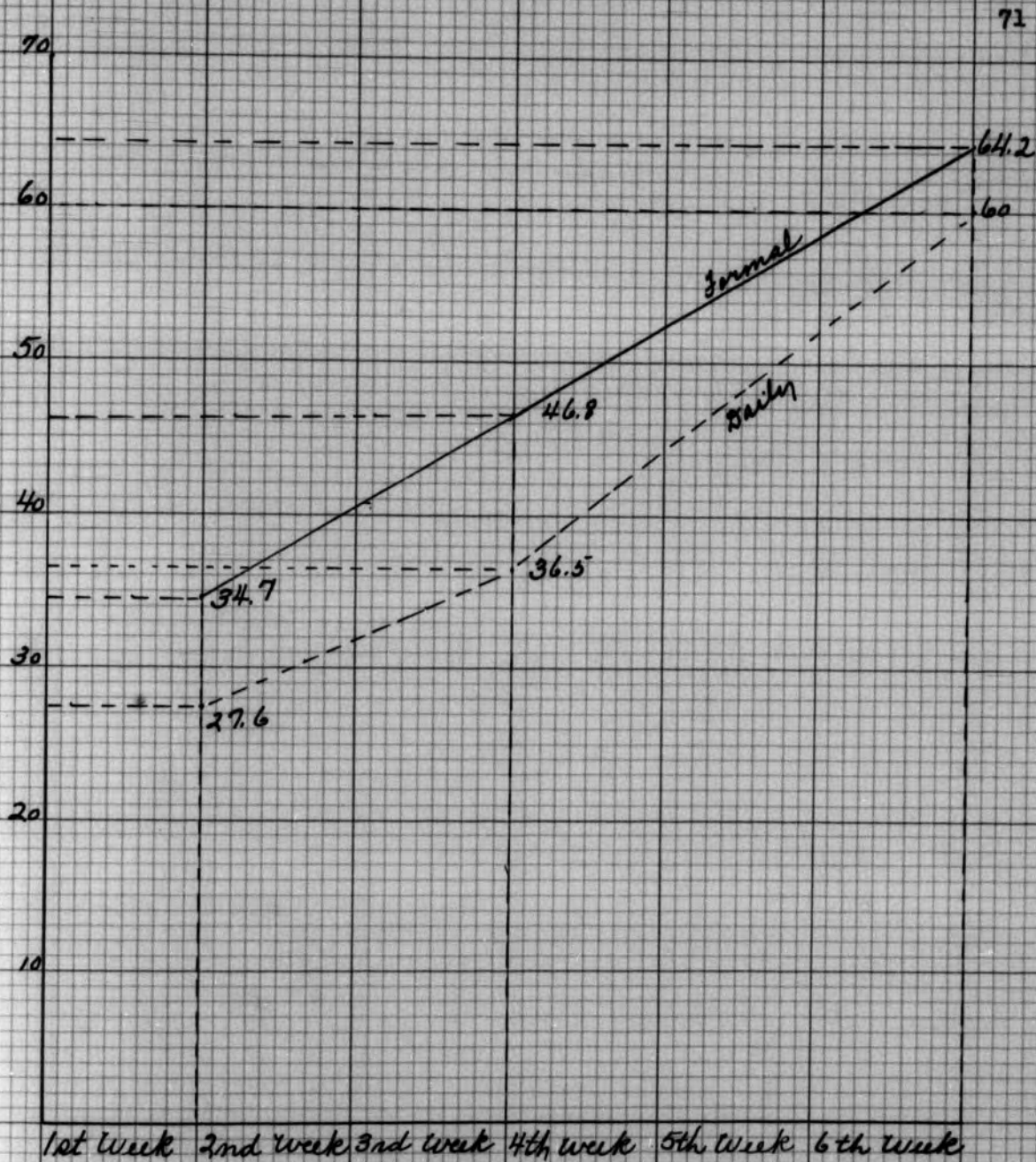


Figure 23

Improvement of Writing  
 Upper Half Fifth Grade Pupils  
 Scored on Pintner Intelligence Test

