

Summer 1947

Spelling Rules As An Effective Factor In Seventh And Eighth Grade Spelling Achievement

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SPELLING RULES AS AN EFFECTIVE FACTOR IN SEVENTH AND EIGHTH GRADE
SPELLING ACHIEVEMENT

being

A thesis presented to the Graduate Faculty
of the Fort Hays Kansas State College in
partial fulfillment of the requirements for
the Degree of Master of Science

by

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6356
39

ACKNOWLEDGMENTS

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TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
1. Statement of the Problem	1
2. Review of Current Spelling Studies	2
II. METHOD AND SCOPE	10
1. Constructing the Spelling Test	10
2. Testing Procedure	14
3. Limitations of the Study	16
III. THE ANALYSIS OF THE TEST RESULTS	17
1. Age of Pupils Participating	17
2. General Word Checking Procedure	18
3. Quartile Placement	20
4. Analysis of the Spellings for Rule One	23
5. Analysis of the Spellings for Rule Two	26
6. Analysis of the Spellings for Rule Three	29
7. Analysis of the Spellings for Rule Four	38
8. Analysis of the Spellings for Rule Five	44
9. Analysis of the Spellings for Rule Six	47
10. Analysis of the Spellings for Rule Seven	50
11. Analysis of the Spellings for Three Difficult Words .	57
12. General Summary of the Spelling Rules Difficulties .	64
IV. SUPPLEMENTARY FINDINGS	67
1. Word Difficulty	67

CHAPTER	PAGE
2. Word Difficulty - General Average	67
3. Comparison of Seventh and Eighth Grade Achievement .	70
4. Comparison of Achievement: Boy and Girl	72
V. CONCLUSIONS AND RECOMMENDATIONS	73
1. Conclusions	73
2. Recommendations	75
APPENDIX	77
BIBLIOGRAPHY	84

LIST OF TABLES

TABLE	PAGE
I. Chronological Age Distribution	17
II. Quartile Placement	22
III. Checking Procedure for Rule One - Q3, Graded Schools . .	23
IV. Spellings for Rule One - Graded Schools	24
V. Spellings for Rule One - Rural Schools	25
VI. Checking Procedure for Rule Two - Q3, Graded Schools . .	26
VII. Spellings for Rule Two - Graded Schools	27
VIII. Spellings for Rule Two - Rural Schools	28
IX. Checking Procedure for Rule Three - Q3, Graded Schools .	29
X. Spellings for Rule Three - Graded Schools	32
XI. Spellings for Rule Three - Rural Schools	33
XII. Spellings for Rule Three - Graded Schools	34
XIII. Spellings for Rule Three - Rural Schools	35
XIV. Spellings for Rule Three - Graded Schools	36
XV. Spellings for Rule Three - Rural Schools	37
XVI. Checking Procedure for Rule Four - Q3, Graded Schools . .	38
XVII. Spellings for Rule Four - Graded Schools	40
XVIII. Spellings for Rule Four - Rural Schools	41
XIX. Spellings for Rule Four - Graded Schools	42
XX. Spellings for Rule Four - Rural Schools	43
XXI. Checking Procedure for Rule Five - Q3, Graded Schools . .	44
XXII. Spellings for Rule Five - Graded Schools	45

TABLE	PAGE
XXIII. Spellings for Rule Five - Rural Schools	46
XXIV. Checking Procedure for Rule Six - Q3, Graded Schools . .	47
XXV. Spellings for Rule Six - Graded Schools	48
XXVI. Spellings for Rule Six - Rural Schools	49
XXVII. Checking Procedure for Rule Seven - Q3, Graded Schools .	50
XXVIII. Spellings for Rule Seven - Graded Schools	53
XXIX. Spellings for Rule Seven - Rural Schools	54
XXX. Spellings for Rule Seven - Graded Schools	55
XXXI. Spellings for Rule Seven - Rural Schools	56
XXXII. Checking Procedure for the Three Difficult Words - Q3 Graded Schools	57
XXXIII. Spellings for the Three Difficult Words - Graded Schools	60
XXXIV. Spellings for the Three Difficult Words - Rural Schools .	61
XXXV. Spelling Rules Difficulties - General Summary	65
XXXVI. Word Difficulty - General	69
XXXVII. Word Difficulty - By Grades	71
XXXVIII. Average Correct Spellings - Group Percentage	72

CHAPTER I

INTRODUCTION

1. Statement of the Problem

There are several factors which influence one's ability to spell accurately. One factor, though not the most important, is one's

SPELLING RULES AS AN EFFECTIVE FACTOR IN SEVENTH AND EIGHTH GRADE

SPELLING ACHIEVEMENT

Almost without exception, the student's ability to spell his vocabulary accurately is evident in his school work - friendly notes or business letters. It may be shown by his wish to enter his compositions with words of various parts of speech such as nouns, adverbs, gerunds, participles and other parts of speech used in English grammar. That such action is taken, one usually needs to add a suffix to the base word to gain the desired effect. Therefore, the value of one's ability to apply the appropriate spelling rule.

The writer has served as an instructor in several graded elementary and secondary schools of the State of Texas. In teaching written compositions - elementary or secondary level - the writer found it necessary to use a red pencil to check misspelled words. Often the base word was spelled accurately and the error had been made in the addition of a suffix to the base word. There are many such words that require a suffix to make them words of descriptive value. Consequently, a pupil may be baffled and puzzled as to the proper how to retain or drop the silent 'e', when to double the final consonant or when to use the 'i' before 'e' in a base word when such word requires the appropriate use of the rule.

CHAPTER I

INTRODUCTION

1. Statement of the Problem

There are several factors which influence one's ability to spell accurately. One factor, though not the most important, is one's understanding and proper application of the spelling rules.

Almost without exception every layman recognizes the importance of his ability to spell his vocabulary accurately in written communications - friendly notes or business letters. In many instances he may wish to color his communications with words of action such as adjectives, adverbs, gerunds, participles and other parts of speech used in English grammar. When such action is taken, one usually needs to add a suffix to the base word to gain the desired effect. Herein lies the value of one's ability to apply the appropriate spelling rule.

The writer has served as an instructor in rural, graded elementary and secondary schools of the State of Kansas. In checking written compositions - elementary or secondary level - the writer found it necessary to use a red pencil to check misspelled words. Often the base word was spelled accurately and the error had been made in the addition of a suffix to the base word. There are many base words that require a suffix to make them words of descriptive action. Consequently, a pupil may be baffled and puzzled as to the proper time to retain or drop the silent 'e', when to double the final consonant or when to use the 'i' before 'e' in a base word when such word requires the accurate use of the rule.

Therefore, the problem of this study is to investigate the spelling achievement of seventh and eighth grade pupils in both the graded elementary and rural schools of Western Kansas. The core of the study is based on seven basic spelling rules as listed in the State adopted textbooks. The Modern-Life Speller¹ by Ayer, Oberholtzer and Woody had been the State adopted spelling text for several years until a change was made in the Fall Term of 1946 to The Day - by - Day Speller² by Newlon and Hana. Due to the fact that the school year of 1946-47 was the first time that the newly adopted text was used in the State elementary schools, both texts were used in formulating a test for this study. Hence, this study was conducted on the hypothesis that the correct application of the spelling rules is an effective factor in seventh and eighth grade spelling achievement.

2. Review of Current Spelling Studies

For a long time educators assumed certain hypothesis to be true and did not question such by thorough investigation and experimentation. Educators had usually assumed that the results obtained are directly proportional to the amount of time expended. Beginning at the close of the nineteenth century, scientific investigations and experiments were for the first time conducted in the field of spelling. Dr. J. M.

1. Fred C. Ayer, E. E. Oberholtzer and Clifford Woody, Modern - Life Speller, Book II (Topeka, The State of Kansas, 1938.)

2. Jesse H. Newlon, Paul R. Hana, and Jean Shuman Hana, The Day - by - Day Speller (Boston, Houghton Mifflin Company, [1942].)

Rice is given credit as the pioneer in this respect.³ The core of Dr. Rice's study dealt with the time devoted to the teaching of spelling. Contrary to the usual assumption, in the results obtained from 100,000 cases, Dr. Rice found little or no relation between the results obtained and the time expended. Equally good spelling achievement was found in schools where a period of ten or fifteen minutes was devoted to the subject as in those where a period three or four times as long was allowed. After a slow process of reform and adjustment hardly any school today allots more than fifteen minutes a day to spelling in the school program.⁴

Thus, there was set in motion a movement for further scientific investigation and experimentation in the field of spelling. Many prominent educators became associated with the movement: Leonard P. Ayres,⁵ Edward L. Thorndike,⁶ Ernest Horn and Ernest J. Ashbaugh,⁷ Arthur I. Gates,⁸

3. C. C. Ross, Measurement in Today's Schools (New York, Prentice-Hall, Inc., 1944), p. 22.

4. Ibid., p. 23.

5. Leonard P. Ayres, A Measuring Scale for Ability in Spelling (New York City, Division of Education, Russell Sage Foundation, [1915]), 58 pp.

6. Edward L. Thorndike, The Teacher's Word Book, Second Edition (New York City, Teachers College, Columbia University, 1921), 134 pp.

7. Ernest Horn and Ernest J. Ashbaugh, Lippincott's Horn-Ashbaugh Speller, Grades I - VIII (Philadelphia, J. B. Lippincott Company, 1920), 105 pp.

8. Arthur I. Gates, The Psychology of Reading and Spelling With Special Reference to Disability (New York City, Teachers College, Columbia University, 1922), 108 pp.

and others.⁹ One could consume considerable space in the reviewing of the previous investigations carried on in the field of spelling. Obviously certain valuable points could be gained by doing such; however, the writer will arbitrarily limit the discussion of important related studies to those conducted during the fourth decade of the twentieth century.

Certain important studies will be cited to show that spelling achievement is dependent on several factors: the pupil characteristics and needs, the teacher and teaching, and remedial instruction.

Louis Ada Wilson¹⁰ concludes that children's spelling achievement is an individual problem and a continual vocabulary development. He further asserts that high intelligence quotients do not always indicate high success in spelling: "The evidence is that spelling is a learned skill and is not specifically related to the intelligence quotient".¹¹

Dorris May Lee and J. Murray Lee¹² maintain that studies of children's and adults' writing have shown that about 3,000 words comprise over 97 per cent of the running words. Thus, the practical impli-

9. For a summary of early spelling investigations, see Carlyle P. Wetlaufer, "An Investigation of Spelling Difficulties in the Elementary Grades," Thesis (Fort Hays, Kansas State College, 1940), 84 pp.

10. Louis Ada Wilson, "Children's Spelling Needs and The Implications for Classroom Procedure," The Elementary School Journal, XLVII, (October, 1946), p. 102.

11. Ibid., p. 100.

12. Dorris May Lee and J. Murray Lee, "Spelling Needs a Teacher", The Elementary English Review XXIII, (May, 1946), p. 203.

cations of these facts are that teachers should use spelling lists which have been carefully devised so that they include as nearly as possible those words and only those words which will be used consistently by the child in his writing. One of Louis A. Wilson's conclusions is that no one textbook in spelling can adequately fulfil the spelling requisites of written composition.¹³ Hence, Lee and Lee maintain that the teacher's responsibility is to develop in each child habits of learning to spell which are effective for that child.¹⁴ They advocate the following four steps for the pupil's development of the effective learning habits:

First, she [the teacher] must see that the child is required to learn those words and only those words which are or will be important in his writing.

Second, she must make adequate presentation of these words.

Third, she must instill effective habits and attitudes for the correct writing of these words.

And fourth, she must work individually and in small groups with the poorer spellers to find the methods effective for them and to give them the help that is necessary.¹⁵

Hence, the authors place a great deal of responsibility on the shoulders of the teacher in meeting the individual spelling problems of each pupil.

13. Louis A. Wilson, op. cit., p. 100.

14. Dorris May Lee and J. Murray Lee, op. cit., p. 203.

15. loc. cit.

The method used in teaching spelling is an important factor in spelling achievement. Louis A. Wilson discredits the incidental method. His study reveals that pupils with high mental abilities who were taught by the incidental method made low spelling scores on standardized spelling tests. "Children should be taught how to learn to spell a word".¹⁶

Much research (simple as well as complex) has been done in an effort to increase the spelling achievement of pupils. Lee and Lee state that reading and spelling difficulties often go hand in hand.¹⁷ D. H. Russell¹⁸ concluded that spelling ability is related to word recognition and paragraph reading. He also found through the study of control groups that early instruction in phonics produces a favorable influence on achievement in spelling, reading, and certain visual and auditory abilities.

Emmett A. Betts¹⁹ gave a general picture to show that reading and spelling are correlative growths. He cited some experimental evidence to show that spelling and reading abilities depend in common upon intelligence, auditory perception, visual preception and meaning vocabulary.

