A STUDY OF THE LOGICAL METHOD AS COMPARED WITH THE ROTE METHOD OF LEARNING SPELLING

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TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
II.	PROCEDURE	4
III.	A SURVEY OF THE PROFESSIONAL LITERATURE IN THE FIELD OF SPELLING - ROTE MEMORY METHOD AS COMPARED WITH LOGICAL METHOD	9
IV.	MATERIALS AND GROUPS USED IN EXPERIMENTS ...	15
V.	PROCEDURE AND RESULTS	22
VI.	SUMMARY AND CONCLUSIONS	35
BIBLIOGRAPHY		38
APPENDIX		39
VITA		43

LIST OF TABLES

TABLES		PAGE
1.	Number of Words Most Frequently Misspelled and Their Distribution in the Various Lists and the Number of Pupils Misspelling These Words	5
2.	Lists of the Most Frequently Misspelled Words Chosen for the Experiment and the Number of Students Misspelling Them	16
3.	The Chronological Age, Mental Age and Grade Equivalent of the Pupils Used in This Experiment as Determined by the Iowa Silent Reading Test	18
4.	The Mental Age, The I.Q. and the Intelligence Grade Placement of the Total Mental Factors, The Language Factors and the Non-Language Factors of the Subjects Taking the California Test of Mental Maturity Elementary - '50 S - Form	20
5.	Individual Total of Words Correctly Spelled and Ranking of Students According to the Total Words Spelled Correctly at Each Testing Period	26
6.	Total Number of Words Spelled Correctly by Individual Pupils Throughout the Experiment and Pupil Ranking	28
7.	Correlation Results of the Logical and Rote Methods of Learning Spelling	29
8.	Total Number and Percentage of Words in Each List Misspelled at Each Testing Period	31
9.	Original Misspelling of Words and Frequency of Being Misspelled at Each Testing Period ..	32
10.	Number of Words Misspelled at Each Testing Period by Individual Students	34

PREFACE

When one begins to work on and accomplish an undertaking it usually is the result of some inspiration. The inspiration for the work and interest of the beginning and the continuation of this thesis was derived from twenty-eight sixth grade boys and girls of Ashland's Henry Clay Elementary School and Mr. Austin E. Grigg, Assistant Professor of Psychology, University of Richmond.

The author wishes to express sincere thanks and gratitude to Mr. Grigg for bringing before him and arousing his interest in the problem which is set forth in this project and for the help and understanding which he gave while work was being done for the completion of this thesis.

The author's class at Henry Clay Elementary School made this thesis possible. To these boys and girls he extends a very hearty thanks for their help and cooperation without which this work would not have been accomplished.

He would like to thank Dr. Edward F. Overton, chairman of the department of Education, University of Richmond, for his patience in helping and guiding him while this thesis was being done; also, Dr. John F. Showalter, administrative assistant to the superintendent, Richmond Public Schools and Mrs. Day Blickenstaff, teacher of Science at Henry Clay High School for their help and encouragement.

CHAPTER I

INTRODUCTION

Since public education has become a privilege for everyone, there has been a gradual change in the school systems and teaching techinques. The ideas of school, the relationship of school to the overall development of the individual and how the child learns have been in the educational spotlight for the past few years.[1]

Teachers and parents often cannot understand the development of the mental and physical growth of children in their relationship to school work. In recent years studies have been made concerning the various aspects of the child's development in various subjects.[2] As new facts and new techinques of teaching come forth and new problems present themselves, no doubt there will be more and more experiments to help this progression of betterment and to help solve the problems which arise.

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[1] L.O. Taylor, Notes on class lecture in School and Community Relationships, University of Richmond Summer School, 1st Term, 1952.

[2] J.R. Butler, "Arithmetic Can Be Exciting", California Teachers Association Journal, Volume 47, p. 11, October, 1951.

Paul McKee, "Vocabulary Development", 36th Yearbook of the National Society for the Study of Education, Part 1, pp. 277-302.

The subject of spelling has had its share of attention in recent years. The now well used question of why schools don't teach spelling anymore has been asked a countless number of times by colleges and businessmen.[3]

The experiments done in this thesis do not attempt to answer the above question. However, the experimenter does hope that it will help towards a better understanding of the better techniques of teaching spelling in which the individual speller is the basis for the teaching.

The problem set forth in this thesis is: Is the Experience or Logical Method of teaching spelling superior to the Rote Memory Method?

In the Experience or Logical Method the words were presented to the students in a sentence. The child first learned to pronounce the words. Then the meaning was taught and the student was helped to picture some situation in which he would experience the word. For instance the word artificial was given in a sentence such as: The boy gave the teacher an artificial stick of chewing gum.

Next, an illustration of this was given thus: If the student wrapped a piece of card board in a chewing gum

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[3] A.E. Grigg, Notes on class lecture in Child Behavior and Adjustment, University of Richmond Summer School, 2nd Term, 1952.

wrapper, then put it into the gum holder and gave it to the teacher, the teacher would receive an artificial item because the chewing gum was not real.

In the Rote Memory Method, the list of words is given just as a list of words. The words are learned without any meaning or relationship to the experience of the students.

The question now arises of the words used in the Rote Memory lists. In the Rote Method one may ask if the child may not already be familiar with some of the words in the Rote list. Seventh grade words were chosen because it was felt that they would be less familiar and during the time between the learning of the words and the recalls, there would be less chance of coming across the words in both the Rote and Meaningful or Experience lists. The fact that some of the words in the Rote lists may be familiar to some of the students is one of the uncontrolable variables in the experiment.

CHAPTER II

PROCEDURE

The source, from which the words used in the experiment were taken, is Thorndike and Lorge's, The Teachers Word Book of 30,000 Words.

Four hundred seventh grade words were choosen at random from the above-named book. Seventh grade words were used because it was felt that sixth grade words would be too familiar and probably not difficult enough.

This list of words was given to the class without any previous instruction in spelling at the rate of fifty words per sitting. The words were then corrected and the one hundred and twenty most frequently misspelled words were chosen for the project.

Twenty-eight pupils, eleven boys and seventeen girls, were used in the experimenting. In the list of one hundred-twenty words there were thirty-nine words which all twenty-eight students spelled incorrectly; there were thirty-nine words which twenty-seven students did not spell correctly; nineteen words which twenty-six students misspelled; there were nineteen words which twenty-five of the students failed to spell correctly and four words which twenty-four students

misspelled.

The words were then divided into six lists, each list containing twenty words. The most frequently misspelled words were divided equally in these six lists. Table I shows the number and distribution of words in the lists.