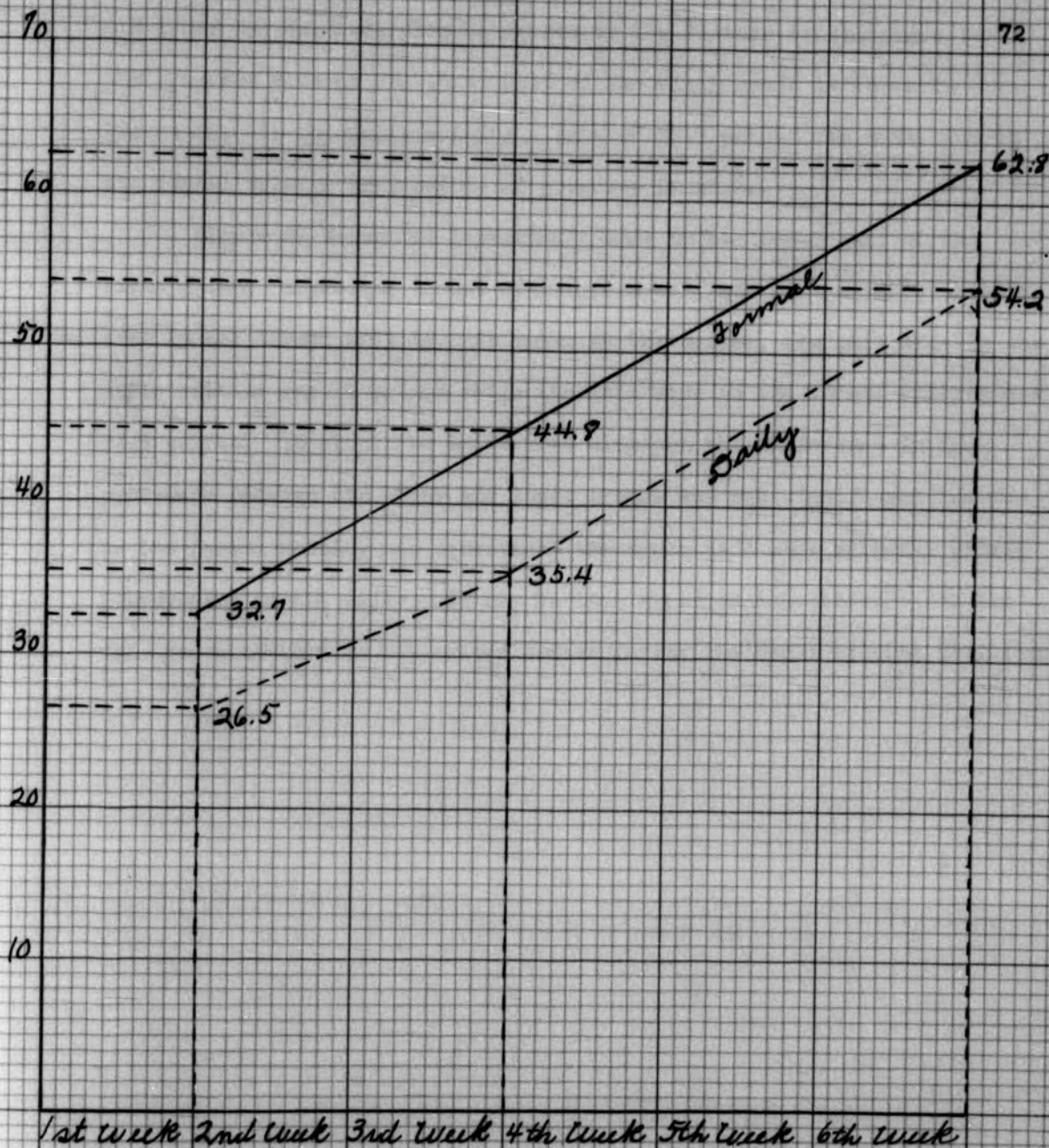


Figure 24

Improvement of Writing  
 Lower Half Fifth Grade Pupils  
 Scored on Pintner Intelligence Test

Figures 25 and 26 show the sixth grade divided into the upper and lower halves, according to scores on the Pintner Intelligence Test. The progress made by the lower half of the sixth grade is shown in Figure 23. In the daily writing a gain of 37.7 points was made, and in the formal writing 32.9 points of progress is shown.