Gilbert and Gilbert²⁰ conducted an experiment whereby they

16. Ibid., p. 101.

17. Dorris May Lee and J. Murray Lee, op. cit., p. 206.

18. D. H. Russell, "Diagnostic Study of Spelling Readiness", Journal of Educational Research, XXXVII, (December, 1943), pp. 276-83.

19. Emmett A. Betts, "Inter-relationship of Reading and Spelling", Elementary English Review XXII, (January, 1945), pp. 12-23.

20. Luther C. Gilbert and Doris W. Gilbert, "Improvement of Spelling Through Reading", Journal of Educational Research, XXXVII, (February, 1944), pp. 458-63.

photographed eye movements to determine if spelling could be improved by this means of diagnostic reading. They concluded that there are great individual differences in spelling ability. They found that the gains made in this ability may arise incidental to reading and, therefore, they stress an accurate speed of perception while reading.

Not much attention and research has been devoted to the improvement of spelling through the application of the spelling rules. Ellenjarde Nolde²¹ suggests the grouping of words by distinguishing characteristics. Following is a portion of his groupings:

1. The "i" before "e" rule and its exceptions.
2. Words that double the final consonant before adding "ed" or "ing".
3. Words that drop the final "e" before "ing".
4. Words that double the first consonant.

.....

Nolde did not mention the use of spelling rules as such but instead advocated a grouping of 'like words' for special study. He maintains that for a good speller the groupings seem highly artificial. However, for the child who has poor visual imagery some means should be employed to note similarities and verbalizations in order to learn even the relatively few words he most frequently uses. He concludes that each child must eventually work out devices for himself but does not emphasize the mastery of spelling rules to accomplish such.

21. Ellenjarde Nolde, "Spelling - Knowledge and Skill", The Elementary English Review, XXIII, (April, 1946), pp. 170-74.

In discussing the problem of what to include in the presentation of words to the pupils, Lee and Lee advocate the following:²²

1. The child should know the meaning of the base word. . . .
2. He should understand the meaning of their derivatives. . . .
3. There should be a discussion of the word itself. . . .

The most helpful single procedure is dividing words into syllables.

The knowing of the syllables of a word and where to place the accent is an important factor in the proper application of certain spelling rules. Lee and Lee see the importance of the child's achievement in knowing the base word yet they do not make mention of the learning and application of the spelling rules.

Lee and Lee continue their discussion of word achievement for the upper grades:

In the upper grades they add prefixes and suffixes. They develop the spelling of a variety of forms of each word. What is more important, they develop an understanding of the meaning of many words and acquire an independence in both spelling and understanding which perhaps could be acquired in no other way. For instance, pupils should compare meaning and spelling of educate and education, know and knowledge, value and valuation and valuable, probable and probably, part and partially and partial, success and succeed, particularly and particular, expensive and expense . . . discussion of the derivatives develops understanding of how words are made up and lays a foundation for independence. . . .²³

From the word example cited in the above paragraph, one can readily detect that certain spelling rules may be employed in order to consistently obtain the correct spelling of the new word when the suffix is affixed.

22. Dorris May Lee and Murray J. Lee, op. cit., p. 203.

23. Ibid., p. 204.

The State adopted spelling textbooks allot space to the statement of certain spelling rules which may be employed by the pupils in learning to spell words. The writer is interested to know to what extent the use of the elementary spelling rules is an effective factor in advanced elementary spelling achievement. To the writer's knowledge, hardly any previous studies have been conducted exclusively in this phase of spelling achievement. Certain studies indirectly supplement this study; however, the writer is attempting to devote special attention to the improvement of spelling through the use of the elementary spelling rules as listed in the State elementary textbooks.

CHAPTER II

METHOD AND SCOPE

Since this study is an investigation of the effectiveness of spelling rules, the writer chose the method of making a survey of spelling achievement on the seventh and eighth grade level of a portion of the graded elementary and rural schools in Kansas. A spelling test was constructed and administered to the pupils concerned in order to gain the data for this study.

Constructing the Spelling Test

Special attention in formulating the test was given to certain principles of test construction. The following principles ^{were} ~~was~~ given primary consideration in this study: (1) The source (or sources) of the word selection, (2) the method of the word selection, (3) the difficulty of the words selected (including some very difficult words), (4) the placement of the words in the test, (5) constructing a sentence in which the word is used, and (6) the directions for administering the test.

In view of the fact that the spelling rules to be used in this study were selected from the State adopted spellers, the writer, therefore, made the word selection from the two Kansas Spellers: The Modern-Life Speller and The Day - by - Day Speller. After the temporary word selection was made, it was checked against Thorndike's list of words

in The Teacher's Word Book.¹ Hence, the words selected for the final word test are found in the Kansas textbooks as well as Thorndike's Teacher's Word Book.²

It must be noted that the writer chose words whereby each of the seven rules of spelling could be applied. The spelling rules used in this study are quoted from the Modern - Life Speller³ except Rule Three which appears only in The Day - by - Day Speller. The authors of the Modern - Life Speller make a statement of the rules at the end of Book Two, Grades Five to Eight, inclusive, whereas the authors of The Day -by - Day Speller scatter the rules among the appropriate spelling lessons in each of the books.⁴ Thus, one will find a repetition of the rule (or rules) from one grade level to the other.

Following is a list of the rules⁵ showing the lowest grade placement in which Newlon - Hana first present the respective rule:

RULE ONE: (Grade 3) The plural forms of nouns are usually made by adding 's' or 'es' to the singular form. (Pen, pens; inch, inches).

1. Edward L. Thorndike, The Teacher's Word Book, Second Edition (New York City, Teachers College, Columbia University, 1921), 134 pp.

2. Thorndike's Word Book, in several cases, lists only the base word but he makes note that the changed forms of the word are included in the compilation for the base word.

3. Ayer - Oberholtzer - Woody, op. cit., p. 201.

4. Newlon-Hana provide a separate book for each grade beginning with Grade Two.

5. The writer arbitrarily numbered the rules.

RULE TWO: (Grade 5) Nouns ending in 'y' preceded by a consonant form their plural by changing 'y' to 'i' and adding 'es'. (Lady, ladies).

RULE THREE: (Grade 4) 'i' before 'e' except after 'c' or when sounded like 'a' as in 'neighbor' or 'weigh'.

RULE FOUR: (Grade 6) When suffixes beginning with a vowel (such as 'ing' or 'ed') are added to one-syllable words or words accented on the last syllable and ending in a single consonant, the final consonant is doubled. (Run, running; occur, occurred).

RULE FIVE: (Grade 6) When suffixes beginning with a consonant are added to words ending in silent 'e' the 'e' is usually retained. (Sure, surely).

RULE SIX: (Grade 5) When suffixes beginning with a vowel are added to words ending in silent 'e', the 'e' is usually dropped. (Come, coming).

RULE SEVEN (Grade 7) When suffixes are added to words ending in 'y' preceded by a consonant, the 'y' is usually changed to 'i'. When the 'y' is preceded by a vowel, the 'y' is usually retained. (Tidy, tidiness; joy, joyful).

In making the word selection the writer arbitrarily set the following limits or bounds for the study:

First, Grades to be tested: The same word test was to be used for both the seventh and the eighth grades of the graded and rural schools.

Second, Grade placement of words: The words selected are included in the second-half of Grade Six to the second-half of Grade Eight of the State adopted spellers.

Third, Word difficulty: A range of word difficulty extends from five per cent misspellings of some words to sixty-two per cent on others. The percentage is quoted only for the eighth grade level.

Fourth, Frequency of word usage: Almost all of the words selected range from the first five hundred most commonly used words to the eleventh five hundred commonly used words.⁷ (The coverage represents approximately 5500 words).

Fifth, Number of words selected: A total of thirty-six words comprise the test.⁸ Three words were selected for each rule or section of the rule and three difficult non-rule words⁹ which are frequently used in spelling tests were selected. (Guiler found that the three words were misspelled over fifty per cent of the time.)

Thus, there are twelve separate groupings with three words each. The total number of pages covered in The Modern - Life Speller was divided by twelve in order to obtain a sample of words throughout the total area of page coverage. Hence, for each rule or division some of the words are selected from the sixth grade placement, the seventh grade placement and the eighth grade placement of the Kansas Spellers.

In placing the thirty-six words in the test, the writer did not place them in order of difficulty, but in cycles of twelve. Three distinct cycles were formed with just a bit of variation to break the consistent pattern formed by the words used in Rule Three. One must remember that one-fourth of the total test pertains to Rule Three.

It was planned to test 1,200 pupils. In order to keep to a minimum the number of omitted spellings or spellings of other words

7. Edward L. Thorndike, op. cit., 134 pp.

8. See Appendix, Exhibit E, p. 82.

9. W. S. Guiler, op. cit., pp. 295-300.

instead of the required word, the writer constructed a sentence for each word used in the test.¹⁰ The teachers therefore, were instructed to read the statement pertaining to the word after they had pronounced the word. The writer hoped that this procedure would help the pupils to understand the word they were asked to spell. It would also afford a uniform basis of word explanation for every child taking the test.

2. Testing Procedure

A plan to test pupils of the elementary graded schools and pupils of the one-teacher rural schools was formulated. An invitation¹¹ to cooperate in this spelling study was sent to principals of certain graded schools of Western Kansas and to county superintendents of public instruction of certain Western Kansas Counties. A scattering of towns and counties was purposely conducted. It was planned to have a sample of spellings of six hundred graded school pupils and the like number of rural school pupils. On the enclosed reply card¹² the principal or county superintendent stated the number of pupils that could be expected to participate in the study. Eleven graded schools responded with a temporary total of eight hundred pupil participants and eight county superintendents responded with a temporary total of

10. See Appendix, Exhibit E, p. 82.

11. See Appendix, Exhibit A, p. 78.

12. See Appendix, Exhibit B, p. 79.

seven hundred fifty rural school pupil participants. Sincere appreciation is extended to all participating and cooperating with this study. The following graded schools and county rural schools were selected and cooperated in this investigation:

Graded Schools

Ellis
Hill City
La Crosse
Ness City
Norton
Osborne
Phillipsburg
Plainville
Russell
Stockton
Wakeeney

County Rural Schools

Edwards
Ellis
Ness
Norton
Osborne
Rooks
Russell
Trego

The next step in conducting the study was to print and distribute the necessary spelling materials. Four hundred letters of instruction to the teacher,¹³ four hundred word lists,¹⁴ and one thousand six hundred test blanks were distributed into four hundred teacher packets and the packets were mailed to the school administrators. A letter of appreciation¹⁵ was also sent to the school administrator concerned.

Each teacher was asked to pronounce the word test to her pupils. She was informed that the writer would check the papers in accordance with the method employed to grade and analyze the spelling errors of each word. Explanation of this procedure will be made in Chapter III.

13. See Appendix, Exhibit D, p. 81.

14. See Appendix, Exhibit E, p. 82.

15. See Appendix, Exhibit F, p. 83.

3. Limitations of the Study

The writer is aware that this study has certain limitations and therefore, certain findings, to a degree, are inconclusive.

Perhaps the most serious limitation of the study is the subjective characteristic of the survey testing method in the testing procedure: individual teacher differences, individual pupil differences, etc. If the experimental method had been employed, the results of the study obviously would have been more conclusive. Some experimenters in spelling through the use of control groups carry on their experiments throughout a period of years in order to obtain valid results. Through the use of such artificial groups one could more specifically determine the value of the use of spelling rules in the mastery of spelling. An experimental study of control groups in the use of spelling rules would require at least a period of two or more years before one could obtain a valid correlation. Hence, the writer chose the survey testing method, with its limitations, to obtain a view of the spelling achievement existing in the State elementary schools - graded elementary and rural.

A second limitation of the study lies in the limited word selection for each rule which, to a degree, makes the results inconclusive. However, enough data has been gathered to show that there is an inconsistent use of the Rules of Spellings by the elementary pupils of the seventh and eighth grades. Further explanation of these findings will be made in Chapter III.

Other minor limitations exist but do not warrant the space for explanation.

CHAPTER III

THE ANALYSIS OF THE TEST RESULTS

1. Age of Pupils Participating

The first step in the checking of the test papers was to make the following four divisions for each type of school (graded and rural): seventh grade girl (7G), seventh grade boy (7B), eighth grade girl (8G) and eighth grade boy (8B).