TABLE I

NUMBER OF WORDS MOST FREQUENTLY MISSPELLED AND THEIR DISTRIBUTION IN THE VARIOUS LISTS AND THE NUMBER OF PUPILS MISSPELLING THESE WORDS

Number of Pupils	List A	B	C	D	E	F
28	7	7	7	6	6	6
27	6	6	6	7	7	7
26	4	3	3	3	3	3
25	2	3	3	3	4	4
24	1	1	1	1	0	0

After the grouping of the words the lists were paired. The pairs were A-B, C-D and E-F. Lists A, C and E were learned by the Rote Memory Method during alternate weeks. Lists B, D and F were learned by the Experience Method during the alternate weeks between the learning of the lists using the Rote Memory Method.

The first week Rote List A was given to the class. During the week the spelling of the words were learned with-

out any meaning or association. Some pronounciation was taught because some of the students seemed unable to spell the words without first learning to pronounce them.

On Thursday of the same week the list was called to the class. If the student spelled all the words correctly the paper was kept. If a student misspelled any words the paper was returned. During the study period in the afternoon the students studied the words. Friday morning the list was called again to the students misspelling words on Thursday. This time if any of the words were misspelled the student was given the opportunity of getting extra help during the lunch hour. When the incorrectly spelled words were mastered the examiner asked for the spelling of various other words in the list which had been spelled correctly previously. The student was given two chances and if any words were misspelled the whole list was to be studied. During the afternoon study period the words were called again to those who had still not learned the list.

The above procedure was followed because the examiner wished to be sure that the words spelled correctly the first time were not forgotton while the misspelled words were being learned. The learning of these words was made into a game

and in only a few instances, with the very poor spellers, did it take longer than this to master the list. In some instances the very poor spellers studied the list over the week-end and the words were spelled on Monday during the first period.

The week after Rote List A was given Meaningful List B was given with each word used in a sentence. The first day was spent in getting each member of the class to learn the pronounciation of the words. On Tuesday the meaning of the word was taught. Also on Tuesday sentences were made with the words and each youngster was helped to picture a situation in which he or she would experience the meaning of the words. The period Wednesday was devoted to learning to spell the words.

Thursday Meaningful List B was called to the class. The procedure used with List A on Thursday and Friday was used with List B. This was done so each list would be completely learned by each student.

The third and fifth week respectively, Rote Lists C and E were given in the same manner as Rote List A. During the fourth and sixth weeks respectively, Meaningful Lists D and F were given in the same manner as List B.

The Thursday of each of the sixth, twelfth, sixteenth

and thirtieth weeks following the learning of Lists A, B, E and F the words in these lists were called to the students. Recalls of pairs C and D were given on the Thursdays of each of the sixth, tenth, sixteenth and thirtieth weeks following the learning of these lists. Due to the Thanksgiving Holidays a ten-week-recall for Lists C and D was substituted for the twelfth-week-recall which was used in Lists A, B, E and F.

CHAPTER III

A SURVEY OF THE PROFESSIONAL LITERATURE IN THE FIELD OF SPELLING - ROTE MEMORY METHOD AS COMPARED WITH LOGICAL METHOD

From research done in this particular field of spelling, it seems to this individual that experimentation along this line of spelling has been greatly neglected. The experimenter was unable to find any work that had been done in this particular field in trying to find which method of spelling had the greater retention rate. Countless hours were spent in trying to locate material.

The following libraries were used: University of Richmond, Richmond Professional Institute, Richmond City Library, Medical College of Virginia, Randolph-Macon College, State Library in Richmond.

Letters were written to numerous book companies, which published spellers, explaining the nature of the thesis and asking for information. In each answer received from these companies the author of the letter merely assumed that the Logical Method of learning spelling was the superior method.

Typical of the answers received from the publishing houses is this one:

" I think any attempt to set up a situation whereby

> a child would learn a vocabulary by a Rote Method would be a very difficult problem because unless the words that the child is learning to spell have meaning I don't think the child is going to remember the spelling of these words very long."[1]

Many teachers were asked their opinions on the topic of the superiority of one method over the other. In each instance the teacher was certain in his or her own thinking that the Logical Method of learning spelling was superior. They reasoned that it was a natural thing for one to retain spelling learned by the Logical Method longer than that learned by the Rote Method since that learned by the Logical Method was more meaningful.

Much work was found that had been done in the field of spelling, but no work could be found that dealt with this particular aspect of spelling.

In the experimenter's opinion this is very significant because it tends to show that little if any work has been done along this particular line of spelling. Another important fact is that the results of experiments done for the completion of this work tend to disprove the concept generally held by many people today; this concept being the more meaningful the word the greater the retention of the

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[1] Letter of R.E. Laidlaw to George M. Barrett, February 4, 1953.

spelling of the word.

Several articles were found which weren't too closely related to this work but which were closer in their scope than any others found. The following paragraphs are results of the study of professional literature in the field of spelling as related to the topic of this work.

Luther C. and Doris W. Gilbert,[2] at the University of California, were interested in the improvement of spelling through reading. As their subjects they used 23 upper class college students at the University of California.

These subjects were given fifty words in prose and fifty words isolated or in a list. After the study of both of the lists the eye movements of the subjects were photographed as they read prose in which some of the critical words of both lists were embedded. After this the subjects were tested for the comprehension of the reading material and for their spelling gains.

The findings of this experiment showed that these students failed to gain as much spelling through reading as they did through direct study.

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[2] Luther C. and Doris W. Gilbert, "The Improvement of Spelling Through Reading," Journal of Educational Research, Vol. 37, p. 458, Feb. 1944.

This article did not state to what extent the lists were learned before they were tested.

Mr. David Patton, Superintendent of Schools in Syracuse, New York, did experiments in spelling which resulted in his publication of a speller by Charles E. Merrill Publishers.

> "Mr. Patton gave tests all over the country on the use of words and meanings of words. In his summary sheets there was indicated a close correlation between the child knowing the meaning of a word and how to use the word with his ability to spell that word."3

Traxler, in doing research on Reading in the United States, found a recommendation of vocabulary building by Thorndike:

> "Thorndike has recommended the use of relatively simple materials in which the vocabulary is controlled and in which meaning can be derived largely from context, but he also pointed out certain advantages of teaching words in isolation."4

Agatha Townsend, in doing research at the Bureau of Educational Records in New York City, found that

> "all the evidence at hand shows that there is a definite tendency for good spellers to have superior

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3 The Contributions of Word Mastery Spellers to the Teaching of Spelling, (a pamphlet describing word mastry spellers), Charles E. Merrill Co., 1952.

4 Authur E. Traxler, "Research in Reading in the United States," Journal of Educational Research, Vol. 42, p. 490, March, 1949.