Figure 26 shows the improvement made by the upper half of the sixth grade. A greater amount of progress was made in the daily writing than in the formal writing. As shown by the scores, the gain made in the daily writing was 49 points while the gain made in the formal writing was 33.5 points. It should be noted that although the difference in improvement between the upper and lower groups was not significant insofar as the formal writing was concerned, the upper half made markedly greater improvement in the daily. It may be that superior intelligence enables this group to hold to the motive better during the daily writing activities.

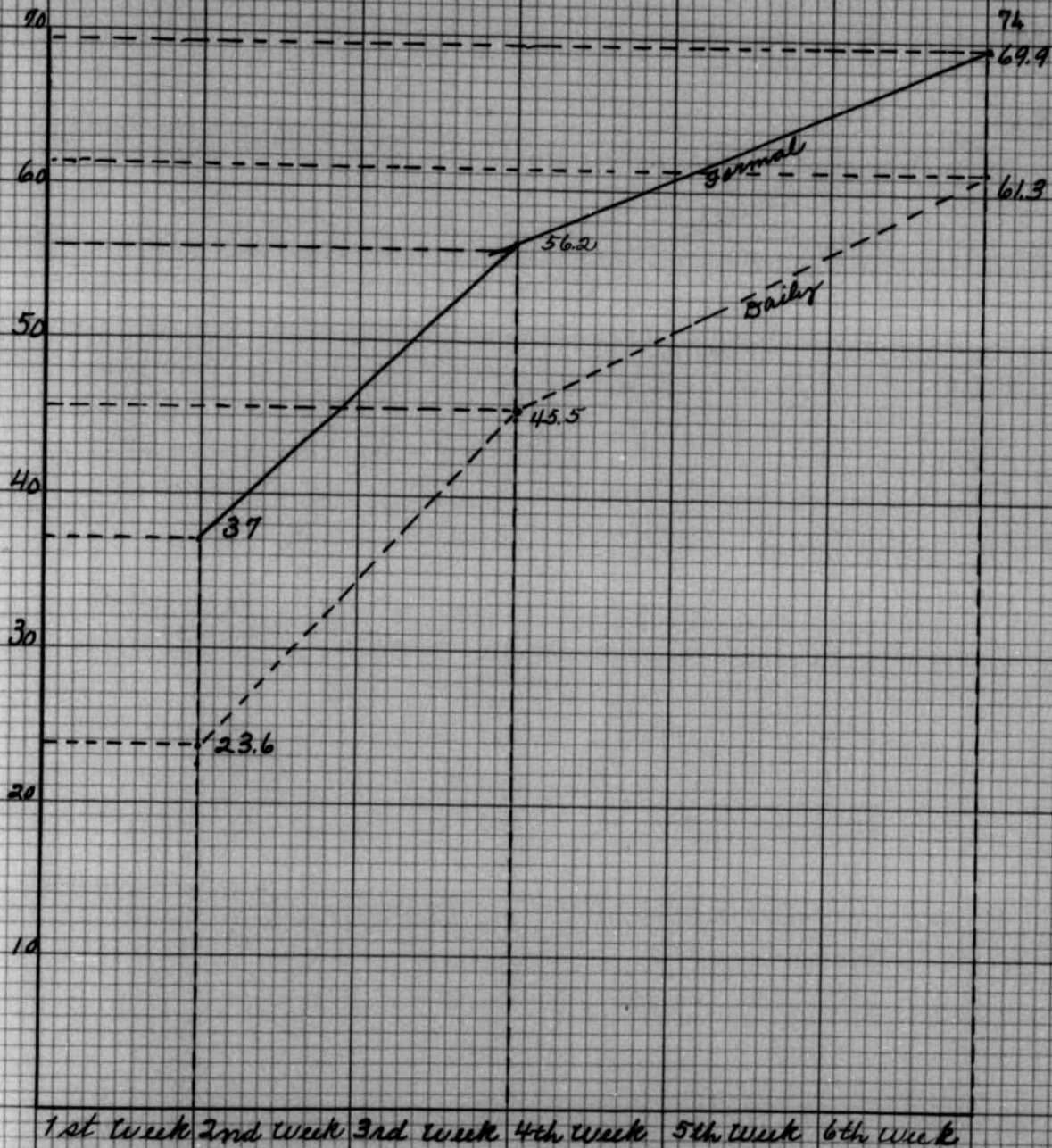


Figure 25  
 Improvement of Writing  
 Lower Half Sixth Grade Pupils  
 Scored on Pintner Intelligence Test