Table I shows the number of pupils participating as well as the range of chronological ages for each grade and each group. No special

TABLE I. CHRONOLOGICAL AGE DISTRIBUTION

Age:	GRADED SCHOOLS					RURAL SCHOOLS					Gr Tot
	7G	7B	8G	8B	Total	7G	7B	8G	8B	Total	
11	6	1			7	10	5			15	22
12	113	100	9	8	230	69	79	10	6	164	394
13	45	55	124	93	317	26	23	59	74	182	499
14	1	14	48	55	118	2	7	25	30	64	182
15		4	8	7	19	1	5	2	7	15	34
16		1		3	4						4
TOTAL CASES	165	175	189	166	695	108	119	96	117	440	1135

attention was given to the fractional part of the current chronological year. This means that if a child has a chronological age of 12-6, he is tabulated as a twelve year old. The writer felt that the reader would be interested to know the approximate age of the pupils participating in this study. No attempt was made to establish the MA (Mental Age) or

IQ (Intelligence Quotient) of the tested pupils. This study does not include such phases of research in spelling achievement. However, Louis A. Wilson found that "high intelligence quotients do not always indicate high success in spelling."¹

2. General Word Checking Procedure

The second step in analyzing the test papers consisted of checking each test paper for misspelled words. As far as this phase of the study is concerned there were six distinct symbols chosen to be used in checking the spelling for each word. One of the following symbols was placed after each word on each test paper:

- (1) C - correct spelling.
- (2) R - rule. (Incorrect spelling of the word due to the incorrect application of the spelling rule).
- (3) NR - non-rule. (Incorrect spelling of the word but the rule was correctly applied).
- (4) B - both. (Incorrect spelling of the word due to both the incorrect application of the spelling rule and other factors of misspelling the word such as omitted letters, substituted letters, inverted letters, etc.).
- (5) O - omitted. (Indicates that the pupil never attempted to spell the word).
- (6) M - misunderstood. (The word was spelled correctly but was not the word pronounced from the spelling test).

A few examples of misspelled words appearing on the test papers are shown for each rule or series of spellings. The spellings for Q3 (upper quartile), Graded Schools, was arbitrarily chosen as samples for

1. Louis A. Wilson, op. cit., p. 102.

the checking procedure. These samples are shown in this Chapter for each word in the analysis of the spellings for each rule or series of words. For example, in Table VI, the word 'policies' was spelled correctly by eighty-four per cent of the pupils in Q3, Graded Schools. Eight per cent of the total spellings of the word in Q3 was misspelled due to the incorrect application of the rule, six per cent was incorrectly spelled due to non-rule factors, no misspellings was due to both 'R' and 'NR', one per cent of the total spellings was omitted and one per cent misunderstood. In the last category, the pupil correctly spelled the word 'politics' instead of the word 'policies'.

This procedure was followed consistently with only a few exceptions. For example, see Table IX, in Chapter III. Upon examination one will observe that the incorrect spelling of 'freight' as 'fright' is tabulated as due to 'R'. In this instance there could be a debate as to the correct symbolic placement of this incorrect spelling; however, the writer believes that the pupil understood the word to be 'freight'. For the general study there is only a small percentage of such incorrect spellings which does not influence the final results of this study.

It must be noted that attention is focused upon the immediate rule concerned although there is another rule that may function in the spelling of the same word. For example, Table IX, shows the spellings for the word 'neighboring' as Rule Three instead of Rule Four. However, in checking this word, the writer didn't find a single case wherein the final consonant, 'r' was doubled.

It should be noted that in checking incorrect spellings due to 'R' the writer held strictly to the process of examining the correct

application of the rule and not the correct spelling of the suffix. If the rule was correctly applied but the error existed in the spelling of the suffix, the symbol 'NR' was used to designate the incorrect spelling of the word. For example: in Table XXVII, the word 'happiness' is incorrectly spelled 'happines'. The error was made in the spelling of the suffix, however, the rule was correctly applied. Therefore, the symbol 'NR' was used to designate the incorrect spelling of the word.

3. Quartile Placement

After each test paper was graded, the total number of misspelled words was written on the upper left-hand corner of the test paper. As the checking for each group was completed, the set of test papers for the group was arranged consecutively with respect to the total mistakes made by each individual pupil. Final tabulation revealed that for the one thousand one hundred thirty-five pupils participating in the test, eighteen had perfect papers and six missed every word of the test. Table II shows the quartile placement of the pupils' scores with regard to the number of errors made on the thirty-six word test. C. C. Ross makes the following explanation of the quartile deviation:²

. . . 25 per cent of the scores fall below the first quartile, or Q₁, and 25 per cent of the scores exceed the third quartile, or Q₃, the interquartile range is the range of the middle 50 per cent of the scores.

In Table II the quartile deviations are shown for each of the four groups for each of the two types of schools. Examination of the

2. C. C. Ross, op. cit., p. 242.

Table reveals that the correlation of Group 7G, Graded Schools, and Group 7G Rural Schools would be very high. The same pattern is consistent throughout each of the other three groupings as well as the average obtained for each type of school.

Particular attention should be given to the interquartile range of scores because it is within this range that the middle fifty per cent of the total pupil scores are tabulated. This range excludes the best spellers above Q3 and the poorest spellers below Q1. Examination of the Table reveals that the pupils (general average) represented in the interquartile range missed eight to nineteen words, inclusive, of the thirty-six words in the test. The interquartile range for each specific grouping extends above the average, remains the same, or extends below the average. For example, the interquartile range (12-23) for the seventh grade boys, Rural Schools, extends below the group average while the interquartile range (3-12) for the eighth grade girls, Rural Schools, extends above the group average. The same pattern is consistent for the respective groups of the Graded Schools.

TABLE II. QUARTILE PLACEMENT

ERRORS	GRADED SCHOOLS					RURAL SCHOOLS				
	7G	7B	8G	8B	AV.	7G	7B	8G	8B	AV.
1										
2										
3								Q3		
4			Q3							
5										
6										
7	Q3			Q3	Q3	Q3		Q		Q3
8			Q							
9									Q3	
10										
11										
12		Q3			Q		Q3			Q
13	Q		Q1	Q		Q		Q1	Q	
14										
15										
16										
17		Q								
18										
19	Q1			Q1	Q1	Q1			Q1	
20										
21										
22		Q1								
23										
24							Q1			
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
TOTAL CASES	165	175	189	166		108	119	96	119	

LEGEND

7G - 7th Grade Girl 8G - 8th Grade Girl
 7B - 7th Grade Boy 8B - 8th Grade Boy
 AV. = Average for each type of school.

4. Analysis of the Spellings for Rule One

RULE ONE: The plural form of nouns are usually made by adding 's' or 'es' to the singular form. (Pen, pens; inch, inches).

TABLE III. CHECKING PROCEDURE FOR RULE ONE - Q3,
GRADED SCHOOLS

	%C	%R	%NR	%B	%O	%M
Potatoes	99		1			
patatoes			1			
taxes	99	1				
taxs		1				
services	98		2			
survices			1			
sevicees			1			
services			1			

Examination of Tables IV and V reveals that the pupils have little difficulty in forming the plurals of a singular noun according to this rule; however, various degrees of spelling difficulties were connected with the spellings of each of the words associated with the Rule. Errors due to 'NR and 'B' spellings for the word 'services' are prevalent in the interquartile range (Q) and more so in the lowest one-fourth (Q1) of the spellings. One may conclude with respect to the spellings for this rule that if the pupil is able to spell the base word correctly he will have little difficulty in forming the plural by adding 's' or 'es'. (See Table XXXV).

TABLE IV. SPELLING FOR RULE ONE - GRADED SCHOOLS

Rule 1: The plural forms of nouns are usually made by adding 's' or 'es' to the singular form. (Pen, pens; inch, inches).

Section A: potatoes, taxes, services.

	Q3				Q				Q1				AV	
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B		
	<u>potatoes</u>													
R					3		1	1	2	11		12	2.5	
NR	2				1	2	1	6	4	15	2	17	4	
B										13		17	2.5	
O												2		
M														
C	98	100	100	100	96	98	98	93	94	61	98	52	91	

	<u>taxes</u>													
R		2				3		1	6	17	2	2	3	
NR						1			2	6			1	
B										4	2	5	1	
O														
M														
C	100	98	100	100	100	96	99	100	92	73	96	93	95	

	<u>services</u>													
R					3	1		1				4	2	1
NR	2	2		2	16	32	6	12	41	41	28	29	17.5	
B						5		1	13	44	8	29	8	
O						1			2	2		5	1	
M							1	2			2		.5	
C	98	98	100	98	81	61	93	84	44	13	58	35	72	

LEGEND

Horizontal:

Q3 - Upper Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

Q - Interquartile range

Q1 - Lower Quartile

8G - 8th Grade Girl

8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings correctly spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

TABLE V. SPELLINGS FOR RULE ONE - RURAL SCHOOLS

Rule 1: The plural forms of nouns are usually made by adding 's' or 'es' to the singular form. (Pen, pens; inch, inches).

Section A: potatoes, taxes, services.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>potatoes</u>												
R										3			
NR					2		3		8	18	4	16	4
B										12	4	7	2
O									4			3	1
M													
C	100	100	100	100	100	98	100	97	88	67	92	74	93
	<u>taxes</u>												
R					4	11	2	5	19	15	13	3	6
NR									12			6	2
B									4				
O													
M													
C	100	100	100	100	96	89	98	95	65	85	87	91	92
	<u>services</u>												
R					2			9	4		8	6	2.5
NR					14	26	2	19	11	21	16	32	11.5
B				4	2	20		3	58	57	4	26	14.5
O									4	6			.5
M													
C	100	100	100	96	82	54	98	69	23	16	72	36	71

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings correctly spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

5. Analysis of the Spellings for Rule Two

RULE TWO: Nouns ending in 'y' preceded by a consonant form their plural by changing 'y' to 'i' and adding 'es'. (Lady, ladies).

TABLE VI. CHECKING PROCEDURE FOR RULE TWO - Q3,
GRADED SCHOOLS

	%C	%R	%NR	%B	%O	%M
supplies	98	1	1			
supplys		1				
suppies			1			
companies	94	5	1			
companyys		4				
company		1				
comanies			1			
policies	84	8	6		1	1
policies		4				
policys		3				
policy		1				
polociess			3			
polecies			1			
placities			1			
pollicies			1			
politics						1

Tables VII and VIII show the respective degrees of difficulties for each of the three nouns ending in 'y' in changing the 'y' to 'i' and adding 'es'. Examination of the Tables reveals an inconsistency in correctly using the rule to form the plurals for each word. The percentage of 'R' spellings was low (2%) for the word 'supplies' and much greater (18%) for the word 'policies'. Table XXXV reveals that the correct application of the rule would probably increase the correct spellings for this Rule by more than ten per cent.

TABLE VII. SPELLING FOR RULE TWO - GRADED SCHOOLS

Rule 2: Nouns ending in 'y' preceded by a consonant form their plural by changing 'y' to 'i' and adding 'es'. (Lady, ladies).

Section A: supplies, companies, policies.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>supplies</u>												
R	2				1	2	2	3	2	2	6	7	2
NR	2				1	5		1	11	16	2	32	6
B									2	21	2	7	3
O										2			
M							1						
C	100	96	100	100	98	93	97	96	85	59	90	54	89

	<u>companies</u>												
R		5	5	7	7	15	7	13	26	15	25	22	12
NR		2			3	5		1	6	17	6	20	5
B						1			11	24	2	20	5
O												2	
M													
C	100	96	95	93	90	79	93	86	57	44	67	36	78

	<u>policies</u>												
R	9	21		2	19	27	8	14	41	19	25	39	18
NR	7	9	6	4	13	6	10	9	15	4	19	7	9
B					5	18		5	33	56	9	20	12.5
O		2			1					6		2	1
M	2										4		.5
C	82	68	94	94	62	49	82	72	11	15	43	32	59

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings correctly spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

TABLE VIII. SPELLINGS FOR RULE TWO - RURAL SCHOOLS

Rule 2: Nouns ending in 'y' preceded by a consonant form their plural by changing 'y' to 'i' and adding 'es'. (Lady, ladies).

Section A: supplies, companies, policies.

	Q3				Q				Q1				AV.
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>supplies</u>												
R				4	2	6		3	11		9	6	3.5
NR	4				5	9		3	23	15	9	3	6
B									27	21		19	5.5
O						2			7	3			1
M	4						2				4		1
C	92	100	100	96	93	83	98	94	32	61	78	72	83
	<u>companies</u>												
R	8	7	4		25	15	2	5	50	27	39	10	16
NR					4	9		2	5	18		12	4
B						2		2	18	33		27	7
O						2				3		6	1
M													
C	92	93	96	100	71	72	98	91	27	19	61	45	72
	<u>policies</u>												
R	4	9	8	4	34	32	12	15	27	24	12	35	18
NR	8	6			13	4	12	5	24	15	8	3	8
B		3			8	15	3	3	27	47	28	16	13
O						2			12	9			2
M													
C	88	82	92	96	35	47	73	77	10	5	52	46	59

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range 8G - 8th Grade Girl 8B - 8th Grade Boy
 Q1 - Lower Quartile

Vertical

R - Percentage of Total Spellings Misspelled due to the Rule.
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings Correctly Spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

6. Analysis of the Spelling for Rule Three

RULE THREE: 'i' before 'e' except after 'c' or when sounded like 'a' as in 'neighbor' or 'weigh'.