> vocabularies and to read well and for retardation in spelling to be associated with low vocabulary and inferior reading comprehension. Does this not suggest that remedial work in spelling may well be combined with work in word meaning?"[5]

The author of the above article stated further that so often the student is taught a word symbol whose meaning is a complete mystery to him. She asks the following questions: Does remedial work in vocabulary tend to result in increased spelling ability? Does remedial work in spelling tend to improve vocabulary?

In none of the above articles, or in any articles found in research, was there a direct correlation between the two methods. The Gilberts study did not state to what degree the lists were studied and the testing was given only once.

The other studies gave a definite need for more work in this field. The questions that were asked by Townsend are significant. At this time Townsend could not decide whether vocabulary improvement would improve spelling or spelling improvement would improve vocabulary.

All of the research done for this thesis would lead

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[5] Agatha Townsend, "An Investigation of Certain Relationships of Spelling with Reading and Academic Aptitude," Journal of Educational Research, Vol. 40, p. 465, Feb., 1947.

one to believe that this field of spelling needs much more attention. It is hoped that this piece of work is a step in that direction.

CHAPTER IV

MATERIALS AND GROUP USED IN EXPERIMENTS

The experiments for this work were done with eleven boys and seventeen girls ranging in age from eleven to fifteen, the average chronological age being 11 years 8 months when the experiments began. They are all sixth grade students who were in the experiments from the beginning and stayed until they were completed.

Thorndike and Lorge's, The Teachers Word Book of 30,000 Words, was used for the selection of words. Four hundred seventh grade words were chosen from this book to be used in the experiment. Appendix A give the 400 words and the frequency of misspelling at the original presentation to the students.

After the above 400 words were called, the 120 most frequently misspelled were chosen for further use in this work. Table II gives these words in the different lists and the number of students spelling them incorrectly. List A shows that acquire was spelled incorrectly by all twenty-eight pupils. In this same list there are six other words which all twenty-eight pupils failed to spell correctly. In List B identical was spelled incorrectly by twenty-five

TABLE II

LISTS OF THE MOST FREQUENTLY MISSPELLED WORDS CHOSEN FOR THE EXPERIMENT AND THE NUMBER OF STUDENTS MISSPELLING THEM

Number Of Pupils Mis-spelling Word	LIST A	LIST B	LIST C	LIST D	LIST E	LIST F
28	acquire	adequate	agitation	academy	accommodate	acknowledge
28	illuminate	identify	havoc	barbarous	debtor	lyric
28	illusion	negotiate	occasionally	candidate	Jerusalem	prohibition
28	maintenance	spontaneous	stimulus	foliage	luxury	prominent
28	reign	thorough	sympathetic	opportunity	parallel	tremendous
28	vaguely	velocity	variation	tyranny	triumphant	tribunal
28	various	yeoman	zealous	--	--	--
27	--	--	--	absurd	abundant	actually
27	evolution	authority	attentive	artificial	agriculture	agony
27	inevitable	embarrass	ignorant	individual	industrial	capitalist
27	magician	mansion	laboratory	journal	ridiculous	infantry
27	valiant	stupendous	opposition	participate	symbol	sentiment
27	vengeance	unnecessary	typical	twentieth	tutor	tariff
27	vividly	veteran	wondrous	zoological	zinc	thwart
26	acceptance	absolute	discretion	carbonic	bough	beggar
26	assistance	surgeon	provoke	pursuit	syllable	bosom
26	refrigerator	unfortunate	substitute	subsequent	threshold	riot
26	resemblance	--	--	--	--	--
25	recommendation	identical	irritate	career	calamity	capable
25	sufficiently	jurisdiction	occurrence	offensive	rhythm	steadily
25	--	manifold	terrace	--	tolerate	wharf
24	testify	idleness	semblance	sacrifice	--	--

pupils. There are two other words which twenty-five pupils misspelled.

The educational philosophy of today leans towards a high correlation between reading and spelling abilities.[1] Another way of thinking would have the mental growth and reading ability of an individual develop together. With this in mind, it was thought that a test in reading skills and one in mental maturity would be of help, not that it would affect the outcome of the basic findings of these experiments, but that it would help the reader to understand better the abilities of the students used in the experiment. It is to be remembered that the purpose of this paper is to compare the results of learning spelling by two different methods, and the pupils used vary greatly in their abilities.

The Iowa Silent Reading Test for the sixth grade level was used in trying to evaluate the reading ability of the pupils. This testing was done during the sixth month of the school year. Table III gives the results of this test. The average mental age is 11 years 5 months as compared with an average chronological age of 12 years 2 months at the time

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[1] Kathryne Harriette, "An Analysis of Reading Abilities, Journal of Educational Research, Vol. 38, p. 430, Feb., 1945.

TABLE III

THE CHRONOLOGICAL AGE, MENTAL AGE AND GRADE EQUIVALENT OF THE PUPILS USED IN THIS EXPERIMENT AS DETERMINED BY THE IOWA SILENT READING TEST

Subject	C.A.	M.A.	G.E.
1	12-2	8-4	3-7
2	13-0	10-4	5-3
3	11-9	12-1	6-9
4	14-11	11-7	6-4
5	14-8	4-5	9-4
6	14-6	12-8	7-5
7	14-9	9-7	4-7
8	12-0	11-1	6-0
9	11-7	12-5	7-2
10	12-2	12-5	7-2
11	13-1	9-1	4-3
12	11-7	13-6	8-2
13	11-11	10-11	5-8
14	12-1	12-1	6-9
15	12-2	10-8	5-6
16	11-11	8-0	3-4
17	12-10	11-7	6-4
18	13-4	11-7	6-4
19	11-8	13-9	7-7
20	11-11	13-9	7-7
21	11-11	11-2	6-1
22	14-10	10-7	5-5
23	11-11	14-0	8-5
24	11-7	11-9	8-5
25	12-11	10-8	5-6
26	12-2	16-0	9-2
27	11-7	13-6	8-2
28	12-0	10-10	5-7
Average	12-2	11-5	

the test was given. The chronological age is the actual age of the pupil in years and months whereas the mental age is the level of intelligence at which the student is doing work according to the test given. The grade equivalent shows the grade level of the quality of work which the pupil is doing.

The table should be interpreted as follows: the chronological age of pupil 9 is 11 years 7 months and his mental age is 12 years 5 months. The quality of work which he is doing is equivalent of the seventh grade, second month.

The California Test of Mental Maturity Elementary '50,S Form, was used to measure the learning ability of the students. Table IV gives the results of this test. This testing was done during the fifth month of the school year. The average mental age is 11 years 5 months as compared with an average chronological age of 12 years 1 month at the time the test was given.