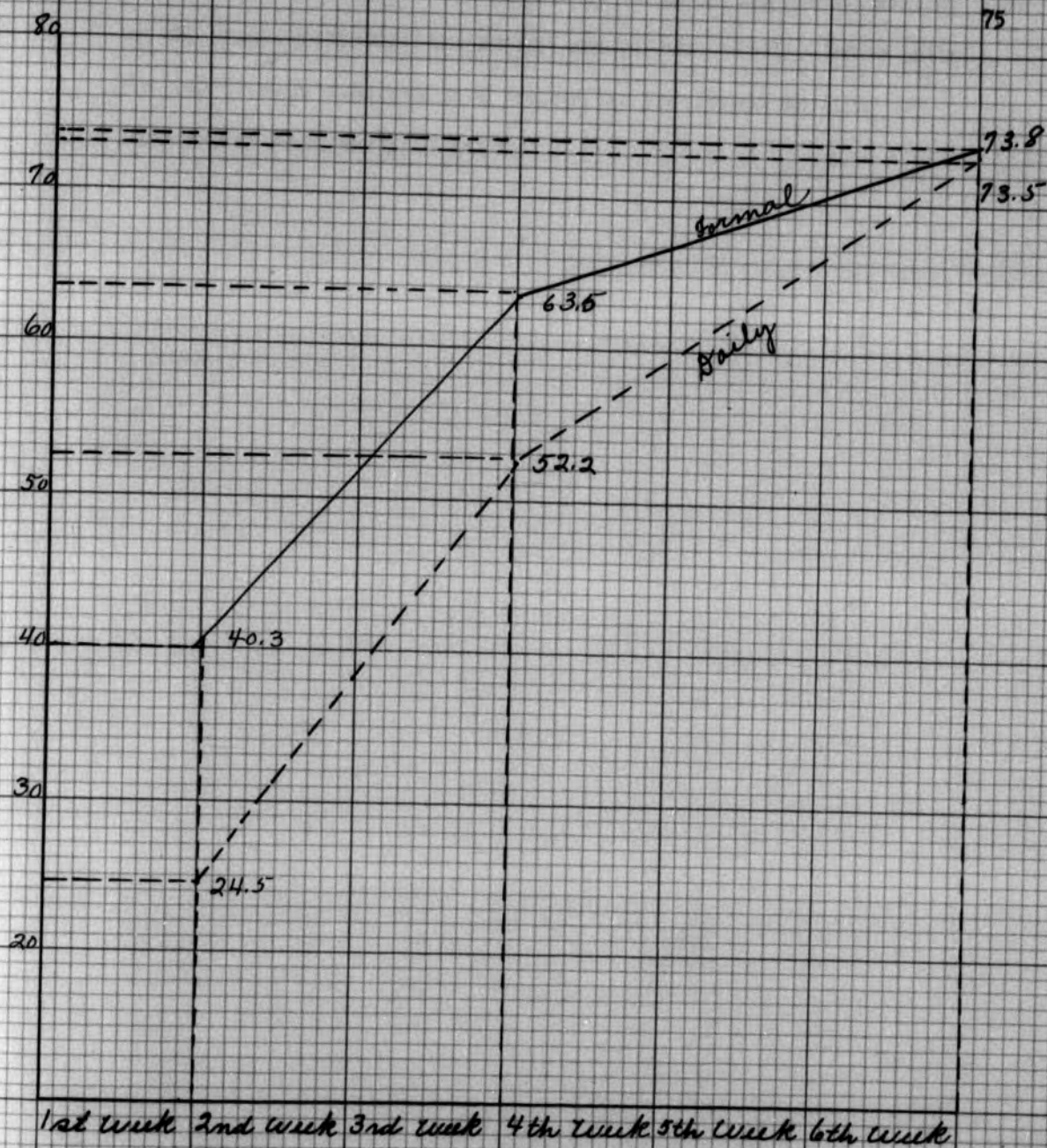


Figure 26  
 Improvement of Writing  
 Upper Half Sixth Grade Pupils  
 Scored on Pintner Intelligence Test

Figure 27 shows the improvement in daily and formal writing made by all pupils participating in the experiment. In the daily writing, the improvement made was 36.7 points; in the formal writing the improvement made was 31.5 points.