TABLE IX. CHECKING PROCEDURE FOR RULE THREE - Q3.
Graded Schools

	%C	%R	%NR	%B	%O	%M
believe	98	2				
beleive		2				
relieve	95	4	1			
releive		3				
releave		1				
relief			1			
niece	72	27		1		
neice		27				
neiss				1		
receive	94	6				
recieve		6				
deceive	90	9		1		
decieve		9				
desieve				1		
receipt	66	7	26	11		
reciept		4				
recept		2				
recipt		1				
receit			25			
receite			1			
reciet				6		
recite				2		
reseat				1		
reciete				1-		
riecpt				1-		
reecat				1-		
freight	93	6	1			
frieight		5				
fright		1				
freigh			1			

TABLE IX. CHECKING PROCEDURE FOR RULE THREE - Cont'd.

	%C	%R	%NR	%B	%O	%M
neighboring	97		3			
neiboring			2			
neighoring			1-			
neighboring			1-			
neigorning			1-			
foreign	81	12	2	5		
foriegn		12				
forgein			1-			
foreingn			1-			
foreing			1-			
forein			1-			
forgien				2-		
foregin				1		
forigen				1-		
forighn				1-		
forun				1-		
foriegin				1-		

This Rule has three respective divisions which the writer has arbitrarily characterized as follows:

- Section "A" - 'i' before 'e'
- Section "B" - except after 'c'
- Section "C" - sounded like 'a'.

Three applicable words were selected for each division. Tables X through XV, inclusive, give the respective symbol results for each word. Again there was a great degree of variation in the correct application of the Rule. There was a large percentage of 'R' spellings for each Section; however, there was a varying degree among the respective words: 'neighboring' - 2.5%; 'niece' - 42.5%. (The percentage of incorrect spellings is based on the total spellings for each word.) One may also note that the best spellers included above Q3 had a con-

siderable degree of difficulty in spelling the words correctly. This seems to indicate that a certain percentage of the best spellers do not make consistent use of the rules of spelling. Further examination of Table XXXV reveals that the correct application of the Rule would probably increase the correct spellings of the words for this Rule by more than twenty per cent. Only two of the nine words ('receipt' and 'neighboring') had a greater percentage of 'NR' than 'R' spellings.

Word	NR	R	Total	NR %	R %
Receipt	10	15	25	40	60
Neighboring	12	10	22	55	45
...

Footnote:
 1 - Upper Grade
 2 - Intermediate
 3 - Lower Grade
 4 - ...
 5 - ...
 6 - ...
 7 - ...
 8 - ...
 9 - ...

TABLE X. SPELLING FOR RULE THREE - GRADED SCHOOLS

Rule 3: 'i' before 'e' except after 'c' or when sounded like 'a' as in 'neighbor' and 'weigh'.

Section A: believe, relieve, niece.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>believe</u>												
R	2		3	2	4	12	9	19	26	70	39	70	21.5
NR					1	1			4				.5
B										6			.5
O												2	
M												5	.5
C	98	100	97	98	95	87	91	81	70	24	61	23	77
	<u>relieve</u>												
R		7	4	5	7	13	13	32	39	63	37	56	23
NR		2	2		1	5	1	1	9		6	9	3.5
B					1	2		1	2	15	4	7	2.5
O												2	
M												26	
C	100	91	94	95	91	80	86	66	50	22	53	26	71
	<u>niece</u>												
R	12	25	33	36	33	58	47	58	59	50	64	53	44
NR						3	1	2		2		5	1
B		2				1			6	31		25	5.5
O										2		5	.5
M													
C	88	73	67	64	67	38	52	40	35	15	36	12	49

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled Due to the Rule
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings Correctly Spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

TABLE XI. SPELLINGS FOR RULE THREE - RURAL SCHOOLS

Rule 3: 'i' before 'e' except after 'c' or when sounded like 'a' as in neighbor' and 'weigh'.

Section A: believe, relieve, niece.

	Q3				Q				Q1				AV
	: 7G :	7B :	8G :	8B :	: 7G :	7B :	8G :	8B :	: 7G :	7B :	8G :	8B :	
	<u>believe</u>												
R	4	20		13	3	4	11	22	50	63	26	40	21
NR						4	2	2	4			6	2
B						2			4	6		9	2
O												3	
M													
C	96	80	100	87	97	90	87	76	42	31	74	42	75
	<u>relieve</u>												
R	4	13	4	13	13	7	13	22	39	39	22	45	19.5
NR			4		9	6		3	12	6		3	3.5
B									19	18	4	6	4
O										3			
M													
C	96	87	92	87	78	87	87	77	30	32	74	46	73
	<u>niece</u>												
R	21	27	22	35	34	35	54	62	42	45	70	55	41
NR						4						3	.5
B						7		5	23	30	8	32	9
O								2		3		3	.5
M													
C	79	73	78	65	66	54	46	31	35	22	22	7	49

LEGEND

Horizontal:

Q3 - Upper Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

Q - Interquartile range

8G - 8th Grade Girl

8B - 8th Grade Boy

Q1 - Lower Quartile

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings Correctly Spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

TABLE XII. SPELLINGS FOR RULE THREE - GRADED SCHOOLS

Rule 3: 'i' before 'e' except after 'c' or when sounded like 'a' as in 'neighbor' and 'weigh'.

Section B: receive, deceive, receipt.

	Q3				Q				Q1				AV
	:: 7G :	7B :	8G :	8B :	:: 7G :	7B :	8G :	8B :	:: 7G :	7B :	8G :	8B :	
	<u>receive</u>												
R	7	11	2	5	39	45	14	17	52	60	21	50	27
NR					1								
B						1			7	20	2	8	3
O													
M													
C	93	89	98	95	60	54	86	83	41	20	77	42	70
	<u>deceive</u>												
R	5	23	6	7	47	56	25	34	61	57	41	55	35
NR						5	3		4	6	2	7	2
B		2			1	5	2	6	13	31	4	20	7
O						1							
M													
C	95	55	94	93	52	33	70	60	22	6	53	18	56
	<u>receipt</u>												
R	12	9	6		23	8	17	10	13		6	9	10
NR	21	16	35	41	21	33	49	47	15	13	35	25	29
B	14	27	2	2	36	50	15	32	70	87	51	66	38
O						1		1					
M											2		
C	53	48	57	57	20	8	19	10	2	0	6	0	23

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings Correctly Spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

TABLE XIII. SPELLING FOR RULE THREE - RURAL SCHOOLS

Rule 3: 'i' before 'e' except after 'c' or when sounded like 'a' as in 'neighbor' and 'weigh'.

Section B: receive, deceive, receipt

	Q3				Q				Q1				Av
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>receive</u>												
R	4	7		9	38	48	15	25	28	61	30	23	24
NR						4							
B									4	9		9	1.5
O						2			4	3		3	1
M						2			4				.5
C	96	93	100	91	62	44	85	75	60	27	70	65	73

	<u>deceive</u>												
R	7	13	4	26	48	68	28	36	46	52	30	28	32
NR					2					3		9	1
B					4	6	4	2	35	28	8	18	9
O									8	3			1
M													
C	93	87	96	74	46	26	68	62	11	14	62	45	57

	<u>receipt</u>												
R	4	20		13	27	26	15	14	4	3	8	10	13
NR	12	20	15	26	23	22	31	48	32	9	39	31	25.5
B	4	13		4	36	41	22	29	60	88	26	48	30
O						4						3	.5
M													
C	80	47	85	57	14	7	32	9	4	0	27	6	31

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings Correctly Spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

TABLE XIV. SPELLING FOR RULE THREE - GRADED SCHOOLS

Rule 3: 'i' before 'e' except after 'c' or when sounded like 'a' as in 'neighbor' and 'weigh'.

Section C: freight, neighboring, foreign.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>freight</u>												
R	7	7	4	7	28	31	21	34	61	49	39	50	28
NR		2		2				1	2	2		4	1
B						5		2	11	30	6	30	7
O													
M													
C	93	91	96	91	72	64	79	63	26	19	55	16	64
	<u>neighboring</u>												
R				2	7	6	1	1	4	6	2		2
NR		5	2	7	8	17	6	1	20	27	13	18	10
B						2	2	10	17	36	19	54	11.5
O												5	.5
M													
C	100	95	98	91	85	75	91	88	59	31	66	23	75
	<u>foreign</u>												
R	14	21	2	12	24	22	22	17	7	15	18	14	15.5
NR	5	5			7	12	3	3	2	8	6	2	4.5
B	5	18			28	55	7	20	85	60	32	67	31.5
O					1					4		5	.5
M													
C	76	56	98	88	39	11	68	60	6	13	44	12	48

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical

N - Percentage of Total Spellings Misspelled due to the Rule.
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M. - Percentage of Total Spellings correctly spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

TABLE XV. SPELLINGS FOR RULE THREE - RURAL SCHOOLS

Rule 3: 'i' before 'e' except after 'c' or when sounded like 'a' as in 'neighbor' and 'weigh'.

Section C: freight, neighboring, foreign.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>freight</u>												
R	11	3	11	9	20	37	28	31	28	43	61	52	28
NR					2	2		2	4	3			1
B						14			39	39	17	23	11
O						2				3		6	1
M													
C	89	97	89	91	76	45	72	67	29	12	22	19	59

	<u>neighboring</u>												
R					4	6		2	4	12	4	3	3.5
NR					14	14	10	9	24	24	18	25	11.5
B		3		4	2	14	2	19	14	52	22	42	14.5
O					2			2		3		9	1.5
M													
C	100	97	100	96	76	66	88	68	58	9	56	21	69

	<u>foreign</u>												
R	14	6	4	8	18	9	11	16	4	3	18	13	10
NR	4	3		4	7	7	5			3			2.5
B	8			4	25	73	18	30	80	88	48	72	37.5
O										6		9	1
M													
C	74	91	96	84	50	11	66	54	16	0	34	6	49

LEGEND

Horizontal:

Q3 - Upper Quartile

7G - 7th Grade Girl

7B -7th Grade Boy

Q - Interquartile Range

Q1 - Lower Quartile

8G - 8th Grade Girl

8B -8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings Correctly Spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

7. Analysis of the Spellings for Rule Four

RULE FOUR: When suffixes beginning with a vowel (such as 'ing' or 'ed') are added to one-syllable words or words accented on the last syllable and ending in a single consonant, the final consonant is doubled. (Run, running; occur, occurred).

TABLE XVI. CHECKING PROCEDURE FOR RULE FOUR - Q3,
GRADED SCHOOLS

	%C	%R	%NR	%B	%O	%M
committed	79	12	8	1		
committed		12				
comitted			8			
comited				1-		
communitied				1-		
referred	71	25	2	2		
referred		24				
referrred		1				
refferred			1			
refurred			1			
refured				2		
referred				1-		
compelled	93	7		2		
compeled		6				
compel		1				
compailed				1-		
compled				2-		
benefited	73	13	11	3		
benefitted		13				
benifited			9			
befited			1-			
benifeted			1-			
benafited			1-			
benefitend			1-			
beniffited			1-			
benifitted				2		
bennifitted				1-		
reference	90	2	8			
referrence		2				
referrence			1			
referance			5			
refrence			1-			
refernece			1-			
refurness			1-			
profitable	99		1			

There are two separate sections of word spellings for this Rule:

Section "A" pertains to the base words which are accented on the last syllable and Section "B" to those words which do not have a last syllable accent. Tables XVII and XVIII reveal that a large percentage of the incorrect spellings was due to the 'R' factor. (The pupil did not double the final consonant.) However, the 'R' spellings for the words under Section "B" (Tables XIX and XX) are almost nil. The pupil did not need to double the final consonant, however, a few proceeded to do so. Only a few tried to apply the Rule of doubling the final consonant to the words of Section "B". The word 'benefited' caused a bit of 'R' difficulty, however, the reason may be that the word 'committed' immediately preceded it in the test. The 'NR' factors for the incorrect word spellings of Section "B" are quite predominant for the word spellings in this division. Table XXXV shows the contrast of 'R' and 'NR' spellings for each section of the Rule. In Section "A", nearly one-fourth of the pupils had incorrect spellings of the three words because they did not double the final consonant. In Section "B" five per cent of the pupils doubled the final consonant contrary to the provisions of the Rule. Examination of Table XVI reveals that certain pupils in Q3 doubled the consonant of the first syllable while others doubled both. For example: beniffited, benniffited, referrence and referrence.

One may, therefore, conclude that the pupil must know the syllable divisions as well as the accented syllable of each word before he can correctly apply the appropriate spelling rule.

TABLE XVII. SPELLINGS FOR RULE FOUR - GRADED SCHOOLS

Rule 4: When suffixes beginning with a vowel (such as 'ing' or 'ed') are added to one-syllable words or words accented on the last syllable and ending in a single consonant, the final consonant is doubled. (Run, running; occur, occurred).

Section A: committed, referred, compelled.