It is significant to note here the Mental age. On the Iowa Silent Reading Test the average mental age was 11 years 5 months also. This would tend to substantiate the validity of the tests used.

On the California Test of Mental Maturity '50,S Form the Total Mental Factors include all of the sub tests. These

TABLE IV

THE MENTAL AGE, THE I.Q. AND THE INTELLIGENCE GRADE PLACEMENT OF THE TOTAL MENTAL FACTORS, THE LANGUAGE FACTORS AND THE NON-LANGUAGE FACTORS OF THE SUBJECTS TAKING THE CALIFORNIA TEST OF MENTAL MATURITY ELEMENTARY - '50 S - FORM

		Total Mental			Language			Non-Language		
Subject	C.A.	M.A.	I.Q.	I.G.P.	M.A.	I.Q.	I.G.P.	M.A.	I.G.	I.G.P.
1	12-1	11-1	91	5.8	10-9	89	5.5	11-5	94	6.1
2	12-11	11-3	87	5.9	11-6	89	6.2	10-7	82	5.3
3	11-8	12-3	105	6.9	11-9	101	6.4	13.5	115	8.1
4	14-10	12-2	82	6.8	12-7	84	7.2	11-3	70	5.9
5	14-7	10-9	73	5.5	8-8	60	3.4	11-9	81	6.4
6	14-5	13-4	89	8.0	13-4	92	8.0	13-5	93	8.1
7	14-8	11-5	78	6.1	11-11	81	6.6	10-7	72	5.3
8	11-11	12-3	103	6.9	12-3	103	6.9	12-0	100	6.7
9	11-6	12-11	112	7.6	12-7	109	7.2	13-9	119	8.4
10	12-1	12-9	105	7.4	12-7	104	7.2	13-0	107	7.7
11	13-0	11-6	88	6.2	11-4	87	6.0	11-9	90	6.4
12	11-6	13-11	121	8.6	14-7	127	9.1	17-5	151	13.3
13	11-10	12-11	109	7.6	13-2	111	7.8	12-4	104	7.0
14	12-0	9-11	83	4.6	10-7	88	5.3	8-11	74	3.7
15	12-1	11-5	94	6.1	11-5	94	6.1	11-3	93	5.9
16	11-10	9-5	78	4.2	9-3	77	4.0	9-10	81	4.6
17	12-9	10-6	82	5.2	13-8	107	8.3	6-0	47	1.0
18	13-3	12-3	93	6.9	11-11	90	6.6	13-0	98	7.7
19	11-7	13-6	115	8.2	12-11	111	7.6	15-2	131	9.6
20	11-10	10-7	89	5.3	10-7	89	5.3	10-7	89	5.3
21	11-10	12-0	101	6.7	12-11	109	7.6	10-7	89	5.3
22	14-9	11-8	79	6.3	11-5	77	6.1	12-0	81	6.7
23	11-10	11-7	97	6.2	12-7	106	7.2	9-10	83	4.6
24	11-6	9-7	83	4.3	8-11	78	3.7	10-7	92	5.3
25	12-10	10-11	85	5.6	12-0	93	6.7	11-3	88	5.9
26	12-1	12-8	104	7.3	12-2	100	6.8	13-9	114	8.4
27	11-6	12-10	111	7-5	12-9	111	7-4	13-0	113	7.7
28	11-11	11-8	98	6.3	11-5	96	6.1	12-0	100	6.7

sub tests are included under two large sub topics, the Language Factors and the Non-Language Factors. The sub tests included in the Language Factors are; Inference, Numerical Quantity and Total Verbal Concepts. Those sub tests included in the Non-Language Factors are; Sensing Right and Left, Manipulation of Areas, Similarities and Number Series.

CHAPTER V

PROCEDURE AND RESULTS

When experiments for this work were started, the writer of this paper felt that the results would be just the opposite from what they turned out to be. The view point concerning the superiority of the Logical over the Rote Memory Method of learning spelling, as was stated earlier, is held by many authorities and many people including school teachers. The results of this work, though on a small scale, show that there is no great difference in the retention of spelling when taught by the Meaningful or Experience Method and when taught by the Rote Memory Method.

In completing this work there were several observations made by the experimenter that would help to explain the results of the experiment.

The first and probably most important is the fact that in certain words, even when taught by the Meaningful Method, the placement of letters is memorized. Maybe here the Phonetic Method of spelling may be of help, but it is the opinion of this writer that the difference in individuals will always be a factor which will make spelling difficult for some individuals just as Mathematics or English often does. For example, one of the subjects seemed to be deaf to

phonetic spelling. During the experimenting and through the school year this problem was treated with what seemed to be no improvement. On this particular case, the elementary supervisor was asked to advise.

Another observation proved rather interesting also. It seemed that many of the students, including some of the best spellers, were able to recognize, use and pronounce many of the words, yet were unable to spell them correctly.

Even though the results of this work show a high correlation between the two methods of spelling, it was felt that the Meaningful way of teaching spelling helped to improve reading skills.

One observation which was rather inveresting was the fact that the Logical or Experience Method created more interest and initiative than the Rote Method. For example, some of the students would ask after the various testing periods of the Logical List such questions as,

> "I know the meaning of such and such word and I wonder if this is the correct way of spelling the word?"

The question was not answered but pupils were reminded of their dictionaries.

The most significant conclusion of this piece of work

is: There is no appreciable difference in the Logical or Meaningful Method and the Rote Method of learning spelling.

The formula $P=1-6xD^2 \div N(N^2-1)$ was used in finding the correlation of the two methods. This formula is used when rank difference is found. The number of words spelled correctly at each testing period was totaled for individual students. This is, the number of words spelled correctly in all of the six lists was totaled at the sixth week retesting period and at each of the succeeding retesting periods. The number of words spelled correctly in the three Rote Lists and the three Logical Lists were totaled separately. It is to be remembered that Lists C and D were given ten weeks recall instead of the usual twelve weeks because of the Thanksgiving Holidays. Therefore, C and D were correlated at ten weeks rather than twelve weeks as Lists A, B, E and F were.

After the correctly spelled words were tabulated the totals were ranked for both the Logical and the Rote Methods beginning with the highest score. The individual difference of ranking in the two methods was figured and then squared. Thus; if on the Rote Method one ranked eighth and on the Meaningful Method one ranked fifth, the difference would be three. This squared would be nine. The ranking differences squared for all of the subjects were totaled and inserted in

the formula for D^2. The number of students used was twenty-eight so in place of N twenty-eight was placed. Table V gives the individual totals and ranking of the two methods of each testing period. All of the totals with the exception of the tenth and twelfth weeks, are based on a possible score of sixty.