but will be included with the rest of the work

Figure 27

Improvement in writing

All Pupils

Improvement in Daily Writing 36.7 points

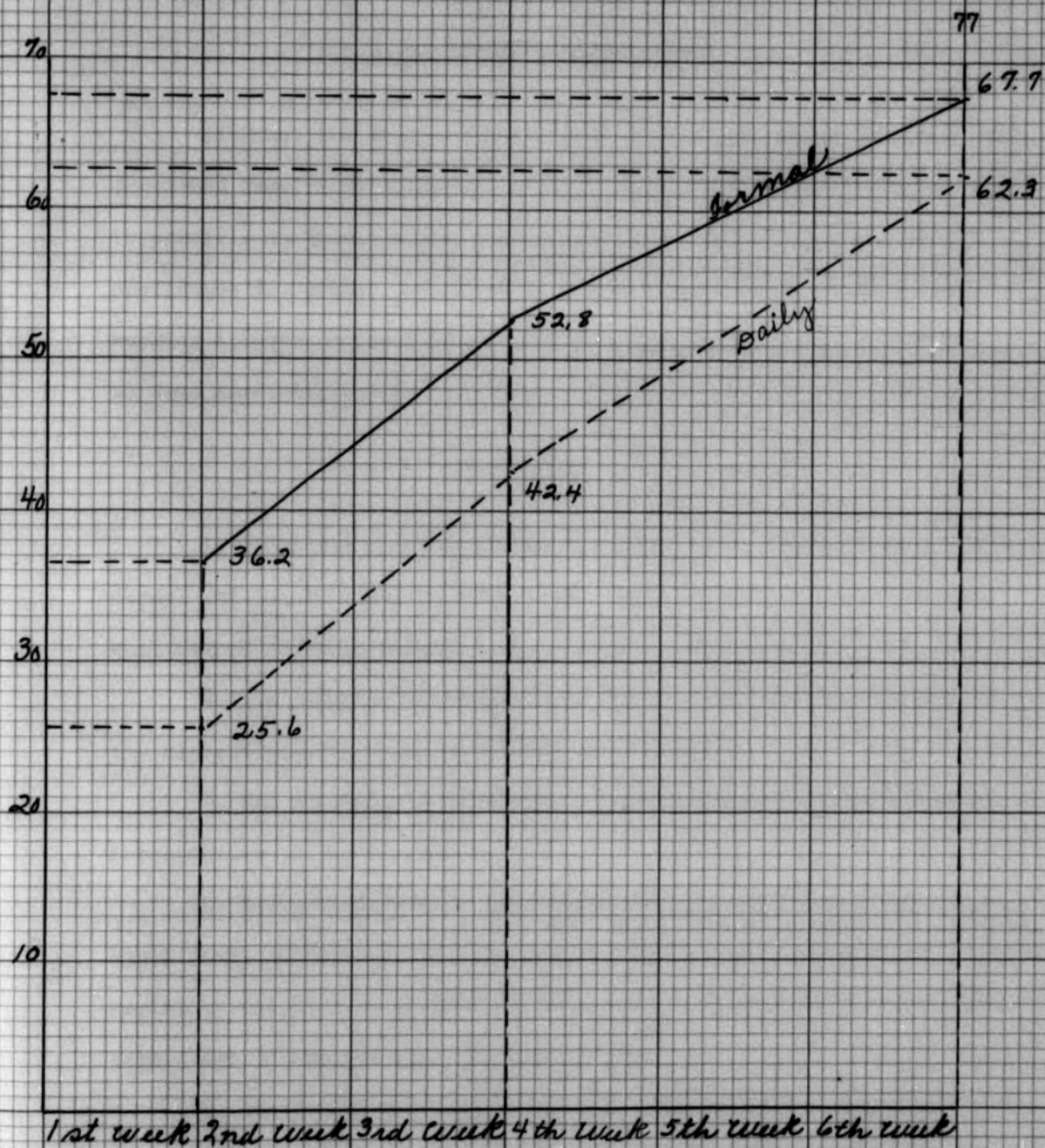


Figure 27  
 Improvement of Writing  
 All Pupils

Scored on Pintner Intelligence Test

## CHAPTER V

## CONCLUSION AND RECOMMENDATIONS

Although the four classes of one hundred and forty children have furnished insufficient data on which to base sound generalizations, it is possible to draw certain conclusions with some confidence. This confidence is further justified by the fact that other investigators working in other aspects of education have drawn conclusions similar to some appearing below.

## CONCLUSIONS

1. Fifth and sixth grade pupils show a great improvement in both formal and daily handwriting when they themselves have established a goal toward which to strive.
2. The purpose, if deeply felt, carries the children quickly to the highest quality of writing possible to them.
3. The purpose, if sufficiently wide, improves all written work irrespective of its character.
4. The self-motivated improvement of boys and girls shows no significant difference. The girls, generally, were better writers at the beginning and also at the end of the project. Their slight superiority seemed due to factors other than the motive.
5. The degree of intelligence of the individual seems related in a significant way to the amount of progress made. The upper half (in intelligence) of the class grasped the purpose better and held it more persistently.



6. In this particular project, there was no significant relationship between scores on an achievement test and the improvement of the quality of handwriting.

