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A Study of Spelling Errors Made by Milford Second Grade Children During 1966

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A STUDY OF SPELLING ERRORS MADE BY MILFORD SECOND GRADE CHILDREN DURING 1966

by

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Athene S. Roberts

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CHAPTER I

INTRODUCTION

Spelling is the writing of symbols to represent to other people the words and thoughts in the mind of the individual who is writing. Rarely, if ever, does anyone want to write a word which he has not used orally or which he has not heard. The task of spelling correctly is to be sure these symbols are the ones which are accepted and recognized by others (Hanna and Hanna, 1959).

Correct spelling is a necessity, since it is essential to accurate reading, and reading is fundamental to the many forms of silent communication today. In order to read, one must start with symbols (letters) and arrive at the sounds they represent. In order to spell, one must start with the sounds and arrive at the letters or symbols with which those sounds are spelled. Thus, true spelling phonics is the exact opposite of reading phonics. When reading, certain letters or letter combinations represent specific sounds. But, when spelling, no letters guide one--only sounds-- and a given sound might be spelled several different ways. This leads to a natural confusion and, combined with many other factors influencing spelling, affects the struggle for accurate spelling.

While professional writers are able to use a writing vocabulary of many thousands of words, the great majority of adults and children of today carry on most of their writing activities through the use of only a

few hundred words. This small group of words has a relatively high value. These words are used over and over to take care of everyday written work and correspondence. These are the words that should comprise an irreducible core vocabulary and should be learned thoroughly by every pupil, including the slow learner.

Hildreth (1948) summarized s ne portinent studies.

The Rinsland Vocabulary of Elementary School Pupils contains 14,571 words that were used three or more times in 6,012,359 running words in a tabulation for children's writing for all elementary schools grades. Dolch noted that in reading materials in higher grades that 220 words do 50 per-cent of the work and approximately 2,000 words account for over 95 percent of the reading matter in texts. Horn (1924) has shown that a relatively few words with their repetitions make up the large part of the running correspondence of adult writing. In fact, the most commonly used 100 words with their repetitions comprise more than 58 percent of the running correspondence of adults. The most commonly used 1,000 words make up nearly 90 percent, and the most common 2,000 words, comprise 95 percent of the running written correspondence in the writing of adults.

According to Fitzgerald (1938), the ability to use words without error at an early age would seem to have an effect on the growth of the ability to write. Since the basic communication skills are so closely related, spelling assumes a role of importance, and spelling the necessary words with ease is definitely a fundamental skill to be taught well.

Incidental learning is an important consideration in spelling. Children who read extensively and intensively, learn to spell many words in their reading activities. Others do not know or learn many words through the reading process.

Some children who have broad experiences and a strong urge to write require many words for expression of their thoughts. Others do not have such an urgent need for words. Some children know most of the words in a well-selected basic list, but others require a careful, systematic testing and study program to master them (Fitzgerald, 1951).

Statement of Problem

The purpose of this particular study is to attempt to pin-point specific errors, or types of errors, most commonly made by second grade students. It is hypothesized that errors made by the children in a second grade class will not follow a specific nor discernible pattern, nor will there be any specific relationship of errors in the list writing and the free writing.

Objectives

Incidental learning must be utilized, but systematic study must be started where incidental study ceases. It becomes necessary to know what to teach. A study of errors made will point out what to include in teaching.

Fitzgerald (1951, p. 28) supports this theory:

> It should be of value in teaching young children to know those words which are most often used in writing and to know how to spell those which are very often misspelled . . . . The total spelling program requires careful consideration of three basic factors: (1) an adequate basic list of words useful in writing; (2) a method, both direct and informal, effective for learning to spell; and (3) enriched activities which integrate life experiences and school instruction.

Limitations of the Study

1. The study will be limited to one class of second grade children in the Milford Elementary School, at Milford, Utah, in 1966.

2. The study will be restricted to errors made in spelling.

3. The errors will be counted from the Arthur I. Gates (1938) list of 3,876 words. The words used will include all those ranging in difficulty from 1.9 to 2.9 grade placement. The total number of words used within this range on this list will be 320.

The tests are to be given throughout January, 1966, fifty words at a time, and the free writing samples are to be collected during January and April of 1966. The tests on the studied words are to be given in January, 1966, and in April 1966. The two lists of studied words will total 78.

Sources of Data

The primary sources will be the Gates list referred to above, the Second Grade McGraw-Hill spelling book, and free writing samples done as a creative activity. The results of the studied and unstudied list testings will be charted. The following is an example of the table to be used:

1	2	3	4	5
Word	Grade placement	Total misspellings	Percent of misspellings	Most common misspellings
broom	2.4	11	33	boom, bome, brom, room, bume, brume

The total number of running words used and the errors occurring in the free writing samples will be counted, and the percentage of errors will be computed. The most common types of errors and tendencies to error will be noted.

Selection of Participants

All second graders in the Milford Elementary School will be used unless a child enters or leaves during the time period set up. There are to be from 31 to 34 participants.

Organization of the Study

This study will be organized as follows:

Chapter I. PROBLEM. This chapter states the problem and delimits the study.

Chapter II. REVIEW OF LITERATURE. This paper includes a review of the literature related to some investigations in regard to words frequently misspelled.

Chapter III. ANALYSIS OF GATHERED DATA. This chapter charts the errors found in the words given to the second graders from the Gates list and from the formal spelling list of the McGraw-Hill second grade basic speller. It also summarizes the count of the running words, the percentage of the errors, and some of the common misspellings of the free writing samples.

Chapter IV. SUMMARY AND CONCLUSION.

CHAPTER II

REVIEW OF THE LITERATURE

The field contains many studies by many experts, with similarity of results, and some with definite differences in outcome. Many investigations of various kinds concerning errors in spelling have been made, and the results of such studies are definitely controversial, in at least some aspects.