For example pupil 1 had a score of 18 on the Rote List for the sixth week. This was his score for Rote Lists A, C and E collectively at the end of their respective six week recalls. Each list contained twenty words so the possible score would be sixty.

The tenth week total is based upon a possible score of twenty. As was explained earlier Lists C and D were given the tenth week rather than the twelfth week recalls because of the Thanksgiving Holidays. The Rote score of pupil 2 for the tenth week was 4. This score for the tenth week was higher on a percentage basis than the Rote score for the sixth week. His tenth week score was 20% (4 out of 20 words spelled correctly), but his sixth week score was only 15%, (9 out of 60 words spelled correctly). Lists A,B,E and F were given the twelfth week recall. The total possible score for each of these was forty. The total possible score for the sixteenth and thirtieth week on each of the tests was

TABLE V

INDIVIDUAL TOTAL OF WORDS CORRECTLY SPELLED AND RANKING OF STUDENTS ACCORDING TO THE TOTAL WORDS SPELLED CORRECTLY AT EACH TESTING PERIOD

	Sixth Week				Tenth Week				Twelfth Week				Sixteenth Week				Thirtieth Week			
	Totals		Ranking		Totals		Ranking		Totals		Ranking		Totals		Ranking		Totals		Ranking	
Subj.	Rote	Mean.	Rote	Mean.	Rote	Mean.	Rote	Mean.	Rote	Mean.	Rote	Mean.	Rote	Mean.	Rote	Mean.	Rote	Mean.	Rote	Mean.
1	9	12	20	19	24	25	17.5	17.5	9	12	20	19	24	25	17.5	17.5	17	21	20	19
2	2	11	27.5	20	11	8	23	23	2	11	27.5	20	11	8	23	23	12	10	22	22
3	4	5	25	24.5	5	6	26.5	24.5	4	5	25	24.5	5	6	26.5	24.5	11	6	23	24
4	25	23	9	12	32	35	12.5	13	25	23	9	12	32	35	12.5	13	29	26	12	17
5	8	5	22	24.5	19	5	21	27	8	5	22	24.5	19	5	21	27	9	4	24	26
6	26	21	7.5	14	35	29	10.5	16	26	21	7.5	14	35	29	10.5	16	30	35	11	10
7	14	13	17	18	22	25	19	17.5	14	13	17	18	22	25	19	17.5	24	23	16.5	18
8	23	17	11.5	16	31	30	14.5	15	23	17	11.5	16	31	30	14.5	15	32	33	10	11.5
9	23	26	11.5	9	38	40	9	9.5	23	26	11.5	9	38	40	9	9.5	41	38	5.5	8.5
10	34	36	2	1.5	52	52	1.5	2	34	36	2	1.5	52	52	1.5	2	52	54	1	1
11	31	27	4	7.5	49	47	3.5	4	31	27	4	7.5	49	47	3.5	4	45	45	4	5.5
12	26	27	7.5	7.5	42	37	7	11.5	26	27	7.5	7.5	42	37	7	11.5	34	38	9	8.5
13	21	24	14	11	31	34	14.5	14	21	24	14	11	31	34	14.5	14	26	32	15	13
14	9	10	20	21.5	13	12	22	21	9	10	20	21.5	13	12	22	21	16	15	21	21
15	23	24	11.5	15	35	42	10.5	7	23	24	11.5	15	35	42	10.5	7	37	30	8	7
16	7	9	23	23	9	10	24	22	7	9	23	23	9	10	24	22	8	7	25	23
17	28	36	6	1.5	43	53	6	1	28	36	6	1.5	43	53	6	1	47	48	3	35
18	9	10	20	21.5	24	19	17.5	20	9	10	20	21.5	24	19	17.5	20	21	20	18	20
19	29	29	5	6	47	43	5	6	29	29	5	6	47	43	5	6	39	45	7	5.5
20	12	16	18	17	20	24	20	19	12	16	18	17	20	24	20	19	18	29	19	15
21	36	34	1	3	52	49	1.5	3	36	34	1	3	52	49	1.5	3	50	49	2	2
22	23	25	11.5	10	41	37	8	11.5	23	25	11.5	10	41	37	8	11.5	28	29	13.5	15
23	17	32	16	4	32	41	12.3	8	17	32	16	4	32	41	12.3	8	24	33	16.5	11.5
24	2	2	27.5	27.5	1	6	28	24.5	2	2	27.5	27.5	1	6	28	24.5	2	1	27.5	28
25	5	2	24	27.5	5	5	26.5	27	5	2	24	27.5	5	5	26.5	27	4	5	26	25
26	33	30	3	5	49	45	3.5	5	33	30	3	5	49	45	3.5	5	41	48	5.5	3.5
27	18	22	15	13	30	40	16	9.5	18	22	15	13	30	40	16	9.5	28	29	13.5	15
28	3	3	26	26	8	5	25	27	3	3	26	26	8	5	25	27	2	2	27.5	27

sixty.

Table V shows the individual scores from Single testing period.

Table VI gives the total number of words spelled correctly throughout the experiment. These scores are based upon a possible score of two hundred and forty. A break down into the respective lists would show the following: the sixth week test had a possible score of sixty, the tenth week test a possible score of twenty, the twelfth week test a possible score of forty and the sixteenth and thirtieth week tests a possible score of sixty each. These totaled would be two hundred and forty. The difference in individual scores for the two methods range from 1 to 44.

Also shown in Table VI is the ranking of the individual pupils according to scores. The difference in the ranking of the two methods range from 0 to 8. Pupil 25 ranked 26 among the twenty-eight students used on a Rote test but on the Logical she ranked last or twenty-eighth.

Seventeen of the twenty-eight students made a better score on the Logical tests while eleven made better scores on the Rote tests. Interpreted in percentage this would mean that 61% of the pupils learned better by the Meaningful Method as compared with 39% learning better by the Rote Method.

TABLE VI

TOTAL NUMBER OF WORDS SPELLED CORRECTLY BY INDIVIDUAL PUPILS THROUGHOUT THE EXPERIMENT AND PUPIL RANKING

	Total Score		Ranking	
Subject	Rote	Logical	Rote	Logical
1	75	95	20	18
2	38	40	23	22
3	32	27	25	24
4	126	129	13	14
5	61	26	21	25
6	138	132	11	12
7	93	88	17	19
8	129	125	12	16
9	152	164	7	7
10	206	207	1	1
11	189	184	3	5
12	149	150	8	9
13	119	131	15	13
14	54	62	22	21
15	142	146	10	10
16	37	39	24	23
17	180	204	4.5	2
18	84	81	19	20
19	176	180	6	6
20	91	110	18	17
21	202	195	2	3
22	148	137	9	11
23	107	151	16	8
24	9	19	28	26
25	25	16	26	28
26	180	185	4.5	4
27	121	126	14	15
28	20	17	27	27

Even though there is a noticeable difference here, the individual differences were not great enough to make an appreciable difference in the two methods. The correlation of the total scores of the two methods is .961.