	Q3				Q				Q1				Av
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>committed</u>												
R	23	45	2	7	37	39	17	14	39	28	18	27	24.5
NR	5	18	6	5	12	18	9	14	9	11	13	11	11.5
B		5			11	13	6	4	43	53	18	27	15
O										2			
M									2				
C	72	32	92	88	40	30	66	68	7	6	51	35	49
	<u>referred</u>												
R	28	61	6	18	63	62	21	25	39	39	45	45	37.5
NR		5		2	1	1		6	9		2	5	2.5
B	3	3	2		15	17	6	7	45	55	19	34	17
O										2			
M											4		
C	69	41	92	80	21	20	73	62	7	4	30	16	43
	<u>compelled</u>												
R	7	10	9	2	23	22	12	15	28	36	20	27	17.5
NR					4	2		6	11	2	2	5	2.5
B		7			14	20	3	10	41	47	30	48	18
O								1				2	
M													
C	93	83	91	98	59	56	85	68	20	15	48	18	61

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q = Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted
 M - Percentage of Total Spellings correctly spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

TABLE XVIII. SPELLINGS FOR RULE FOUR - RURAL SCHOOLS

Rule 4: When suffixes beginning with a vowel (such as 'ing' or 'ed') are added to one-syllable words or words accented on the last syllable and ending in a single consonant, the final consonant is doubled. (Run, running; occur, occurred).

Section A: committed, referred, compelled.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>committed</u>												
R	14	17		9	20	37	9	11	31	30	9	16	17
NR	11	10		4	12	22	11	13	19	3	18	19	12
B		3			11	7		8	31	51	22	19	12
O									8	3		3	1
M													
C	75	70	100	87	57	34	80	68	11	13	51	43	58

	<u>referred</u>												
R	25	23	4	13	55	46	11	19	27	36	13	23	24.5
NR		13				11		3	4		8	10	4
B	3	3			20	27	2	11	65	58	20	39	20.5
O										3			
M													
C	72	61	96	87	25	16	87	67	4	3	59	28	51

	<u>compelled</u>												
R	4	9		4	13	29	11	15	27	36	16	25	15.5
NR					4	11	3	5	8	9		6	4
B		3			13	13	5	15	32	33	26	41	15
O						2		2	8	3			1.5
M												3	
C	96	88	100	96	70	45	81	63	25	19	58	25	64

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B-7th Grade Boy
 Q - Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B-8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings Correctly Spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

TABLE XIX. SPELLINGS FOR RULE FOUR - GRADED SCHOOLS

Rule 4: When suffixes beginning with a vowel (such as 'ing' or 'ed') are added to one-syllable words or words accented on the last syllable and ending in a single consonant, the final consonant is doubled. (Run, running; occur, occurred).

Section B : benefited, profitable, reference.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>benefited</u>												
R	21	5	10	13	9	5	22	11	9	4	6		9.5
NR	7	12	10	16	40	55	26	37	37	55	66	58	35
B	5	5	2		7	7	8	18	39	31	15	35	14.5
O									2	2		7	1
M													
C	67	78	78	71	44	33	44	31	13	8	13	0	40
	<u>profitable</u>												
R							1	3			2		.5
NR		2			4	17	3	8	37	30	47	53	16.5
B					1		1	1	17	35	4	7	5.5
O												5	.5
M													
C	100	98	100	100	95	83	95	88	46	35	47	35	77
	<u>reference</u>												
R	2	27	4	2	5	2	1	7			9	2	2.5
NR	7			4	20	37	10	18	45	49	39	38	25
B					3	7		1	20	36	11	10	7.5
O									2	4	2	6	1
M													
C	91	73	96	94	72	54	89	74	33	11	39	44	64

LEGEND

Horizontal:

Q3 - Upper Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

Q - Interquartile range

8G - 8th Grade Girl

8B - 8th Grade Boy

Q1 - Lower Quartile

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings correctly spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

TABLE XX. SPELLINGS FOR RULE FOUR - RURAL SCHOOLS

Rule 4: When suffixes beginning with a vowel (such as 'ing' or 'ed') are added to one-syllable words or words accented on the last syllable and ending in a single consonant, the final consonant is doubled. (Run, running; occur, occurred).

Section B: benefited, profitable, reference.

	Q3				Q				Q1				Av
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>benefited</u>												
R	18	13	22	13	9	9	11	15	11	3	4		10.5
NR		30	7	30	21	39	28	44	35	52	70	58	34.5
B	4	3			11	7	15	17	38	27	26	36	15.5
O						2				3			.5
M													
C	78	54	71	57	59	43	46	24	16	15	0	6	39
	<u>profitable</u>												
R					4						11	7	1.5
NR					14	9	4	9	16	18	13	14	8
B		3			7	6		5	38	42	9	29	11.5
O									8	6		7	2
M						2				3		7	1
C	100	97	100	100	75	83	96	86	38	31	67	36	76
	<u>reference</u>												
R		3		4	2		10	5	12		13	3	4.5
NR	4	9	8	4	14	37	10	16	24	48	18	16	17.5
B	4					6			26	30	18	25	8.5
O						6			8	3			1.5
M													
C	92	88	92	92	84	51	80	79	30	19	51	56	68

LEGEND

Horizontal:

Q3 - Upper Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

Q - Interquartile range

Q1 - Lower Quartile

8G - 8th Grade Girl

8B - 8th Grade Boy

Vertical

R - Percentage of Total Spellings Misspelled Due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings Correctly Spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

8. Analysis of the Spellings for Rule Five.

RULE FIVE: When suffixes beginning with a consonant are added to words ending in silent 'e', the 'e' is usually retained. (Sure, surely).

TABLE XXI. CHECKING PROCEDURE FOR RULE FIVE - Q₃,
GRADED SCHOOLS

	%C	%R	%NR	%B	%O	%M
useless	99	1				
usless		1				
statement	97	3				
statment		3				
separately	82	10	14	4		
separatly		10				
seperately			13			
separtely			1			
seperatly				2-		
separtely				1-		
seperatley				2-		
separetly				1-		

This Spelling Rule stresses the retention of the silent 'e' when a suffix beginning with a consonant is added to the base word. Tables XXII and XXIII show the percentage of incorrect spellings for each symbol. For some of the words the 'R' spellings were greater than the other factors. For the word 'separately', however, the 'R' factor was comparatively insignificant. Table XXXV reveals that seven per cent of the pupils made incorrect 'R' spellings. In examining the combination of 'R' and 'B' one will discover that nearly one-fourth of the pupils did not apply or use the Rule correctly.

TABLE XXII. SPELLINGS FOR RULE FIVE - GRADED SCHOOLS

Rule 5: When suffixes beginning with a consonant are added to words ending in silent 'e' the 'e' is usually retained. (Sure, surely).

Section A: useless, statement, separately.

	Q3				Q				Q1				AV	
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B		
	<u>useless</u>													
R	2				7	3	5		13	20	8	22	7	
NR					1	1	1		6	29	5		3.5	
B					1	3			9	20	2	11	3	
O											5		.5	
M									2					
C	100	98	100	100	91	93	100	94	70	31	90	57	86	
	<u>statement</u>													
R	9				1	9	7	10	13	11	29	27	9.5	
NR							1		4	6	2		1	
B									4	9	2		1.5	
O														
M														
C	100	100	100	91	99	91	93	89	79	74	71	69	88	
	<u>separately</u>													
R	7	18	2	14	15	14	11	6	4	11		7	9	
NR	26	23	9	2	31	25	35	49	17	6	22	11	21	
B	5	7	4		33	51	10	25	67	90	61	70	46.5	
O							1		2			7	.5	
M									2					
C	62	52	85	84	21	9	44	20	8	4	6	5	23	

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings correctly Spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

TABLE XXIII. SPELLINGS FOR RULE FIVE - RURAL SCHOOLS

Rule 5: When suffixes beginning with a consonant are added to word ending in silent 'e' the 'e' is usually retained. (Sure, surely).

Section A : useless, statement, separately.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
					<u>useless</u>								
R	3				2	6	4	2	16	9	13	16	6.5
NR						4	2	3	16	9		19	4.5
B					2	2			8	45	6	24	7.5
O									4		4		.5
M									12				1
C	100	97	100	100	96	88	94	95	40	37	77	41	80

					<u>statement</u>								
R					5	2	4	3	8	17	8	7	4.5
NR						2	2	2					.5
B									4	9		7	2
O													
M													
C	100	100	100	100	95	96	94	95	88	74	92	86	93

					<u>separately</u>								
R	4	6			2	5	3	7	4	6	4	6	4
NR	25	30	20	13	41	37	37	42	16	3	49	26	28.5
B		20	4	9	37	43	10	15	72	88	31	45	31
O									8	3	4	6	1.5
M													
C	71	44	76	78	21	15	50	36	0	0	12	17	35

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical;

R - Percentage of Total Spellings Misspelled Due to the Rule.
 NR - Percentage of Total Spellings Misspelled ~~Not~~ Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings omitted.
 M - Percentage of Total Spellings Correctly Spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

9. Analysis of the Spellings for Rule Six

RULE SIX: When suffixes beginning with a vowel are added to words ending in silent 'e', the 'e' is usually dropped. (Come, coming).

TABLE XXIV. CHECKING PROCEDURE FOR RULE SIX -Q3,
GRADED SCHOOLS

	%C	%R	%NR	%B	%O	%M
practicing	96	2	2			
practiceing		2				
praticing			1			
practicsing			1			
adorable	95	2	3			
adoreable		2				
adourable			1			
adurable			1			
adorrable			1			
valuable	90	4	5	1		
valueable		4				
valuble			3			
vaulable			1-			
vauable			1-			
valuabl			1-			
valueble			1-			
					1	

In mastering this Rule the pupil must give attention to the silent 'e' when adding a vowel suffix to the base word. Tables XXV and XXVI show a varying percentage of 'R' spellings. This is true for each of the four groups as well as the quartile deviation of cases.

Table XXXV shows that more than ten per cent of the pupils do not apply the Rule correctly.

TABLE XXV. SPELLINGS FOR RULE SIX - GRADED SCHOOLS

Rule 6: When suffixes beginning with a vowel are added to words ending in silent 'e', the 'e' is usually dropped. (Come, coming).

Section A: practicing, adorable, valuable.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>practicing</u>												
R	2			2	5	7		8	2	4	6	15	4
NR	2			2	17	30	10	15	70	50	24	55	24
B					1	3	1		9	24	4	20	4
O													
M													
C	100	96	100	96	77	60	89	77	19	22	66	10	68
	<u>adorable</u>												
R		5			11	7	1	1	6		7	7	3.5
NR		2	2	2	4	2	4	9	22	28	13	22	9
B					1			3	2	17	2	11	3.5
O						1				2			
M											2		
C	100	93	98	98	84	90	95	87	70	53	76	60	83
	<u>valuable</u>												
R	7	4	2	2	20	18	13	15	9	13	22	13	11.5
NR	5	9	2	4	26	37	7	9	57	32	26	27	20
B				2	3	6		1	15	34	4	20	7.5
O									2	2		7	1
M													
C	88	84	96	92	51	39	80	75	17	17	48	33	60

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.
 NR - Percentage of Total Spellings Misspelled Not Due to the Rule.
 B - Percentage of Total Spellings Misspelled Due to Both (R and NR).
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings Correctly Spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

TABLE XXVI. SPELLINGS FOR RULE SIX - RURAL SCHOOLS

Rule 6: When suffixes beginning with a vowel are added to words ending in silent 'e', the 'e' is usually dropped. (Come, coming).

Section A: practicing, adorable, valuable.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>practicing</u>												
R					14	4	2	8	4		13	19	5
NR		3		4	17	48	9	22	42	55	30	36	22
B						4		3	27	21		13	5
O						2			4	3		3	1
M												3	
C	100	97	100	96	69	42	89	67	23	31	57	26	67
	<u>adorable</u>												
R	4	7		4	9		9	9	11	3	8	9	6
NR			4		11	18	2	7	19	33		9	8.5
B						2			19	27	4	19	6
O					2	4			11	9		3	2.5
M													
C	96	93	96	96	78	76	89	84	40	28	88	60	77
	<u>valuable</u>												
R	15	9	4	4	30	18	10	20	16	9	13	13	13.5
NR		9	4		22	39	5	12	24	36	18	23	16
B	4	3			4	11	3	3	48	40	9	9	11
O									4	3		6	1
M		3										3	.5
C	81	76	92	96	44	32	82	65	8	12	60	46	58

LEGEND

Horizontal:

Q3 - Upper Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

Q - Interquartile range

Q1 - Lower Quartile

8G - 8th Grade Girl

8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled Due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings Correctly Spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

10. Analysis of the Spellings for Rule Seven

RULE SEVEN: When suffixes are added to words ending in 'y' preceded by a consonant, the 'y' is usually changed to 'i'. When the 'y' is preceded by a vowel, the 'y' is usually retained. (Tidy, tidiness; joy, joyful).