Investigations of these studies can be aided by attempting to discuss them in regard to (1) studies influencing approaches to linguistic spelling, (2) studies dealing mainly with causes of errors, (3) studies attempting primarily to show word difficulty, and (4) studies emphasizing the persistency of spelling errors. Overlap, inconsistencies, and disagreement are to be expected in a listing of many studies by many authorities.

Studies Influencing Approaches to Linguistic Spelling

It has been stated that an apparent need in spelling instruction is the application of the evidence regarding its teaching that has already been produced by research. By the large, this application has not been made (Ernest Horn, 1960). Further, there has been a disappointing amount of significant and new research in recent years (Michael, 1964).

However, "an enduring and sometimes confusing controversy involving leading authorities in spelling continues today. The debate centers on the question of whether competency in spelling can be obtained through a general use of spelling generalizations or not." (Yee, 1966, p. 153) "Some authorities say that the English-American language spelling forms are highly irregular and offer learners and teachers only a confusing and contradictory mass resistant to any broad systematixed set of spelling rules." (Yee, 1966, p. 154)

> One is hardly justified in calling spellings "regular" or in teaching the commonest spellings as principles or generalizations when the exceptions are numbered not merely by the score but by the hundreds. Therefore, . . . spelling by this point of view becomes a gradual accumulation of necessary and practiced words, including the introduction of generalizations whenever warranted by applied research evidences. (Yee, 1966, p. 154)

Ernest Horn, one of the well-known figures in spelling research, supports this point of view. His feelings is evident in his 1919, 1927, 1954, 1957, and 1960 writings.

W. J. Stevens is also a supporter of this way of thinking. He feels that a program of spelling reform would encounter many obstacles. He states, tongue in cheek:

> If we spell as we pronounce, English spelling would become regular and simple; therefore all we have to do is spell as we prounce. The logic is unassailable. Alphabets, societies, government agencies, and individuals have all been "organized" to initiate such reform. Yet our spelling has remained largely unchanged for three centuries. (Stevens, 1965, p. 86)

Stevens list the following as arguments against linguistic reform as an aid to easier spelling:

(1) The present English system is really not very bad. (Reforms are no better--"nite" still has a silent letter, "e".)

(2) The present English system separates homonyms. (He feels this aids in clarification of meaning.)

(3) English makes little use of punctuation for pronunciation. (We have no forms like the umlaut--except for the apostrophe, which gives its share of trouble and more.)

(4) With phonetic spelling we would not only spell the way we pronounce, we might pronounce the way we spell. (Granted that we could all agree on the same pronunciation.)

(5) Previous reforms have not been outstandingly wise. (Changing "re" to "er"; we get "meter", but retain "metrical".)

> The only way to ultimate reform-- if that is what we must have-- will be the infiltration of new spellings as the demand for them becomes overwhelming. Rather than "phonetics" only one thing is really needed to implement this infiltration: the removal of the emphasis we now place on a fixed, "correct" spelling. If Shakespeare could write as he did and still feel free to vary the spelling of his own name, why must we, the slaves of the spelling bee, now place so much weight on "to" versus "too": "their" versus "there"? If we cared less our spelling would improve more. (Stevens, 1965, p. 90)

John Algeo (1965) is discouraged by the lack of enthusiasm greeting spelling reformers. He, himself, is confident that, "our cumbersome system of spelling is here to stay," (Algeo, 1965, p. 211) and this is grieving to him because he feels that English spelling is inherently bad. He bases this feeling upon such facts as the one that a single phoneme can have fourteen different spellings in our present system of writing. Because of this and similar facts, Algeo claims that spelling can hardly be mastered without

more intensive study and prolonged drill than we are willing to give it nowadays. On the other hand, if our spelling were completely alphabetic its learning would not be the chore that it is.

Algeo does agree with Stevens in that both feel some of our present difficulty is the insistence that every word have only one acceptable spelling. This demand is comparatively recent in the thirteen hundred year history of English writing as is supported by Steven's reference above to the example of the writing and spelling habits of Shakespeare (Algeo, 1965) (Stevens, 1965).

Algeo's final conclusion: "The problem is basically a linguistic one rather than a social or pedagogical one and needs to be approached from a linguistic standpoint." (Algeo, 1965, p. 213)

The contrasting point of view by other authorities argues that there is greater phonetic regularity, or sound-to-letter relationship, in spelling than their opponents claim, and that spelling would become more efficient and easier by learning spelling rules for effective spelling ability (Yee, 1966).

Hodges and Rudorf (1965) feel that those involved with the teaching of spelling typically assume that there is little relationship between the way words are said and how they are spelled, so that each word requires a separate act of learning. As a result of this type of thinking, they assert, lists of spelling words for class study have been made with the words being selected largely on the basis of their utility. They claim:

> By relying on phonological cues alone we can spell over 8,300 words correctly from the research list of 17,000 words. Consider this in relation to the typical spelling program for the elementary school which contains some 3,000 words which are in the main to be taught as separate learning acts. (Hodges and Rudorf, 1965, p. 532)

If the spelling program were linguistically-oriented, changes would also have to be made in the means of evaluating children's spelling abilities because what is learned and how this learning is accomplished is, or may be, quite different from that process in a traditional program. The selection of words for this type of program must be those that best exemplify the alphabetic principles underlying the orthography and methods of teaching.

Paul R. and Jean S. Hanna agree with this thinking:

> We know that eight out of the 52 phonemes in the language, according to the phonemicization used in the Stanford research project, are those that cause a large majority of the problems in spelling . . . (Paul R. and Jean S. Hanna, 1959, p. 755)

Hodges and Rudorf concur by making this statement: "The American-English orthography is an alphabetically constructed system for the writing of spoken words." (Hodges and Rudorf, 1965, p. 527-28) But, they also note that each of the phonemes of the spoken code has from one to several graphemes which represent it when spoken words are translated into written form.

Hahn in 1960 and 1964, tested groups who had had formal phonics training and those who had not and found no "statistical difference" between the mean scores of phonics and 'normal' groups.