7. The inferiority of the sixth grade and the fifth in the initial papers strongly suggests regression. The rapid advance of the sixth grade to a superiority over the fifth indicates that strong self-motivation quickly brings a group to a quality commensurate with its age level and maturation, thus irrespective of any degree of regression.

8. A handwriting scale, used frequently by the pupils themselves, helps to initiate the motive for improvement and to maintain its intensity.

9. The "hospital" for poor writers, when initiated and conducted by the pupils themselves, greatly aids in the achieving of the individual and group goals. In this particular project, the "hospitalized" pupils sought this opportunity for help in reaching their individual goals.

#### RECOMMENDATIONS

1. It is recommended that teachers create the conditions under which pupils become aware of their shortcomings in handwriting and desire to overcome them. These conditions include a sensitivity to the qualities of handwriting as revealed by a writing scale, and objective evidences of the quality that other similar groups have achieved and maintained. It also includes a setting in which children write much that is read by other children.

2. Once a true project is initiated by the pupils, it is recommended that the guidance procedure include

(a) The setting of both individual and group goals, each realistic in terms of the individual's coordinations or the group's maturation.

(b) A committee of pupil experts whose duty it will be to gather papers at unpredictable times, rate them, and present evidences to the group.

(c) The graphic representation of both individual and group progress.

(d) (d) A "hospital" in which poor writers may receive individual help.

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