Table XXVII. CHECKING PROCEDURE FOR RULE SEVEN - Q3,
GRADED SCHOOLS

	%C	%R	%NR	%B	%O	%M
twentieth	85	5	6	4		
twenteth		1				
twentyth		2				
twentyeth		1				
twenteith		1-				
twenthth		1-				
twentiethieth			1			
twentith			4			
tweenieth			1			
twenth				1-		
tweneth				1-		
tweinth				1-		
twentyith				1-		
tweneith				1-		
twienty				1-		
twienth				1-		
hurriedly	94	2	3	1		
hurredly		2				
hurridly			2			
hurridely			1	1		
heredly						
happiness	88	9	3			
happieness		3				
happyness		3				
happness		1				
happeness		2				
happinss			1			
happiest			1-			
happines			1-			
happinies			1-			
hapiness			1-			

TABLE XXVII. CHECKING PROCEDURE FOR RULE SEVEN - Cont'd.

	%C	%R	%NR	%B	%O	%M
journays	83	14	2	1		
journies		13				
journey		1				
journys			1-			
jorneyes			2-			
jouneyes				1-		
journyes				1-		
delayed	98	2				
delaid		2				
occupying	69	26	1	4		
occuping		24				
occupping		1				
occupieing		1-				
occupping		1-				
ocuppying			1-			
ocupying			1-			
ocupping				1		
occupping				1-		
occoping				1-		
occupieying				1-		
occupaiing				1-		

There are two separate sections of word spellings for this Rule: Section "A" deals with the 'y' endings preceded by a consonant while Section "B" pertains to 'y' endings preceded by a vowel. One must note the exception in Section "B" with the word 'occupying'. In this word the suffix 'ing' is added to the base word 'occupy'. The exception to this Rule is to retain the 'y' in the instance of an 'ing' suffix. The plural form of the word 'journey' perhaps does not conform entirely to this Rule nor does it apply directly to Rule Two. By using these two words the writer tried to determine if the pupils were paying particular attention to the preceding consonant or preceding vowel while spelling the respective words.

Tables XXVIII through XXXI, inclusive, show the respective symbol spellings for each selected word. For certain words pupils of Q3 had some difficulty in spelling the words correctly according to the Rule. Table XXXV reveals that more than fifteen per cent of the total spellings are only 'r' spellings. An additional fifteen per cent may be added for the 'B' spellings which makes approximately thirty per cent of the total spellings incorrectly spelled due to 'R' and 'B'.

TABLE XXVIII. SPPELLINGS FOR RULE SEVEN - GRADED SCHOOLS

Rule 7: When suffixes are added to words ending in 'y' preceded by a consonant, the 'y' is usually changed to 'i'. When the 'y' is preceded by a vowel, the 'y' is usually retained. (Tidy, tidiness; joy, joyful).

Section A: twentieth, hurriedly, happiness.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>twentieth</u>												
R	7	16			24	30	10	10	33	11	26	32	15
NR	12	12		2	20	20	15	20	11	19	26	31	17
B		14		2	28	33	10	25	52	60	39	27	24
O							2			6		5	1
M													
C	81	58	100	96	28	17	63	45	4	4	9	5	43

	<u>hurriedly</u>												
R			2	4		2	3	6	4	4	11	13	4
NR			6	5	1	11	21	19	22	22	39	22	14
B						1		4	9	26	16	45	8
O													
M													
C	100	100	92	91	99	86	76	71	65	48	34	20	74

	<u>happiness</u>												
R		27		12	35	53	21	36	43	42	32	40	28.5
NR		9	2	2	5	7	2	10	13	24	6	16	8
B					3	6		6	17	30	4	13	6.5
O													
M													
C	100	67	98	86	57	34	77	48	27	4	58	31	57

LEGEND

Horizontal:

Q3 - Upper Quartile

Q - Interquartile range

Q1 - Lower Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

8G - 8th Grade Girl

8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings Correctly Spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

TABLE XXIX. SPELLINGS FOR RULE SEVEN - RURAL SCHOOLS

Rule 7: When suffixes are added to words ending in 'y' preceded by a consonant, the 'y' is usually changed to 'i'. When the 'y' is preceded by a vowel, the 'y' is usually retained. (Tidy, tidiness; joy, joyful).

Section A: twentieth, hurriedly, happiness.

	Q3				Q				Q1				Av
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>twentieth</u>												
R	4	7		9	7	15	11	31	11	16	17	23	12.5
NR	4	3		9	16	17	11	13	15	21	17	23	12.5
B		3			14	26	9	23	42	42	48	32	20
O									8	3		3	1
M													
C	92	87	100	82	63	42	69	33	24	18	18	19	54
	<u>hurriedly</u>												
R						2		3			13	9	2.5
NR		7			4	9	13	28	16	36	39	23	14.5
B					2	4		8	27	36	4	39	10
O									4	3		6	1
M													
C	100	93	100	100	94	85	87	61	53	25	44	23	72
	<u>happiness</u>												
R	12	27	4	4	20	41	12	33	27	46	40	48	26
NR					4	10	4	5	27	15	13	13	7.5
B		3			5	14	2	9	35	36	18	33	13
O								2				3	.5
M													
C	88	70	96	96	71	35	82	51	11	3	29	3	53

LEGEND

Horizontal:

Q3 - Upper Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

Q - Interquartile range.

Q1 - Lower Quartile

8G - 8th Grade Girl

8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings correctly spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

TABLE XXX. SPELLING FOR RULE SEVEN - GRADED SCHOOLS

Rule 7: When suffixes are added to words ending in 'y' preceded by a consonant, the 'y' is usually changed to 'i'. When the 'y' is preceded by a vowel, the 'y' is usually retained. (Tidy, tidiness; joy, joyful).

Section B: journeys, delayed, occupying.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>journeys</u>												
R	16	20	10	9	29	31	33	25	17	11	39	18	21.5
NR	3	6		3	13	14	10	6	24	15	6	25	10.5
B		5			11	19	2	2	35	68	21	38	16.5
O						1		1	2	2			.5
M										2			
C	81	69	90	88	47	35	55	66	22	2	34	19	51
	<u>delayed</u>												
R		2	4	2	8	11	10	13	24	45	28	41	15.5
NR						1		1	2				
B						2		4	4	20	2	12	3.5
O						1					2		
M													
C	100	98	96	98	92	85	90	82	70	35	68	47	81
	<u>occupying</u>												
R	18	32	18	36	44	37	45	35	41	15	41	15	31.5
NR	2	2			4	13	5	13	11	22	11	7	7.5
B	2	7	4	2	4	22	11	17	37	53	40	64	22
O						1		3	2	6	2	9	2
M							1						
C	78	59	78	62	48	27	38	32	9	4	6	5	37

LEGEND

Horizontal:

Q3 - Upper Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

Q - Interquartile range

8G - 8th Grade Girl

8B - 8th Grade Boy

Q1 - Lower Quartile

Vertical:

R - Percentage of Total Spellings Misspelled Due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings Correctly Spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

TABLE XXXI. SPELLINGS FOR RULE SEVEN - RURAL SCHOOLS

Rule 7: When suffixes are added to words ending in 'y' preceded by a consonant, the 'y' is usually changed to 'i'. When the 'y' is preceded by a vowel, the 'y' is usually retained. (Tidy, tidiness; joy, joyful).

Section B: journeys, delayed, occupying.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>journeys</u>												
R	25	23	19	26	18	28	33	35	16	3	35	28	24
NR	4	9	6		9	16	2	2	8	6		7	6.5
B		6			14	33	2	17	64	76	12	52	23
O						2		2		9	4		1.5
M										3			
C	71	62	75	74	59	21	63	44	12	3	49	13	45

	<u>delayed</u>												
R		3		4	7	11		14	31	24	17	32	12
NR								2		3	4	3	1
B					2		3		11	24	8	9	4.5
O										3		3	.5
M													
C	100	97	100	96	91	89	100	81	58	46	71	53	82

	<u>occupying</u>												
R	32	27	12	22	48	37	50	44	40	15	40	23	32.5
NR		3			11	15	2	7	8	9		12	5.5
B				13	6	28	14	25	40	64	45	53	24
O					2			2	4	12	8	12	3.5
M									8				.5
C	68	70	88	65	33	20	34	22	0	0	7	0	34

LEGEND

Horizontal

Q3 - Upper Quartile

Q - Interquartile range

Q1 - Lower Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

8G - 8th Grade Girl

8B - 8th Grade Boy

Vertical:

R - Percentage of Total Spellings Misspelled Due to the Rule.

NR - Percentage of Total Spellings Misspelled Not Due to the Rule.

B - Percentage of Total Spellings Misspelled Due to Both (R and NR).

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings Correctly spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

11. Analysis of the Spellings for the Three Difficult Words

TABLE XXXII. CHECKING PROCEDURE FOR THE THREE DIFFICULT WORDS - Q3, GRADED SCHOOLS

	%C	%R	%NR	%B	%O	%M
schedule	75		24		1	
schedules			4			
scedule			3			
schedules			3			
scedual			2			
schuell			1			
skedule			1-			
sudual			1-			
scuduel			1-			
schule			1-			
scedule			1-			
schudle			1-			
schdual			1-			
skedual			1-			
schudule			1-			
schedules			1-			
schduel			1-			
schulede			1-			
schuel			1-			
schueled			1-			
skedgu			1-			
scheudal			1-			
schedules			1-			
schedul			1-			
Kindergarten	89		11			
kindergarten			4			
kintergarten			3			
kindgarten			1			
kindegarten			1-			
kindegarden			1-			
kendergarten			1-			
kiendergarten			1-			
kintergarten			1-			

TABLE XXXII. CHECKING PROCEDURE FOR THREE DIFFICULT WORDS - Cont'd.

	%C	%R	%NR	%B	%O	%M
guarantee	56		44			
guarntee			8			
guarrantee			3			
garantee			3			
guarentee			3			
garentee			3			
garuntee			2			
guaranty			2			
guarante			2			
garante			1			
garunty			1			
guaranteee			1			
gaurnteed			1-			
garunte			1-			
garntie			1-			
gaurntee			1-			
garuente			1-			
gaurintee			1-			
garanttee			1-			
guaninty			1-			
gaurentee			1-			
garente			1-			
guarntee			1-			
gerantee			1-			
gurranty			1-			
garrantee			1-			
garnettee			1-			
guantee			1-			
gurante			1-			
garrintee			1-			
garanntee			1-			
garuantee			1-			
garrentee			1-			
garunity			1-			
guarantte			1-			
guraantee			1-			
gaurantee			1-			

The following three difficult words were included in the test: schedule, guarantee and kindergarten. By including these non-rule words the writer had planned to make the test more difficult as well as to try to determine the spelling pattern used by pupils in spelling the base words.

Table XXXII shows the various incorrect spellings for Q3, Graded Schools. Upon examination one will discover that the best spellers make an attempt to spell the words although it is difficult to determine if each pupil uses a specific pattern to aid him in spelling words. There seem to be numerous attempts to spell the words by using phonetics as a spelling aid; however, just 'chance spellings' of the respective words seem to be predominant.

Tables XXXIII and XXXIV show the percentage of the total spellings for each respective symbol. The degree of difficulty for the three words, Graded Schools, ranges twenty-five percent of the total spellings correct (guarantee) to fifty-nine per cent of the total spellings correct (kindergarten). It must be noted that these figures include the pupils of the seventh grade as well as those of the eighth grade. The same pattern is approximately consistent for the Rural Schools.

TABLE XXXIII. SPELLINGS FOR THREE DIFFICULT WORDS -
GRADED SCHOOLS

Section A: schedule, guarantee, kindergarten.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
NR O M C	<u>schedule</u>												
	26	66	6	5	87	96	49	73	89	96	81	94	64.5
				2	1	1	1		9	4	6	5	2.5
NR O M C	<u>guarantee</u>												
	63	71	16	29	92	95	63	70	96	98	94	93	73.5
					1	3		1	4	2		7	1.5
NR O M C	<u>kindergarten</u>												
	5	16	6	16	33	41	28	54	57	76	64	91	41
												2	
NR O M C	95	84	94	84	67	59	72	46	43	24	36	7	59

LEGEND

Horizontal

Q3 - Upper Quartile

Q - Interquartile Range

Q1 - Lower Quartile

7G - 7th Grade Girl

7B - 7th Grade Boy

8G - 8th Grade Girl

8B - 8th Grade Boy

Vertical

NR - Percentage of Total Spellings Misspelled.

O - Percentage of Total Spellings Omitted.

M - Percentage of Total Spellings correctly spelled but Misunderstood.

C - Percentage of Total Spellings Correctly Spelled.

TABLE XXXIV. SPELLINGS FOR THREE DIFFICULT WORDS -
RURAL SCHOOLS

Section A: schedule, guarantee, kindergarten.