The controversy over the value of phonics in teaching spelling has continued, with extensive claims being reported concerning the "regular" representation of phonemes. Several recent studies (Petty, Sah, Iowa Spelling Scale) indicate that phonetic rules do not apply to a substantial number of words pupils are called upon to spell, but the position is still prevalent that some teaching of sound-to-letter and letter-to-sound relationship may be a value (Petty, 1964).

However, especially according to Yee, (1966, p. 155) "the preponderance of studies do appear to question the effectiveness of strict phonetic appraoches."

Causes of errors

Professional journals contain many statistical studies which find the causes of bad spelling and list them with much, but not complete duplication. Varying emphasis is placed on different causes, also. Psychological, cultural, and pedagogical sources of causes are given. The causes of poor spelling have also been traced to the curriculum, the materials and methods of instruction, the degree of teacher competence, the home, the community, and the child's ability, interest, or attitude (Algeo, 1965).

The factors designated by Spache (1941) as causal to spelling difficulty cover broad areas. He places them in four categories:

(1) Physical factors

Vision, auditory acuity, auditory discrimination, motor coordination, handwriting, speech, and pronunciation.

(2) Intellectual and tempermental factors

Intelligence, attitudes, interest, and emotions.

(3) Subject matter and achievement

Phonetic skills, phonetic achievement, and vocabulary.

(4) Miscellaneous

Home background, early training, and educational history.

(Spache, 1941, p. 569)

He states that all these factors are considered significant and causal in spelling difficulty -- not just related.

In a research report, prepared by Harold Shane for ASCD in 1955, he states the following:

> Several worders have studied factors which strengthen or adversely influence spelling. Investigators include Spache, Wolff, Mack, Glibert, and Butyon. Among the conclusions they have drawn, according to Shane, are:
>
> (a) Visual defects may or may not characterize poor spellers; vocabulary knowledge may, within limits, be more significant in determining spelling success than the IQ (although there was a .45 correlation between IQ and ability according to Spache), pronunciation, bilingualism, articulation, and possibly changing schools affect spelling.
>
> (b) Failure to apply phonetic principles, poor visual imagery, and faulty pronunciation may be sources of trouble.
>
> (c) There is a high positive relationship between spelling achievement and the following: phonetic ability and visual discrimination. It is less positive between spelling and mental age, and there seems to be no positive

relation and significance with the respect to auditory discrimination.

(d) Good spellers have fewer and shorter eye fixations than do poor ones. Spelling improves as reading improves.

(e) When compared (at the secondary level) no one of three methods of teaching spelling was categorically superior. The methods were: emphasis on a basic list; stress on 7 rules with weekly reviews; and independent lists and contact with a basic list. (Shane, 1955, p. 58)

J. M. Veto (1964) feels that the visual aspects of spelling were of great consequence. He found one of the major causes of misspelling to be an inadequate acquaintance with the visual form of the word. He says that the process of acquiring a visual image of the words to be mastered is one of the major tools employed by the superior speller. The powers of visual imagery of the slow speller are often highly limited. Furness (1958) maintains also that different types of imagery-visual, auditory, and kinesthetic are involved in spelling. She asserts that various perception areas lead to the formation of images, and that facility in calling up mental images of words is a determinant in differentializing between good and poor spellers.

Elizabeth Toohy (1962) claims that many students with spelling difficulties have not learned to "see". Their vision is normal but often they cannot even copy correctly. They write "of" for "on", "when" for "while", "that" for "what", "then" for "than", "their" for "there", and so on. Their fuzzy impressions of words lead to error because of the lack

of correct mental images. Ernest Horn (1924, p. 55) states, "A major cause of misspelling is inadequate acquaintance with the visual forms of the words."

Horn later gives attention to other sensory perception areas. "Sound perception and discrimination are significantly related to spelling ability." (Ernest Horn, 1960, p. 1348) E. Y. Zedler (1956, p. 246) also says, "since written spelling performance and speech-sound discrimination are positively correlated regardless of special training in phonics (or no special training), pupils probably use speech-sound discrimination to help them learn to spell whether they have been training to do so or not." Zedler's study was carried out with second graders and researched with statistical evidence to support the contention that speech-sound discrimination ability are functionally related.

Also mentioned are handwriting abilities. "Deficiencies in the speed or quality of handwriting are commonly listed among the factors that contribute to spelling disability." (Ernest Horn, 1960, p. 1343) In some work done by Loretta Byers (1963) in regard to the influence that the style of handwriting, manuscript or cursive, may have on spelling errors the conclusion was drawn that there was a slight difference, though not significant, favoring the manuscript style in writing so far as spelling accuracy was concerned.

In Algeo's research (1965) he lists some of the difficulties presented to the speller by language-- vagarities in speech and pronunciation.

He points out that language varies from place to place. Such dialect variation will produce misspellings when the student relies on his own pronunciation as a guide to spelling. Language also varies according to social or educational level. However, some pronunciations are substandard everywhere, and should be discouraged to say the least. Language also varies according to the situation in which it is used. There is a difference in our pronunciations in formal, and in normal situations.

Language changes with time. As pronunciation changes, our spelling becomes more and more out of date. (Some interesting examples are "mudder" for "mutter", "idam" for "item", "traiders" for "traitors", and "medal" for "metal".) Correctness is determined by generally accepted usage. "It may not be fair that a man's intelligence, background, and character should be judged from the way he puts letters on paper, but that judgement is often made." (Algeo, 1965, p. 213)

The contention is advanced by Furness (1958) that the relationship between intelligence and spelling ability is much lower than that found between intelligence and most other school subjects. She says that marked differences in degree have been found to exist between bright and dull students in kind as well as in number of spelling errors, the bright showing the greater tendency to err with respect to single letters, the dull with groups of letters. Also, according to Furness, Carroll found that:

> Phonetic generalization is the dominating factor in the psychology of the differences in degree and the kinds of spelling errors made by bright and dull. The

> bright pupil, possessing excellent ability in translating sounds into letters, makes those mistakes which would quite naturally result from the various phonetic qualities of the English language. On the other hand, the dull pupil makes those errors which have little, if any, phonetic foundation. (Carroll, 1958, p. 236)

Spache (1941) feels that the relationship between spelling and mental ability indicates the need for attempting to determine the exact significance of the latter in each case of spelling disability. He also makes observations comparing spelling achievement and phonetic skills.