The correlation of the two methods are found in Table VII. This high correlation shows that there is no great difference in these two methods. The higher the correlation, the less the difference, but the lower the correlation the greater the difference. Table VII gives the correlation of the Logical and Rote Methods of learning spelling at each of the testing periods during the experiment.

TABLE VII

CORRELATION RESULTS OF THE LOGICAL AND ROTE METHODS OF LEARNING SPELLING

Retesting Period	Correlation
Sixth Week	.921
Tenth Week	.848
Twelfth Week	.898
Sixteenth Week	.934
Thirtieth Week	.971

After seeing the correlation results it would be of interest to look more closely at the individual words. The possible score totaled for the entire testing group would be

560 at the testing period of any one list. Table VIII gives the number and the percentage of words, by list, misspelled at each testing period. For example on the sixteenth week recall for list B 327 words or 58% of the words were misspelled. Lists D and C have the tenth week recall because of the Thanksgiving Holidays.

It was interesting to note the frequency of the misspelling of the words from one testing period to the other did not fluctuate too greatly. Table IX shows the number of times the individual words at the initial calling, when the 400 words were called in order that the 120 most frequently misspelled ones could be used for the experiment, were misspelled. Also the table shows the number of times the word was misspelled by the entire testing group at each retesting period. In List A testify was misspelled 24 times at the original calling. On the sixth week recall it was misspelled 5 times and on the twelfth week recall it was misspelled 9 times. When List A was called at the sixteenth and thirtieth weeks testify was misspelled 4 and 9 times respectively. The reader is reminded when studying Table IX that there were twenty-eight pupils in the experiment.

As Table IX shows there is some fluctuation of the spelling of the individual words. To give a clearer insight in-

TABLE VIII

TOTAL NUMBER AND PERCENTAGE OF WORDS IN EACH LIST MISSPELLED AT EACH TESTING PERIOD

Week	A Words Miss.	A Per-cent	B Words Miss.	B Per-cent	C Words Miss.	C Per-cent	D Words Miss.	D Per-cent	E Words Miss.	E Per-cent	F Words Miss.	F Per-cent
6	330	59	310	55	287	51	318	57	298	53	248	44
10	-	-	-	-	276	49	287	51	-	-	-	-
12	331	59	333	59	-	-	-	-	303	54	266	48
16	317	57	327	58	281	50	282	50	280	50	264	47
30	344	61	320	57	297	53	299	52	310	55	271	48

TABLE IX

ORIGINAL MISSPELLING OF WORDS AND FREQUENCY OF BEING MISSPELLED AT EACH TESTING PERIOD

A	0*	Frequency of Words Misspelled 6th	12th	16th	30th	B	0	Frequency of Words Misspelled 6th	12th	16th	30th
testify	24	5	9	4	9	spontaneous	28	23	21	20	23
reign	28	12	9	11	11	surgeon	26	19	20	23	21
sufficiently	25	23	25	22	25	mansion	27	16	13	13	15
ácquire	28	14	16	19	14	stupendous	27	4	10	8	9
recommendation	25	27	24	20	23	authority	27	14	15	17	15
maintenance	28	24	25	23	25	identical	25	12	13	11	12
refrigerator	26	14	17	16	18	manifold	25	5	4	4	5
various	28	8	12	8	8	velocity	28	21	20	20	21
assistance	26	13	11	13	11	adequate	28	20	23	22	25
vaguely	28	24	22	18	21	absolute	26	11	12	13	8
acceptance	26	13	12	15	12	negotiate	28	23	23	23	24
illuminate	28	15	20	15	22	yeoman	28	13	16	12	16
resemblance	26	13	9	11	8	identify	28	17	15	18	17
illusion	28	18	15	12	18	thorough	28	17	19	23	22
magician	27	14	13	15	12	unnecessary	27	24	23	23	22
vengeance	27	25	26	25	26	embarrass	27	18	20	17	23
inevitable	27	19	20	22	23	veteran	27	14	14	16	15
valiant	27	21	19	21	22	unfortunate	26	18	17	17	17
vividly	27	10	10	10	16	jurisdiction	25	13	14	13	12
evolution	27	18	17	17	19	idleness	24	8	11	14	8

0 = original misspelling

C	0	Frequency of Words Misspelled 6th	10th	16th	30th	D	0	Frequency of Words Misspelled 6th	10th	16th	30th
semblance	24	15	9	9	9	twentieth	27	11	6	6	9
irritate	25	15	12	8	4	artificial	27	14	13	11	14
provoke	26	7	9	5	8	zoological	27	14	14	18	16
substitute	26	15	13	15	14	absurd	27	12	6	7	14
laboratory	27	17	20	17	20	individual	27	17	15	17	17
wondrous	27	15	14	13	17	foliage	28	17	18	20	26
attentive	27	14	8	11	11	journal	27	16	14	13	14
havoc	28	9	5	7	9	tyranny	28	19	18	21	24
zealous	28	9	9	12	16	participate	27	20	18	18	16
agitation	28	12	16	17	17	subsequent	26	19	21	17	18
stimulus	28	15	20	20	21	candidate	28	19	19	15	18
occasionally	28	16	13	20	21	carbonic	26	8	10	9	10
variation	28	12	12	14	17	opportunity	28	20	19	13	18
sympathetic	28	17	22	18	21	pursuit	26	9	13	14	19
typical	27	14	14	12	10	offensive	25	21	12	14	12
ignorant	27	15	12	13	13	career	25	20	14	17	17
opposition	27	9	15	12	13	restoration	25	15	10	9	8
discretion	26	18	20	24	23	barbarous	28	17	19	22	21
occurrence	25	22	23	24	26	academy	28	14	16	15	15
terrace	25	11	10	10	7	sacrifice	24	16	12	16	15