	Q3				Q				Q1				AV
	7G	7B	8G	8B	7G	7B	8G	8B	7G	7B	8G	8B	
	<u>schedule</u>												
NR	32	40	4	22	75	80	41	73	89	88	85	91	60
O					5	11	3	5	11	12		6	4
M													
C	68	60	96	78	20	9	56	22	0	0	15	3	36
	<u>guarantee</u>												
NR	32	57	4	26	93	96	41	67	92	91	70	94	63.5
O					2	4			8	9	4	6	2.5
M													
C	68	43	96	74	5	0	59	33	0	0	26	0	34
	<u>kindergarten</u>												
NR		9		13	7	27	22	58	38	67	96	91	35.5
O					2				8	3		6	1.5
M													
C	100	91	100	87	91	73	78	42	54	30	4	3	63

LEGEND

Horizontal:

Q3 - Upper Quartile 7G - 7th Grade Girl 7B - 7th Grade Boy
 Q - Interquartile Range
 Q1 - Lower Quartile 8G - 8th Grade Girl 8B - 8th Grade Boy

Vertical

NR - Percentage of Total Spellings Misspelled.
 O - Percentage of Total Spellings Omitted.
 M - Percentage of Total Spellings Correctly Spelled but Misunderstood.
 C - Percentage of Total Spellings Correctly Spelled.

12. General Summary of the Spelling Rules Difficulties

Table XXXV shows the amount of difficulty the pupils encountered in spelling the thirty-six words of the spelling test. Upon examination of the Table one can easily determine the great variation of spelling difficulty among the words for each rule as well as among the various sections of each rule - if such exist.

The 'General Rule Average' indicates the spelling difficulty the pupils experienced in spelling the thirty-three words representing the seven rules. The 'R' factor is large (almost fifteen per cent of the total spellings) when it is considered in relation to the other symbol factors of incorrect word spellings. When the 'R' factor is combined with the 'B' factor (12%), the total for the two factors is over twenty-five per cent. Hence, one-fourth of the total spellings of this test was either directly or indirectly influenced by the incorrect application of the seven spelling rules.

In checking each pupil's paper the writer found an inconsistency of 'R' spellings in a large number of test papers. This means that a pupil may have one or two of the words spelled correctly as far as the 'R' factor is concerned but that the other word is misspelled due to the 'R' factor and vice versa. Furthermore, the writer noted that erasures occurred quite frequently. The pupils were not quite certain of the correct spelling of the word. This seems to indicate that the pupils were not spelling the words by using a specific spelling pattern; but instead, they rely almost entirely on the 'chance spelling process'

of the word. Therefore, it is difficult to determine the percentage of the correct spellings of the word which was spelled correctly yet the pupil did not employ the Rule to gain the correct spelling. Lee and Lee state that "the good speller needs little or no teaching anyway."³ It is difficult to determine if the pupils in Q3 (upper quartile) were using the spelling rules to spell the words correctly; however, if one examines the Tables, Checking Procedure for Rule _____", Chapter III, he will discover evidence that some pupils are attempting to spell the words by employing a particular rule.

From the study of each of the Tables pertaining to each of the seven spelling rules as well as Table XXXV, one may logically question the effectiveness of the use of spelling rules in regard to seventh and eighth grade spelling achievement. The spellings for Rule One indicate that the pupils have a small amount of difficulty with the 'R' factor in forming the plural of a singular noun by adding 's' or 'es'. The instruction for the forming of plurals is given very early in the child's schooling. This reason may account for the small 'R' percentage for Rule One. The remaining Rules had a greater percentage of 'R' spellings.

Further examination of Table XXXV reveals that the 'i-e' Rule (Rule Three) is one of the most difficult of the seven rules to master. Rule Seven (retaining or changing the 'y') ranks second in difficulty as far as this study is concerned.

3. Dorris May Lee and Murray J. Lee, op. cit., p. 204.

It must be remembered that the Rule or Section Average is determined by the incorrect spellings of the words selected for this test. If a different set of words is used, it is obvious that the 'Rule Average' will vary with the degree of spelling difficulty for each word. It has been noted that the 'R' factor does not remain constant in a series of word spellings to which a particular rule applies. Thus, the 'R' factor is great for some word spellings while it is almost nil for others.

TABLE XXXV. SPELLING RULES DIFFICULTIES
(GENERAL SUMMARY)

	%R	%NR	%B	%O	%M	%C	AV
			<u>Rule One</u>				
potatoes	1	4	2	.5		92	
taxes	4.5	1.5	.5			94	
services	1.5	14.5	11	1		72	
RULE AVERAGE	2	7	4.5	.5			86

			<u>Rule Two</u>				
supplies	2.5	6	4	.5	.5	86	
companies	14	4.5	6	.5		75	
policies	18	8.5	13	1.5		59	
RULE AVERAGE	11.5	6.5	8	1			73

			<u>Rule Three "A"</u>				
believe	21	1.5	1.5			76	
relieve	21	3.5	3			72	
niece	42.5	.5	7	.5		49	
SECTION AVERAGE	28	2	4				66

			<u>Rule Three "B"</u>				
receive	25.5		2	.5		72	
deceive	33.5	1.5	8	.5		56	
receipt	11.5	27	34			27	
SECTION AVERAGE	23.5	9.5	14.5	.5			52

			<u>Rule Three "C"</u>				
freight	28	1	9	.5		61	
neighboring	2.5	10.5	13.5	1		72	
foreign	12.5	3.5	34.5	.5		49	
SECTION AVERAGE	14.5	5	19	.5			61

			<u>Rule Four "A"</u>				
committed	20.5	12	13.5	.5		53	
referred	31	3	18.5			47	
compelled	16.5	3	16.5	.5		54	
SECTION AVERAGE	22.5	6	16	.5			54

			<u>Rule Four "B"</u>				
benefited	10	35	14	1		40	
profitable	1	12.5	8.5	.5	.5	77	
reference	3.5	21	8	2		66	
SECTION AVERAGE	5	22.5	10	1			61

TABLE XXXV. SPELLING RULES DIFFICULTIES - Cont'd.

	%R	%NR	%B	%O	%M	%C	AV	
		<u>Rule Five</u>						
useless	7	4	5	.5		83		
statement	7.5	.5	1.5			90		
separately	6.5	24.5	38.5	1		29		
RULE AVERAGE	7	10	15	.5			67	

		<u>Rule Six</u>						
practicing	4.5	23	4.5	.5		68		
adorable	4.5	8.5	4.5	1.5		80		
valuable	12.5	18	9.5	1		59		
RULE AVERAGE	7	16.5	6	1			69	

		<u>Rule Seven "A"</u>						
twentieth	13.5	14.5	22	1		49		
hurriedly	3	14	9	.5		73		
happiness	27	8	9.5			55		
SECTION AVERAGE	14.5	12	14.5	.5			59	

		<u>Rule Seven "B"</u>						
journeys	22.5	8.5	19.5	1		48		
delayed	13.5	.5	4			82		
occupying	32	6.5	23	2.5		36		
SECTION AVERAGE	23	5	16	1			55	

		<u>Three Difficult Words</u>						
schedule		62		3		35		
guarantee		68.5		2		30		
kindergarten		38		1.5		61		
SECTION AVERAGE		56		2			42	
* * * * *							*	
GEN RULE AV.	14.5	9.5	12	.5			64	
TOTAL TEST AV.	14.5	13	12	.5			62	

CHAPTER IV

SUPPLEMENTARY FINDINGS

1. Word Difficulty

There are a number of secondary findings that may be found simultaneously with the findings for the primary problem of this study. The individual word difficulty of each word influences the results of this study as would the words that are most commonly used by seventh and eighth grade pupils. For this study the following three phases of "Word Difficulty" will be considered: (1) Word difficulty - general average, (2) comparison of seventh and eighth grade achievement and (3) comparison of boy and girl spelling achievement.

There is disagreement among authors who have made studies of the most commonly used words as used by advanced elementary school children. Since the writer used Thorndike's study to supplement the word selection for the spelling test, Thorndike's findings of the placement of the most commonly used words for the words considered in this study will be shown in Table XXXVI. ¹

2. Word Difficulty - General Average

Table XXXVI shows the word difficulty for each word in the test as determined from the test papers of all the pupils of both the seventh and eighth grades of the graded schools and the rural schools. The

1. Edward L. Thorndike, op. cit., 134 pp.

average for each word extends from six per cent incorrect (potatoes) to seventy-three per cent incorrect (receipt). The total word average of incorrect spellings is thirty-eight per cent - more than one misspelled word for every three words of the test. The pattern varies a bit between the graded schools and the rural schools (a maximum difference of twelve per cent for the word 'separately'); however, the final average is almost identical.

Column "T" of Table XXXVI indicates the frequency of use of the test word by the advanced elementary school children: first one thousand words most frequently used, second one thousand words most frequently used, etc. By examining this column one can determine the approximate frequency of usage for each word as determined by Thorndike's study. It must be noted that this study does not attempt to determine the frequency of word usage of the thirty-six words as used by the pupils who participated in the test.

TABLE XXXVI. WORD DIFFICULTY (General)

		PERCENTAGE CORRECT	PERCENTAGE CORRECT		
	:RULE:	GRADED SCHOOLS :	RURAL SCHOOLS :	: AVERAGE :	T
taxes	1	95	92	94	2nd
potatoes	1	91	93	92	2nd
statement	5	88	93	90	4th
supplies	2	89	83	86	1st
useless	5	86	80	83	3rd
delayed	7	81	82	82	2nd
adorable	6	83	77	80	4th
profitable	4	77	76	77	5th
believe	3	77	75	76	1st
companies	2	78	72	75	1st
hurriedly	7	74	72	73	1st
neighboring	3	75	69	72	1st
receive	3	70	73	72	1st
relieve	3	71	73	72	3rd
services	1	72	71	72	1st
practicing	6	68	67	68	1st
reference	4	64	68	66	5th
compelled	4	61	64	63	3rd
freight	3	64	59	61	3rd
kindergarten	NR	59	63	61	8th
policies	2	59	59	59	3rd
valuable	6	60	58	59	2nd
deceive	3	54	57	56	3rd
happiness	7	57	53	55	2nd
committed	4	49	58	53	3rd
foreign	3	48	49	49	2nd
niece	3	49	49	49	6th
twentieth	7	43	54	49	6th
journeys	7	51	45	48	1st
referred	4	43	51	47	3rd
benefited	4	40	39	40	5th
occupying	7	37	34	36	2nd
schedule	NR	33	36	35	6th
guarantee	NR	25	34	30	5th
separately	5	23	35	29	1st
receipt	3	23	31	27	3rd
TOTAL WORD AVERAGE		62	62	62	

T - Thorndike's Placement of the most commonly used words; 1st one thousand, 2nd one thousand, etc.

3. Comparison of Seventh and Eighth Grade Achievement

Table XXXVII shows the percentage of word difficulty for the seventh and the eighth grades for each type of school surveyed. The seventh grade pupils had a higher percentage of correct spellings for the following five words of the test: niece, benefited, statement, hurriedly and kindergarten. Not one of the five words duplicate the same rule of spelling. It seems to be quite evident that such achievement on the part of the seventh grade pupils is not based on the correct usage of the spelling rules. The combination of several factors may be responsible for this difference of spelling achievement. The final average, however, indicates (for this test) that the eighth grade spelling achievement is approximately ten per cent higher than that of the seventh grade. There are several factors that may account for this difference; however, the additional year of study (or grade level) may be the outstanding factor affecting the average achievement of each grade. This argument is further substantiated upon examination of Table II, page 22. One can readily determine the consistent difference of achievement for each of the four groups of the graded schools and the rural schools. One must note, however, that this study does not compare individual pupil differences of each grade; however, it is obvious that individual differences affect the results obtained by this type of study.

TABLE XXXVII. WORD DIFFICULTY (BY GRADES)

Word	Rule	SEVENTH GRADE		AV	EIGHTH GRADE		AV
		Percentage Correct 7 Graded	7 Rural		Percentage Correct 8 Graded	8 Rural	
potatoes	1	91	92	92	91	94	93
taxes	1	93	89	91	98	95	97
services	1	65	63	64	78	79	79
supplies	2	89	77	83	90	90	90
companies	2	77	62	70	79	82	81
policies	2	48	41	45	70	57	64
believe	3	79	73	76	75	78	77
relieve	3	72	69	71	70	87	79
niece	3	53	55	54	46	44	45
receive	3	60	64	62	78	81	80
deceive	3	44	46	45	65	68	67
receipt	3	22	26	24	25	36	31
freight	3	61	58	60	67	60	64
neighboring	3	74	68	71	76	72	74
foreign	3	34	41	38	62	57	60
committed	4	32	44	38	67	72	70
referred	4	27	31	29	59	71	65
compelled	4	54	46	50	68	71	70
benefited	4	41	44	43	40	34	37
profitable	4	76	71	74	78	81	80
reference	4	51	61	56	73	75	74
useless	5	81	75	78	91	85	88
statement	5	91	92	92	86	95	91
separately	5	26	26	26	41	45	43
practicing	6	62	61	62	73	73	73
adorable	6	80	69	75	86	86	86
valuable	6	50	42	46	71	74	73
twentieth	7	32	55	44	53	54	54
hurriedly	7	83	75	79	64	69	67
happiness	7	48	47	48	67	60	64
journeys	7	43	37	40	59	53	56
delayed	7	80	80	80	81	84	83
occupying	7	38	32	35	37	36	37
schedule	NR	21	26	24	46	45	46
guarantee	NR	13	19	16	38	48	43
kindergarten	NR	62	74	68	57	53	55
TOTAL WORD AVERAGE		57	56	57	68	68	68

4. Comparison of Achievement: Boy and Girl

Upon examining Table XXXVIII one may readily determine the sex differences in regard to the spelling achievement of this test. For each grade the girls were better spellers than the boys by approximately thirteen per cent. No specific explanation can be given for the sex differences of achievement; however, one may consider a number of factors that affect such achievement: (1) the type of words selected for the test, (2) the choice and amount of leisure reading and (3) the degree of 'like' or 'dislike' for the subject.