> When errors are classified as phonetic and non-phonetic, there appears to be a definite tendency for the average spellers to make a greater number and percent of phonetic errors than do the poor spellers. Conversely, there is an equally definite tendency for the poor spellers to make a greater number of non-phonetic errors than do the average spellers. Specific error types in which average spellers may exceed in number or percent to a significant extent are phonetic additions of a single letter or phonetic substitutions for a syllable.
>
> Errors in which a poor speller may exceed the average speller to a significant extent are non-phonetic substitutions for syllable, incomplete and unrecognizable spellings. Although no wholly reliable differences were found in this study there appears to be a strong tendency for average spellers to exceed the poor in number and percent of total additions. Similarly, there is a strong tendency for poor spellers to exceed in number and percent of omission of sounded letters, omission of a syllable, and total non-phonetic conclusions. (Spache, 1941, p. 561)

Russell (1955) states that poor spellers seem to be reliably inferior in such phonetic skills as giving letters for letter sounds, blending letters to form syllables and words, and spelling on -- and two -- syllable non-sense words.

In light of the above research and evidence, it does not seem invalid to conclude that intelligence, phonetic ability, and spelling achievement exhibit an obvious interrelationship.

Attitudes, interests, and emotions play a part in spelling performances. Bohrer tells that among the most common reasons for spelling errors, in and out of school, are carelessness, laziness, and poor study habits. (Bohrer, 1965, p. 85) Furness also lists intellectual inertia and carelessness are probably the most common causes of spelling handicaps, especially among the poor spellers with I. Q.'s. She expresses herself thus:

> Withal, we may say that the psychological determinants of spelling success are imagery, intelligence, interests and emotions, inclinations or tempermental traits, and incentives. By all means, the idea of prompt appraisal of spelling difficulty is supported so the remedial instruction may be utilized before the pupil is psychologically handicapped by the results of failure. (Furness, 1958, p. 238)

R. L. Coard (1957) says that carelessness, haste, and laziness were mentioned most often as causes of misspelling by his classes of college freshman. Some mentioned poor teachers, some a lack of phonetic training, and some emotional blocks. (Hate spelling, or drill, or the association some words had for them.)

A. R. Jensen did a study on the serial-position of errors.

> The distribution of errors according to letter position was found to closely approximate the classical, skewed, bow-shaped, serial-position curve for errors

> generally found in serial rote learning . . . It is suggested that a theory of serial learning and of the serial-position effect may be germane to the psychology of spelling . . . . It is not claimed that spelling errors are solely a function of serial-position. Certainly some words are phonetically more difficult than others, and this factor is undoubtedly a large source of spelling errors . . . Thus, a phonetically difficult element is probably more or less difficult according to its position in the word. (Jensen, 1962, p. 105)

In 1965, B. Y. Kooi and others conducted a similar study. In general, the data of their study confirmed that of Jensen. They also call attention to Hildreth's statement: "The majority of spelling errors occur in vowels in the middle parts of words where they are most irregular. One-fifth of the errors children make in spelling are due to confusion over vowel sounds." (Hildreth, 1955, p. 224) (Of interest also is Hildreth's finding that over one-half of the errors in spelling are due to insertion or omission of silent letters.) Jensen's findings are not only supported, but are shown even more clearly by the revised scoring procedure used in the study made by Kooi. Kooi and his helpers found that the shape of the curve is extremely sensitive to the scoring procedure used, and that their scoring was more controlled than Jensen's as to subjects and procedure.

A study made by Sister M. Roberta Wolff gives some implications of causes of error. This study adds to the sum of information available in regard to errors, because of the material it presents about mechanical errors and the analysis of them in different spelling situations.

> A record was kept of all words misspelled by a fifth-grade class of 35 pupils. A record was kept of all words misspelled in daily, essay-type material, weekly formal lists, and achievement lists at the end of the year. Each misspelled word was analyzed and each kind of error was tabulated. All the types of errors were studied in the light of their contributing causes. The following conclusion was reached: an error was made because of failure to use phonetic principles, because of the application to cases where they did not apply, or because of mechanical errors of expression.
>
> Of the weekly spelling test, more than 50 percent of the errors were non-phonetic; 35.3 percent, phonetic, and the remaining 13.4 percent were mechanical. The achievement test errors were due almost equally to phonetic and non-phonetic errors, mechanical errors representing only a small percent of the errors of this type of material. (Wolf, 1952, p. 460)

In general, some lists by authorities can be given for comparison, of the causes of poor spelling that have been found. R. L. Coard's (1957) college freshman went on to add to the causes given above. Several mentioned the relationship between mispronunciation and faulty spelling. The confusion of similar word forms helps explain the difficulty of a number of words. Homonyms came in for a measure of attention.

Among the causes given less frequently were the language itself. One student wrote: "Part of the fault lies in the language itself. Since the English language has borrowed so many words from other tongues, it is a cause of misspelling." Some students mentioned that reading helped improve spelling "because you saw the words often." Although these conclusions came from college students, they seem no less applicable to other ages.

Betts (1956, p. 230) lists causes of poor spelling:

(1) Limited mental ability
(2) Limited reading ability
(3) Hearing impairments
(4) Visual defects
(5) Faulty listening skills
(6) Poor handwriting
(7) Over-emphasis on phonics
(8) Poor study habits
(9) Inability to judge spelling accuracy
(10) Inability to visualize words.