E	0	Frequency of Words Misspelled 6th	12th	16th	30th	F	0	Frequency of Words Misspelled 6th	12th	16th	30th
rhythm	25	22	22	19	25	steadily	25	7	9	8	10
tolerate	25	15	18	14	19	acknowledge	28	11	15	12	15
bough	26	14	9	11	13	suffice	25	7	10	11	11
ridiculous	27	21	23	24	25	lyric	28	7	7	7	6
industrial	27	14	14	13	13	capable	25	11	12	9	10
tutor	27	12	11	9	12	prohibition	28	13	13	13	10
abundant	27	12	13	10	8	wharf	25	13	19	19	18
triumphant	28	15	14	14	11	beggar	26	6	2	2	3
parallel	28	17	21	22	20	bosom	26	14	21	17	18
accommodate	28	16	20	20	20	riot	26	11	7	12	12
luxury	28	13	10	11	14	sentiment	27	13	18	14	14
Jerusalem	28	20	18	17	20	tariff	27	21	22	24	24
debtor	28	10	8	5	8	infantry	27	20	17	19	18
agriculture	27	14	15	14	13	capitalist	27	18	16	22	20
zinc	27	8	10	8	8	thwart	27	14	14	16	19
symbol	27	15	16	15	19	agony	27	6	8	11	11
syllable	26	17	20	16	18	actually	27	13	11	11	12
threshold	26	10	7	5	6	prominent	28	17	19	15	14
calamity	25	16	14	15	18	tribunal	28	12	8	10	14
rigid	25	17	20	18	20	tremendous	28	14	16	12	12

to the individual subject's fluctuation of spelling, Table X was compiled. It shows the number of words misspelled by the individual students at each testing period.

For example pupil 12 spelled correctly 9 of the twenty words in List A at the sixth week recall. At the twelfth week recall she spelled correctly only 6 of the words and on the sixteenth week recall she also spelled correctly 6 of the words. Eight words were spelled correctly by pupil 12 on the thirtieth week recall. All of these scores were based on a possible score of twenty because each list contained twenty words and the scores are given for individual lists. It is not to be forgotton that Lists A, C and E were learned by the Rote Method whereas Lists B, D and F were learned by the Logical Method.

TABLE X

NUMBER OF WORDS MISSPELLED AT EACH TESTING PERIOD BY INDIVIDUAL STUDENTS

Subj.	List A 6th	List A 12th	List A 16th	List A 30th	List B 6th	List B 12th	List B 16th	List B 30th	List C 6th	List C 10th	List C 16th	List C 30th
1	12	15	14	15	14	16	16	15	14	13	12	15
2	17	18	16	15	15	12	16	14	17	16	16	18
3	17	18	20	18	17	19	19	18	16	18	18	15
4	8	8	9	10	8	7	9	11	12	9	10	13
5	19	17	15	19	18	20	19	20	12	11	12	16
6	10	7	9	9	9	11	12	10	9	8	9	11
7	11	15	13	13	12	13	14	13	9	13	12	10
8	11	10	12	12	11	12	10	10	7	9	10	11
9	7	8	10	7	10	8	10	11	9	7	6	8
10	6	5	4	6	1	1	1	2	3	1	3	1
11	4	5	5	7	4	4	3	4	4	4	3	4
12	9	6	6	8	5	9	10	8	9	6	6	7
13	13	11	9	14	10	12	13	11	6	9	6	8
14	17	17	16	15	18	16	18	14	17	18	17	14
15	9	9	8	9	11	13	9	12	7	7	8	5
16	20	16	18	19	19	17	17	17	17	13	15	18
17	3	4	4	3	3	1	1	3	5	4	7	5
18	13	14	13	14	12	18	17	16	9	11	10	13
19	5	6	4	7	7	6	8	6	4	5	6	6
20	14	14	16	14	8	14	11	13	7	6	12	12
21	3	2	1	3	3	4	4	5	4	4	3	2
22	8	12	11	15	13	9	9	11	6	7	4	5
23	11	13	12	15	9	5	5	7	6	10	12	11
24	20	20	20	18	18	19	18	19	18	20	19	20
25	16	16	19	20	19	19	19	19	18	16	17	16
26	7	5	3	9	4	6	6	4	5	3	4	7
27	11	11	11	11	11	15	7	14	6	9	7	8
28	19	20	20	20	19	19	20	20	19	17	15	19

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this thesis was to find if the Logical, Meaningful or Experience Method of learning spelling was superior to the Rote Memory Method of learning spelling.

The high correlation score of .961 shows there is no significant difference in the two methods of learning spelling. However, one must be mindful that this correlation is based on a rather small number of cases and therefore can not be interpreted necessarily as representing the true correlation of a large number of cases.

Although one method of Rote learning was used in this study, its limitations are recognized. To care for individual differences in learning, this might have been offset by giving the children different media with which to work. Some suggested materials which might have been used are wet sand trays; wet newspapers and a stylus; newsprint and wet colored chalk or powdered paint; blunt paint brushes and newsprint. Use of these kinds of materials might have been advantageous to the tactile and kinesthetic learners even though learning through the Rote

Method.

Other factors omitted from this study, but recognized by the author are that all children have a dominant way of learning. More provision should have been made to care for individual differences in learning. If this study is tried again, more attention should be given to diagnosing the kind of learner the child is, namely; is he a visual learner? or does he learn more quickly with an auditory approach? or does he learn more easily with a manual dexterity approach?

More attention also, should be given to the understanding of the physical make up of individuals than shown in this study. Such factors as high frequency tone loss in hearing, lack of eye fusion, inability to maintain direction in seeing words, eye muscle difficulty and a great many other factors affect one's ability to read and spell.

This study has suggested to the author the need for more analysis of individual learning problems which affect the learning of spelling as the findings in this study points out.

There has been a very limited amount of work in this

particular field of spelling. This study tends to question the general belief that the Logical Method is superior to the Rote Method of learning spelling.

Several problems for further study presented themselves as work was being done on this paper. Some of these problems are listed below.

1. What relationship is there between the ability to learn spelling phonetically and the ability to hear and distinguish musical notes?

2. Which way of teaching spelling better fosters reading ability; spelling taught from a regular spelling text or spelling taught from content of material found in the text books such as mathematics or science?

3. Does spelling taught by the Logical or Meaningful Method develop better reading comprehension than spelling taught by the Rote Method?

4. What is the correlation of the memorization of placement of letters in the Logical or Meaningful Method of teaching spelling as compared with the Rote Method?