Examination of the Tables, "Spellings for Rule ___", Chapter III, reveals that the boys have a higher percentage of correct spellings for some words than do the girls. This variation also exists among the quartile deviations of each group. When the final average is considered, however, the girls of each grade have a higher percentage of correct spellings than do the boys.

TABLE XXXVIII. AVERAGE CORRECT SPELLINGS - Group Percentage

GRADED SCHOOLS				RURAL SCHOOLS				TOTAL
7G	7B	8G	8B	7G	7B	8G	8B	AV
63	52	74	61	64	51	75	60	62

LEGEND

7G - 7th Grade Girl 8G - 8th Grade Girl
 7B - 7th Grade Boy 8B - 8th Grade Boy

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

1. Conclusions

The purpose of this study was to determine whether or not spelling rules are an effective aid in seventh and eighth grade spelling achievement. Previously pupils had the opportunity to learn the rules of spelling from the State adopted spellers which were used in the elementary schools.

The authors of the State adopted spelling textbooks have stated just certain spelling rules in the spellers which the pupil may employ as an aid in spelling words correctly. The present adopted speller, The Newlon-Hana Day - by - Day Speller, devotes attention to spelling rule in connection with a lesson of study, whereas, the previously adopted speller, The Modern - Life Speller, merely states the rules on a single page near the end of Book II, Grades V-VIII, inclusive.

In comparing the two textbooks, one may conclude that there is a trend toward the stressing of certain elementary spelling rules in the elementary grades. The Newlon-Hana Speller has selected certain grades in which they first introduce the use of a particular spelling rule.¹ Then repetition of the same rule is made in the succeeding

1. See Chapter II, pp. 11-12.

grade books. However, they do not present a complete pattern of how the particular rule may aid the pupil in spelling words accurately.

From the findings of this investigation the writer concludes that the seventh and eighth grade pupils of elementary schools do not make effective use of the spelling rules while spelling words to which the rules may be applied. Table XXXV shows that approximately one-third of the total incorrect spellings is due to the 'R' factor alone. The 'r' factor, as used in this study, symbolizes the percentage of the total spellings which were misspelled due to the incorrect application of the spelling rules. This means that if the pupils had mastered the spelling rules, the total percentage of correctly spelled words for this study would have been increased at least fifteen per cent.

One also may surmise that if a pupil had learned the base word so that he could correctly apply the rule, the percentage of 'NR' spellings also would be decreased. (The 'NR' symbol indicates that the word was misspelled but the rule was correctly applied). To make the correct application of certain rules, the pupil must necessarily know and understand the base word. Thus, he must know the syllable divisions, the accented syllable, the preceding consonant or the preceding vowel and other essentials of word formation. Hence, one may logically surmise that such training would eventually decrease the percentage of incorrect spellings due to both the 'R' and the 'NR' factors as defined in this study.

2. Recommendations

Many studies have been conducted in an effort to increase the spelling accuracy of elementary school pupils. Intensive study has been given to various related problems that affect spelling accuracy: phonetics, reading ability of the pupil, intelligence quotient of the pupil, individual word difficulty, etc.

In spite of the large amount of research in the field of spelling, the pupils of our elementary schools continue to misspell words which they are asked to spell in a formal test or need to use in the various forms of written communication. Due to individual differences it is quite obvious that a certain percentage of the total words in a word test will be spelled incorrectly by certain pupil. (Six pupils participating in this study missed every word of the test.) However, the problem confronting educators is "How to minimize the percentage of incorrect spellings". Hence, the question arises, "What is the solution?"

The findings of this study are partially inconclusive in that one can not specifically attribute the exact percentage of the total correct spellings to the pupils' correct application of the spelling rules while they were spelling each of the thirty-six words. It is quite evident that many of the words were correctly spelled entirely by 'chance'. Hence, the survey method has its limitations that affect the results of the study and, therefore, limit the making of certain conclusions and recommendations. Further experimental study is necessary to substantiate or discredit the conclusions and recommendations of

this study.

This study, however, has substantiated the writer's ideas regarding the increase of the spelling accuracy of advanced elementary school children. The findings indicate that at present the spelling rules as presented in the State adopted spellers do not prove to be very effective as an aid in seventh and eighth grade spelling achievement. Thus, the writer assumes that general improvement in spelling would be the result of a program which emphasizes and stresses the correct application of the spelling rule to the base word concerned.

A great percentage of the reform program would necessarily have to be carried out by the textbook which the children use. Hence, the writer recommends a reform in textbook organization that will aid the pupil to learn the base word and how to apply correctly the particular spelling rule concerned. This simply means that if spelling rules are to be included in a textbook, certain provisions should be made so that the pupil may master the base word more easily as well as the particular rule (or rules) of spelling concerned.

Louis A. Wilson maintains that "children who are taught how to learn to spell a word make high marks in spelling".² It is the belief of the writer that much of this assistance can be given to the pupils by the textbook that they use for the study of spelling words.

2. Louis A. Wilson, op. cit., p. 101.

Subject 2

January 7, 1947

Dear Sir:

For some time the field of spelling has attracted my attention. While I was teaching in the elementary and secondary schools of this State, I was confronted with the problem of errors of spelling in the classroom. At present I am doing graduate work at Ft. Hays Kansas College. Under the direction of Dr. Robert T. Madrona, head of the Education Department, I wish to make a general intensive study of the common spelling errors of school children of the seventh and eighth grade level only. The generalization obtained will be the basis for my graduate thesis.

APPENDIX

In order to carry out my study, I am in need of your cooperation. If you are willing to permit your school to participate in the study, I will send you the necessary materials later. As far as your school is concerned, this study will take but very little time of the seventh and eighth grade instructor or instructors. The instructor may use the regular spelling period to produce a carefully selected list of only 30 words and immediately return the ungraded test sheets.

If you are willing to cooperate to the extent of having your seventh and eighth grade teachers produce the list of words to the pupils on forms which I will send to you together with return postage and full instructions, I will, I assure you, appreciate your kindness in this matter.

May I hear from you at your earliest convenience by your returning the enclosed postal card?

Sincerely yours,

Exhibit A

January 7, 1947

Dear Sir:

For some time the field of spelling has attracted my attention. While I was teaching in the elementary and secondary schools of this State, I was confronted with the problem of errors of spelling in the classroom. At present I am doing graduate work at Ft. Hays Kansas College. Under the direction of Dr. Robert T. McGrath, Head of the Education Department, I wish to make a general intensive study of the common spelling errors of school children of the seventh and eighth grade level only. The general information received will be the basis for my graduate thesis.

In order to carry out my study, I am in need of your cooperation. If you are willing to permit your school to participate in the study, I will send you the necessary materials later. As far as your school is concerned, this study will take but very little time of the seventh and eighth grade instructor or instructors. The instructor may use the regular spelling period to pronounce a carefully selected list of only 36 words and immediately return the ungraded test sheets.

If you are willing to cooperate to the extent of having your seventh and eighth grade teachers pronounce the list of words to the pupils on forms which I will send to you together with return postage and full instructions, I will, I assure you, appreciate your kindness in this matter.

May I hear from you at your earliest convenience by your returning the enclosed postal card?

Sincerely yours,

Exhibit B

This school is willing to participate in the study.

Yes _____ No _____

The seventh grade enrollment is _____ pupils.

The eighth grade enrollment is _____ pupils.

There are _____ 7th and 8th grade instructors in need of the pronunciation list of words.

Further comment:

City:

Signed.

Exhibit C

March 10, 1947

Dear School Administrator:

I thank you for your affirmative response to assist me with my thesis study. From my previous survey, I am assured a minimum of 1200 pupils participating in this study.

Under separate cover or covers I am sending you the necessary materials for your teachers to conduct the spelling test. I shall try my best to include sufficient return postage. However, if a mistake is made and a shortage exists, please notify me as to the amount due you.

When the teachers have administered the test, will you kindly return the completed forms to me at the above address?

I thank you for your cooperation in this matter.

Sincerely yours,

Exhibit D

Information for the Teacher

This study deals with the problem of spelling errors made by the advanced elementary school pupils. The information obtained from the individual schools will be combined into one general study. Thus, this is a group study and not a study of individual schools.

Personally, I have previous teaching experience; however, at the present time I am doing graduate work at Ft. Hays Kansas State College. Under the direction of Dr. Robert T. McGrath, Head of the Education Department, I am preparing a thesis, a requirement of all graduate students.

Due to my previous experience, I have selected this study. It is my plan to have a minimum of 1200 pupils participating. A test of thirty-six words was designed from the state adopted spelling texts for the seventh and eighth grades. The test is short so not to overburden the pupil; yet the word selection is inclusive for this study.

Due to the circumstances, it is necessary that I ask you to administer the test for me. Previously I have secured the permission of the superintendent to include the school in the study.

In administering the test, give the children sufficient time to write the words. Neat erasures are permissible. It isn't necessary for the child to include his name on his paper; however, the heading on the test blank should be complete. The same test is used for both grades.

May I point out that I will grade the test papers? It is my plan that the teacher administer the test and return the completed forms to the superintendent. Then, when I receive the materials, I will do the rest of the work according to my method of conducting the study.

I sincerely thank you for your assistance and cooperation.

Sincerely,

Exhibit E

Note: (To be read to the Pupils) There are 36 words in this test. I will pronounce the word, read the sentence in which the word is used and then pronounce the word again. After I have pronounced the word the second time, you will be given time to write the word. Write carefully.

1. potatoes Mr. Brown sold ten bushels of potatoes today.
2. believe I believe Jack's thrilling report about the race.
3. receive You will receive the letter tomorrow.
4. freight The freight train will stop for fifteen minutes.
5. supplies The Red Cross rushed supplies to the flooded city.
6. committed The bandit committed the crime in the old house.
7. benefited The sick woman was physically benefited by taking an afternoon nap.
8. useless This old fountain pen is useless.
9. practicing John is practicing basketball this evening.
10. twentieth We are living in the twentieth century.
11. journeys Admiral Byrd has made three journeys to the South Pole.
12. taxes Mr. Black paid his taxes yesterday.
13. relieve This medicine will relieve your pain.
14. schedule A revised bus schedule was published yesterday.
15. deceive Do not permit the salesman to deceive you.
16. neighboring Our class attended a movie in a neighboring town.
17. companies The automobile companies are making more cars.
18. referred In his speech, John referred to the President's statement.
19. profitable At present farming is a profitable enterprise.
20. statement Mr. Jones made a statement that aroused his audience.
21. adorable She is an adorable lady.
22. hurriedly James hurriedly left the room.
23. delayed The train was delayed because of the flood.
24. services The janitor is paid for his services to the school.
25. niece Did you meet your niece at the station?
26. guarantee The company will guarantee this tire for one year.
27. receipt When I paid the bill, the clerk gave me a receipt.
28. foreign Mr. Smith is taking a trip to foreign countries.
29. policies He sold five hundred life insurance policies this year.
30. compelled Bobby's mother compelled him to go to bed.
31. valuable Nancy has a valuable necklace.
32. reference Which book are you using as a reference?
33. separately Each of you will leave the room separately.
34. kindergarten Nancy is attending kindergarten this year.
35. happiness Bob's happiness is a result of his winning the prize.
36. occupying At present Mrs. Black is occupying the room.

Exhibit F

(Grade Boy or Girl) (Age)

(Rural or Graded School) (County)

-
-
- | | |
|-----------|-----------|
| 1. _____ | 19. _____ |
| 2. _____ | 20. _____ |
| 3. _____ | 21. _____ |
| 4. _____ | 22. _____ |
| 5. _____ | 23. _____ |
| 6. _____ | 24. _____ |
| 7. _____ | 25. _____ |
| 8. _____ | 26. _____ |
| 9. _____ | 27. _____ |
| 10. _____ | 28. _____ |
| 11. _____ | 29. _____ |
| 12. _____ | 30. _____ |
| 13. _____ | 31. _____ |
| 14. _____ | 32. _____ |
| 15. _____ | 33. _____ |
| 16. _____ | 34. _____ |
| 17. _____ | 35. _____ |
| 18. _____ | 36. _____ |

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