Furness (1958, p. 237) summarizes broadly possible reasons for children's mistakes in spelling:

(1) Words may be difficult
(2) Method may be inadequate
(3) Pupils may lack proper guidance
(4) Pupils may use ineffective methods of study
(5) Some pupils have not learned to associate sounds and letters.
(6) Others over-emphasize the association in non-phonetic words.
(7) Some pupils may be deficient in some critical aspect
(8) Some mistakes are made adding suffixes
(9) Reversals are common
(10) Some anticipate letters to come
(11) Some do not articulate clearly and are inclined to write as they speak

Bloomer (1956, p. 533) in a study concerned with word length and complexity of variables in spelling difficulty gives some causes of spelling trouble:

(1) The longer the word is the more difficult it is.
(2) Words with double vowels are especially hard.
(3) Words with double consonants seem to be difficult to spell.
(4) Words with hyphens and apostrophes are more difficult to spell
(5) Complex words give much trouble.

In summary, the study of Rudorf in regard to measurement of spelling ability, the lack of which could be interpreted as causes for error, makes some good points (Rudorf, E. H., 1965). He says that previous workers in the field of spelling instruction have identified four factors, besides general intelligence, that affect the ability to spell English words.

These factors are:

1. The ability to spell words that are phonetic.
2. The ability to spell words that involve roots, prefixes, suffixes, and the rules for combining them.
3. The ability to look at a word and reproduce it later.
4. The ability to spell the demons.

> "Linguistically, the first two of these factors represent phonological and morphological components of the orthography. The third ability relates to visual sensory input and the last, somewhat imperfectly, to the "word families" category and to the syntactic level of the model. (Rudorf, 1965, p. 893)

Working to eliminate some of the causes of error discussed in this part of this paper should improve spelling abilities.

Word difficulty

Word difficulty is closely related to any study of spelling errors. Many authorities have given information designating evidence related to the problem associated with word difficulty.

Fitzgerald (1951, p. 161) tells that both Felicitas Neuman and Dorothea McInerny tested children and found common types of errors to include the following: (1) using capital letter when none was needed, (2) the omission of the capital letter, (3) omission of one double letter,

(4) omission of the apostrophe in a possessive, (6) the omission of a hyphen, (7) the addition of a letter, (8) the omission of a silent or other letter, (9) the reversal of letters such as "ie" for "ei", (10) doubling the final consonant in such a word as "until", (11) writing one homonym for another, (12) spelling phonetically non-phonetic words, (13) use of the apostrophe where it was not needed, (14) inclusion of hyphen, and (15) writing nonsensical word forms.

In this work, Neuman tested 200 fifth-grade children with words that gave trouble from second grade on--using 222 words. He also tested sixth graders. McInerny tested 420 seventh and eighth grade children.

W. F. Filling (1960) reports on a study done with second graders at the Lane Elementary School at West Allis, Wisconsin. Pupils' weekly errors were tabulated in order to determine which individual words and weekly word lists presented the greatest difficulty. The study involved 106 different children and four different classrooms. Among 13 pupils, or approximately 12 percent of the 106, the number of errors ranged from four through 18 for the weekly units covering a total of 48 words.

Special remedial instruction as a class (separate for spelling) improved the scores for these children the second time tested. There were a total of 165 errors on the first test and 58 errors on the second test. Many factors played upon this situation. There was no attempt to make it "controlled".

The tabulation of errors for the whole study showed 21 words missed most frequently. Among these, "train" was missed 16 times, "read" 14 times, and "mail", 12 times. "Rain", "has", and "sit" were missed 11 times each, while"pig", "meat", "eat", and "house" were missed 10 times each. Eight errors were found in the spelling of "dog", "fed", "top", "sled", and "ate"; and seven errors were detected in the spelling of "but", "boat", and "as". "Done", "sat", and "run" were misspelled six times each. Difficulty in spelling double vowels is apparent here. Those doing the study state, "We found some words are more difficult for children to spell than others. A preknowledge of the comparative difficulty of words and graded word lists should be helpful in avoiding errors." (Rilling, 1960, p. 497) Furness (1956, p. 238) gives the information that McEwen has classified spelling mistakes thus: (1) wrong vowel in accented syllable; (2) wrong vowel in unaccented syllable; (3) wrong consonant; (4) single consonant where consonant should be doubled; (5) unnecessary letter; (6) letters reversed; (7) vowel omitted; (8) consonant omitted (other than doubling); (9) syllable omitted; and (10) wrong word. Number one and two indicate the difficulty of ascertaining the correct accenting of the vowel sounds; number three draws attention to difficulty of distinguishing between c and s, sh and t, sch and sc, and other consonant blendings; number six shows the difficulty of following the consecutive sounds within a word; numbers seven, eight, and nine also indicate failure to notice proper sound sequence,

or in some cases, failure to recognize the function of the silent letter; and number ten indicates the difficulty found in attempting homonyms.

In 1950, Leslie W. Johnson stated that cooperating school systems in all forty-eight states were asked to submit creative writings of children. All materials were to be the original effort to each child, and free expression. One hundred and ninety-nine school systems contributed the writings of 14,643 children. The papers of each were checked for spelling errors by city and grade levels (3 to 8). All misspelled words were recorded as well as the number of times they were misspelled. The 14,643 children misspelled 7,260 different words.

The following list of words is arranged according to the number of times these words were misspelled. For example, number one, "their" was misspelled the highest number of times of any word, 976 times, and so on down the list to "money" which was misspelled 54 times. This portion of the list is indicative of the work done and should allow some conclusions as to word difficulty.