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APPENDIX A

APPENDIX A

THE FREQUENCY OF MISSPELLING OF WORDS FOR THEIR INITIAL PRESENTATION IN ORDER THAT THE 120 MOST FREQUENTLY MISSPELLED COULD BE CHOSEN FOR THE EXPERIMENT

abandon	14	bewitch	12	Detroit	13
ability	20	bicycle	16	development	23
aboard	12	billion	6	discharge	14
abrupt	21	biscuit	22	discretion	26
absence	22	bitterly	13	disobey	10
absolute	26	blanket	6	embarrass	27
absurd	27	bluff	8	embrace	23
abundant	27	bodily	23	emergency	22
academy	28	boiler	10	evolution	27
accent	24	boldly	15	exchange	7
acceptance	26	bomb	12	excitement	17
accident	23	bonnett	8	foliage	28
accommodate	28	booklet	2	fondly	14
acknowledge	28	boom	2	forefather	18
acquire	28	booth	5	harmony	16
actually	27	borrow	5	harvest	5
adequate	28	bosom	26	havoc	28
agitation	28	bough	26	hazard	22
agony	27	bounce	6	humanity	17
agreeable	21	calamity	25	humble	7
agriculture	27	camera	19	humility	19
air plane	4	candidate	28	hurrah	21
Alabama	13	capable	25	idea	12
artificial	27	capitalist	27	identical	25
ashamed	10	captive	11	identify	28
aspect	8	caravan	20	idleness	24
assistance	26	carbonic	26	ignorant	27
attentive	27	career	25	illuminate	28
authority	27	carelessly	18	illusion	28
bacteria	22	cargo	4	importance	18
banner	9	carriage	18	impossible	18
barbarous	28	carve	6	impression	18
barely	17	cunning	15	incorporate	23
barren	23	curiosity	24	incredible	23
bathe	7	current	12	indignation	24
bayonet	18	customer	19	individual	27
beech	12	debtor	28	induce	17
beggar	26	decidedly	22	indulge	18
beginning	16	decision	23	industrial	27
behalf	8	declaration	20	inevitable	27
believe	14	deposit	22	infantry	27
belongings	6	depression	19	infection	13

APPENDIX A (CON'T)

investigation	23	numerous	24	responsibility	22
invisible	22	obvious	23	restoration	25
irregular	24	occasionally	28	revelation	22
irritate	25	occurrence	25	reverence	23
jealous	23	offensive	25	rhythm	25
Jerusalem	28	operation	21	ridiculous	27
journal	27	opportunity	28	rigid	25
joyfully	13	opposition	27	riot	26
judge	6	oxygen	22	rivet	23
judgment	5	oyster	23	rotate	13
junior	18	panel	23	roughly	17
jurisdiction	25	paragraph	16	routine	20
keenly	15	parallel	28	rover	12
kitchen	7	participate	27	rugged	13
laboratory	27	primitive	23	rural	18
language	11	production	17	rustle	19
latitude	23	prohibition	28	sacrifice	24
laughter	11	prominent	28	salvation	14
leadership	5	prospect	17	sanitary	23
leaflet	16	protective	14	saucepan	17
likeness	4	provision	16	scald	15
listener	16	provoke	26	scamper	11
lobster	13	pumpkin	12	semblance	24
locality	17	punishment	17	sentiment	27
locomotive	16	purchase	20	spontaneous	28
luxury	28	purpose	20	sprang	10
lyric	28	pursuit	26	springtime	3
magazine	17	quarrel	21	springle	10
magician	27	quitely	10	spruce	12
magnetic	24	recommendation	25	squeeze	20
maintenance	28	reference	24	squirrel	19
manifold	25	refrigerator	26	stagger	17
mansion	27	reign	28	stammer	14
neglect	18	relationship	16	startle	22
negotiate	28	rendor	13	statesman	16
neighborhood	20	repentance	22	steadily	25
nephew	15	represent	19	steamer	9
nervous	18	reproach	17	steeple	18
noiselessly	15	reptile	12	sternly	19
nonsense	19	rescue	14	stimulus	28
notwithstanding	7	resemblance	26	struggle	18
novelty	17	respectively	23	stumble	9

APPENDIX A (CON'T)

stupendous	27	thoughtfully	18	variation	28
sturdy	17	thrash	14	various	28
sublime	9	threat	14	vastly	17
subsequent	26	threshold	26	vegetable	20
substance	22	thrive	12	velocity	28
substitute	26	thrust	20	velvet	9
suffice	25	thunderbolt	15	vengeance	27
sufficiently	25	thwart	27	vension	20
suitable	22	thyself	9	venture	16
suitor	24	tidings	16	verily	21
sullen	24	timid	18	verticle	24
sultan	21	tint	17	veteran	27
summary	21	tiresome	13	vibrate	21
superintendent	24	tissue	16	violently	22
supreme	22	tobacco	13	Virginia	14
surgeon	26	token	12	visible	22
surrender	22	tolerate	25	vital	20
surroundings	17	tremendous	28	vividly	27
survey	22	tribunal	28	vocabulary	23
suspect	13	trifle	23	vocano	21
suspense	23	triumphant	28	volley	21
swallow	7	trod	15	volume	24
swarm	11	troop	8	volunteer	20
sweetness	9	troublesome	22	voyage	16
swiftly	14	tutor	27	waken	7
swine	15	twentieth	27	wallet	12
swung	16	twig	8	weekly	9
syllable	26	twilight	11	wealthy	15
symbol	27	twitch	14	weary	14
sympathetic	28	typewriter	18	whale	8
system	22	typical	27	wharf	25
tablet	8	tyranny	28	whereas	4
talent	11	undertook	10	whereupon	6
tapestry	23	unhappy	2	wholesome	22
tariff	27	unfortunate	26	wholly	24
telegraph	16	unexpectedly	23	woolen	6
telescope	19	unversity	23	willful	12
tempting	17	unlucky	4	wilderness	16
terminate	21	unnecessary	27	winning	6
terrace	25	unpleasant	19	wizard	18
testify	24	valiant	27	wolves	18
testimony	24	vaguely	28	wondrous	27
thither	17	vagabond	21	wooded	14
thorn	15	vacation	15	wouldst	24
thorough	28	vacancy	20	wordly	13

APPENDIX A (CON'T)

woolen	8
whirlwind	16
wretch	19
wring	12
wrist	14
wrought	23
yeoman	28
yonder	11
yore	18
youngster	14
zealous	28
zinc	27
zoological	27

VITA

George McCauley Barrett, son of David S. Barrett and Daisy W. Britt, was born March 31, 1925, at Waverly, Virginia. He attended the Homeville Elementary School, Homeville, Virginia, through the fifth grade. After this he entered Waverly High School, Waverly, Virginia, from which he graduated May 28, 1943.

He served with the United States Marine Corps from December, 1943, to November, 1947. While still on terminal leave he entered Randolph-Macon College, Ashland, Virginia, where he received his Bachelor of Arts degree in June, 1950. He accepted a position as teacher of the sixth grade in the Henry Clay Elementary School, Ashland, Virginia, where he has been employed since. During the summer of 1951 he entered the University of Richmond Graduate School to begin work on the Master's Degree.

On October 18, 1952, he married Miss Janice Ray Spicer, of Ashland, Virginia.