1. their
2. too
3. there
4. they
5. then
6. until
7. our
8. asked
9. off
10. through
11. you're
12. clothes
13. looked
14. people
15. pretty
16. running
17. believe
18. little
19. things
20. him
21. because
22. thought
23. and
24. beautiful
25. it's
26. went
27. where
28. stopped
29. very
30. morning
31. something
32. named
33. came
34. name
35. tried
36. here
37. many
38. knew
39. with
40. together
41. swimming
42. first
43. were
44. than
45. two
46. know
47. decided
48. friend
49. when
50. let's
51. mother
52. another
53. threw
54. some
55. bought
56. getting
57. going
58. course
59. woman
60. animals
61. its
62. started
63. that's
64. would
65. again
66. heard
67. against
68. received
69. coming
70. to
71. said
72. wanted
73. hear
74. from
75. frightened
76. for
77. February
78. once
79. like
80. they're
81. cousin
82. all right
83. happened
84. didn't
85. always
86. surprise
87. before
88. caught
89. every
90. different
91. interesting
92. sometimes

93. friends
94. children
95. an
96. school
97. jumped
98. around
99. dropped
100. babies
101. money

The studies mentioned so far have pointed out kinds of word difficulty and seem to give support to the conclusions of the following studies made by R. H. Bloomer, Mark Lester, Gertrude Hildreth, and R. A. Rosemier.

Bloomer (1956) concluded that the length of the word, the complexity of the word as a sound pattern, the complexity of the word as a shape pattern, the average grade placement in spelling lists, and the frequency of occurrence in children's writings, in that order, seem to be related to the difficulty of spelling.

Word length is measured by the number of letters in a word. Word complexity is measured in another way. The complexity of the word as a sound pattern is the sum of the judged similarities in shape between the letters (Bloomer, 1956).

In an early study of Mendenhall (1930, p. 654) is found some disagreement with Bloomer's later conclusion. Mendenhall says, "The length of words is only slightly associated with spelling difficulty; difficulty is a function of particular letters (singly or combined) rather than the gross number of letters." But Mendenhall also says earlier in his study, "In words of any length, there is marked increase in the number of errors

errors from the first to the last letter position." He also states, "In words of any length the position of letters with the greatest number of errors is at the center or directly to the right of the center of the word." (p. 648-656)

Bloomer (1964) is more convincing. In a recent study he says:

> In Hull's terms a spelling word is a heterogeneous response chain with terminal reinforcement. The longer such a response chain becomes, the lower the probability that all responses will be correct--accordingly, word length is considered to be related to spelling difficulty. In support of this Ayers found a rank difference correlation of .88 between spelling difficulty and word length and the writer found a correlation of .48 between number of correct spellings and word length for second grade children. (p. 495)

The compilers of spelling lists at the present time seem to have two major variables in mind when they make up their lists. They are concerned with the frequency of occurrence of a word, because frequent words are those children are most likely to use. For much the same reason, these authors are interested in the meaningfulness of words. Children do not learn to spell and they are not likely to use the words they do not understand.

Lester (1964) says it would seem that there are two mutually independent factors which determine whether a word is easy or difficult to spell. The first factor is the frequency ("of" is easy to spell, even though it is the only word in which "f" takes the "v" sound) of the word. The second factor is the regularity of the symbol-sound correspondence. "Sapphire" and "ruby" have roughly the same frequency of occurrence, but "ruby" is not a difficult word to spell because its symbol-sound

correspondences are regular. "Sapphire", however, is difficult because of this lack. W. T. Petty (1957) in a study on phonetic elements as factors of spelling difficulty would disagree:

> Within the limitations of this study sufficient evidence seems to have been obtained to warrant the statement that the representation of individual sounds does not show a specific relationship to the persistence of the spelling difficulty of some words. The evidence seems to give additional support to the belief that is held by many that in learning to spell major dependence must be on learning each word as an individual problem. (p. 211)

In discussing word frequency and phonetic elements, Hildreth (1948) can be mentioned. She claims that difficulty is caused because the English language is orthographically irregular and that the words are not spelled or pronounced with phonetic consistency. There is also another reason why reading and spelling in English are difficult skills to learn. This reason becomes obvious from a study of the frequencies with which different words in the English vocabulary are used in reading and writing material. Dolch and Rinsland have both reported results of word counts in reading material and in children's spelling which show that a relatively small proportion of the words carry the greater proportion of the load in English expression. The largest proportion of words in English are not given much work to do.

On the other hand, Rosemier can be quoted as saying:

> It is suggested some time ago by Horn that little was to be gained by directing children's attention to the

> difficult parts of words or to common errors. One reason for this attitude was created by the lack of a "common error" of significantly great frequency of occurrence. (Rosemier, 1965, p. 312)

Amidst conflicting evidence, Hildreth's statement offers a solution:

> The only valid procedure to follow in judging spelling outcomes is to consider whether or not a pupil can spell words when he needs them or knows how to find the correct spelling of rare words than he has not practiced spelling, or difficult words about which he is not sure. (Hildreth, 1958, p. 156)

Persistency of errors

According to Thomas D. Horn, "children must develop a consciousness of spelling and a conscience for spelling." (Horn, 1958, p. 48) Unfortunately, along with decreased emphasis on spelling, has come a lowering of the prestige value of spelling insofar as pupils are concerned.

The many basic investigations of misspellings also reveal error data on words frequently misspelled by illustrating various types of errors made in writing the frequently misspelled words, and thus demonstrates the persistency of misspelling for children (and adults) in some words. There is a definite distinction between an error and a mistake. A certain type of error regularly produced a variety of different mistakes. Mistakes can be grouped under a relatively small number of errors (Sister Wolff, 1952).

> Gates tested children of New York City by presenting words generally to classes one grade lower than the grade in which the words were formally taught in order to obtain

> a large number of misspellings for analysis. He determined for each of 3,876 words the most common misspellings, the percent of the total errors which the particular misspelling or misspellings represented, the hard spot or hard spots, and percents of total errors which the mistakes on the hard spots constituted. The findings indicated that in 16 percent of the cases, the common misspellings account for from 50 to 100 percent of all misspellings of the word. In 26.8 percent of the cases the common misspellings account for 40 percent or more of all mistakes. (Gates, 1937, p. 10)

Fitzgerald (1959) agrees with these conclusions according to his study of words that are difficult for children in grades II and VI. He states:

> An important pioneer study in the field of spelling errors was made by Jones (1913) who examined 75,000 themes comprising 15,000,000 running words written by 1,050 children in Grades II to VIII. The four worst demons, "which", "their", "there", and "separate" appeared in the second grade list. Jones indicated that of the words giving the most trouble nine-tenths of them appeared again and again as misspellings throughout the grades. Swenson's and Caldwell's (1948) findings show that many spelling errors are made on a comparatively small core of words. Britain (1939) claims that these difficult words form a crucial core because they and their repetitions comprises 61 percent of the running writing basic to the five grade list. (417,156 of the 682,182 running words)
>
> Following are four types of demons misspelled frequently and persistently in the running writing of elementary school children: (1) easy words such as "and" and "the" used frequently: (2) difficult words, such as "friend" and "received" with the confusing "ei" and "ie" combinations: (3) possessives; and (4) homonyms, such as "too", "two", "their", and "there". Persistent spelling mistakes were also made by children in writing contractions and abbreviations.
>
> "Am" and "you" which are thought of as comparatively easy words need more attention in the teaching and learning of spelling. In the Swenson and Caldwell data (1948) "am"

> was used 5,600 times and misspelled 212 times; "you" occurred 17,145 times and was misspelled 561 times. (Gates, 1952, p. 225-226)

David R. Stone states:

> When a series of 1,325 spelling errors in 496 words were classified, 7 percent were omission errors and one percent were additional errors. The most common problem was dropping the silent "e". The next most common problem was the unstressed vowel sound as seen in examples of "e" and "i" . . . Proper pronunciation is the best answer to these spelling errors unless a silent letter is involved. (Stone, 1963, p. 117)

All these findings indicate the importance of a comparatively small core of demons, which, although innocent enough in appearance, give great difficulty to elementary school children in and out of school. Many of these demons are simple words used often and misspelled; sometimes they are difficult words, homonyms, possessives, contractions, and abbreviations. It is obvious that if persistent demons could be taught more effectively than they are at present, and mastered, a considerable percent of misspellings would disappear from the writing of children and adults.

CHAPTER III

CHARTS AND ANALYSIS OF ACTION STUDY

Three types of spelling testing were done throughout the last half of the school year, January to April, 1966, with the second grade children of the Milford Elementary School. The types are listed as follows: (1) studied list testing, (2) unstudied list testing, and (3) free writing testing.

Studied List Testing

These children studied a few words each week from "Basic Goals in Spelling", published by Webster Division of McGraw-Hill Book Company. These words were studied formally. At the end of each week, the children were tested on that week's work, and at the end of each six weeks, they were given a review of the previous five weeks' words. The words charter in this paper include 30 previously studied words given as a test on January 21, 1966, to 32 pupils, and 48 studied words given on April 26, 1966, to 34 pupils. For the first test, 960 words were checked, and for the second test, 1,632 words were checked. The total number of words reviewed was 2,292 and the combined total number of errors was 216. The percentage of errors made on the total of the words studied was 9.4 percent.

The majority of the errors were made by the same small group of children. On the test papers, 66 in all, 17 children spelled all the words

correctly, 14 children missed one word, six missed two words, and seven missed three words while six children missed more than 20 words.

Studied List Test Results, Test I

There are studied words given as a test on January 21, 1966, to second grade pupils at the Milford Elementary School. All the misspellings made by these children in this studied list are given below. There is no special order to the listing of the errors made. The "---" indicates that the child did not attempt a spelling for the word.

Table 1. Studied list test results, test I.

Word	Number of errors	Percent of errors	Common misspellings
1. tree	0	0	None
2. green	0	0	None
3. sleep	2	6.2	slep, keep
4. keep	2	6.2	peep, ---
5. feed	0	0	None
6. see	0	0	None
7. home	1	3.1	hame
8. name	2	6.2	nome, anne

Table 1. Continued.

Word	Number of errors	Percent of errors	Common misspellings
9. time	0	0	None
10. like	0	0	None
11. here	0	0	None
12. hope	2	6.2	hop, hoepe
13. eat	3	9.3	aet, eta, eta
14. ate	2	6.2	aet, ---
15. make	0	0	None
16. made	2	6.2	mabe, make
17. ride	4	12.3	ribe, roid, roid, riad
18. rode	3	9.3	robe, roid, rood
19. meat	4	12.3	met, met, mety, maet
20. boat	0	0	None
21. dear	5	15.6	bere, dere, bear, bear, deat
22. rain	10	31.3	rian, rian, rian, rien, rani, riam, raun, ---, ---, rian
23. mail	10	31.3	mill, mial, mell, male, mlun, meal, mi, meil, mile, malen

Table 1. Continued.

Word	Number of errors	Percent of errors	Common misspellings
24. read	7	21.8	ret, rede, rand, redte, ra 'e, raed, reid
25. be	0	0	None
26. he	0	0	None
27. me	0	0	None
28. go	1	3.1	ge
29. no	0	0	None
30. so	0	0	None

Studied List Test Results, Test II

These are the studied words given as a test on April 26, 1966, to 34 second grade pupils at the Milford Elementary School.

Table 2. Studied list test results, test II.

	Word	Number of errors	Percent of errors	Common misspellings
1.	dinner	6	17.3	dinne, dinnr, drinn dnne, drnne, dienny
2.	water	4	11.7	war, wotr, watr, worther
3.	after	3	8.8	adr, ---, ---,
4.	sister	5	14.5	siti, sestr, sistering, steer, ---
5.	brother	3	8.8	borther, briter, borther
6.	mother	0	0	None
7.	father	0	0	None
8.	over	0	0	None
9.	her	1	2.9	she
10.	with	7	20.6	wite, withe, withe, withef, the, were, ---
11.	other	6	17.3	othery, ---, ---, ---, off, uru

Table 2. Continued.

Word	Number of errors	Percent of errors	Common misspellings
12. their	13	38.2	there (6 times), thire, thery, wheir, thier whtere, ---, ---
13. the	0	0	None
14. this	1	2.9	---, ---, ---, thes
15. they	1	2.9	---,
16. then	1	2.9	---,
17. them	2	5.8	---, vime
18. that	2	5.8	at, thta
19. off	2	5.8	---, ---,
20. blue	4	11.7	blau, boll, ---, buelk
21. dress	3	8.8	briss, dess, derss
22. ball	2	5.8	boll, boll
23. all	0	0	None
24. doll	2	5.8	ball, boll
25. hill	2	5.8	hall, hell
26. will	1	2.9	---,
27. well	2	5.8	will, ---
28. tell	2	5.8	---, ---,

Table 2. Continued.

Word	Number of errors	Percent of errors	Common misspellings
29. who	7	20.6	---, tho, how, how, ---, ---, wowu
30. white	7	20.6	with, ---, withe, wiht, wite, withe, whiti
31. where	12	35.3	were, ---, were, ---, wen, ---, there, whir, wer, ware, ---, wheir, ---
32. when	8	23.3	---, ---, wen, --- whin, wen, ---, winne
33. what	5	14.5	wut, ---, ---, whate, wtat
34. was	4	11.7	---, whis, wus, whus
35. want	4	11.7	went, wont, wont, wnat
36. went	6	17.6	whent, whent, ---, want, we--, wnet
37. were	9	23.5	we--, wre, where, war, ---, ---, shrie, ---, wree
38. we	0	0	None
39. pretty	11	32.4	party, pittey, partty, perty, pritty, prie, praty pertty, petty, partty, pritty

Table 2. Continued.

Word	Number of errors	Percent of errors	Common misspellings
40. happy	1	2.9	happe
41. daddy	0	0	None
42. story	3	8.8	sthoy, store, ---
43. party	13	38.2	praty, praty, porte, perty, pratty, praty, partty, petry, partty, petry, proppty, pretty, prttey
44. candy	1	2.9	---,
45. baby	4	11.7	babby, babby, ---, bady
46. very	9	23.5	---, werer, vrey, vere, ---, ---, ---, ---, var
47. many	5	14.7	manr, ---, maey, meny. ---
48. any	9	23.5	ane, ---, ---, ney, near, ene, an, ---, ine

Unstudied list testing

For the unstudied list testing, the Gates (1937) list of 3,876 basic words was used. Gates gives this list of words a grade placement value, and the words ranging in grade placement from 1.9 to 2.9 were used, making a total of 320 words given to the class for this testing. All the testing was done during January 1966, fifty words at a time, with no previous study. The number of children taking each 50 word test ranged from 31 to 33 children. The total number of words written during the testing was 11,990. From these, 4,372 errors were counted. In the overall testing, the percentage of errors was 36 percent.

The charting of these tests gives the word, the grade placement value, the number of errors, the percentage of errors, and the six most common misspellings for each word. Where there are a number of errors the writer arbitrarily chose to list the first six most commonly made errors in the order of the commonness of their occurrence. If there were not as many as six errors, all errors made for that word were listed. The symbol "---" indicates that a child, or children, did not attempt the word at all.

It can be seen that many phonetic attempts were made even though the spelling was wrong in the final stage. The majority of non-phonetic attempts were made generally by the same children.

The checking of these errors has led to the following generalizations in regard to the spelling, some of which may or may not be, unique to

particular children. In some cases, they are definitely common discoveries made by others.

(1) The omission of the final "e" was usual. For example:

15 out of 25 who spelled "mine", spelled it "min".
8 out of 24 misspelled "more", "mor".
14 children misspelled "rope", by writing "rop".
20 spelled "same" incorrectly with the spelling "sam" appearing 10 times
"Wak" occurred 5 times in 10 errors for "wake".

(2) The omission of the "e" from a final "er" combination was also common:

8 out of 24 misspellings of "never" were given as "nevr".
9 out of 23 misspellings given for "paper" were "papr".
10 of the 20 errors made for "older" were written "oldr".

(3) Many of the errors were due to homonyms. This is not a new discovery.

These children spelled:

ant for aunt,
be for bee,
blew for blue,
by for buy, (Although most children did not write buy for by.)
sent for cent,
here for hear, (Not many wrote hear for here. They repeated here.)
sum for some,
there for their, and (Only a few write their for there.)
too for two.

(4) There were mechanical errors made:

"may" was written with a capital letter.
"it's" for "its" in 9 out of 11 errors.

(5) Middle vowels gave much grief:

"lag" was written for "leg" 10 times out of 20 errors.
"lat" occurred 5 times in 16 errors for "let".

"lit" also was written 5 times in the 16 misspellings for "let".
"mather" was given for "mother" 4 times in 5 errors.
"pin" was written for "pen" 16 times in 21 errors.

(6) Unfamiliarity and lack of use gave difficulty:

"mona" was the misspelling given for "mama" in 10 out of 20 errors. (The children are most likely familiar with the form "Mom".

"popa" was the way of misspelling "papa" in the majority of cases. (A surprising thing about this word is the fact that it was missed 26 times out of 33 tries by this class, and is listed by Gates as a 2.3 grade placement word.)

(7) Miscellaneous:

"sike" appeared 10 times out of 29, for "sick".
"por" was written 12 times in 28 errors for "poor".
"tow" occurred 6 times in 7 errors for the word "two".

The errors made in spelling "having" and "coming" were largely due to leaving in the final "e" of the base word. In spite of this type of error, they added "s" and "ing" endings fairly well. For example, most who could spell "apple", also spelled "apples". However, they seemed to see no relationship between "you" and "your". Almost all of them spelled "you" correctly (all but 4) while 9 missed "your". "Store" and "story" have this same lack of similarity for these second graders. "Store" was missed 16 times, while "story" was missed 27 times.

Almost any vowel would do for them in writing a difficult word. Some used two or three vowels in very short words and used them consecutively in many cases. Some children heard and wrote the consonant sounds well, and in order, but left out the vowels entirely. Then, some

did not seem to hear consonant sounds at all, at least not well enough to write them, especially in order. The popularity of the letter "u" was surprising.

This group has had formal phonetic teaching training in spelling in first and second grades. They were able to spell, in this testing, the "at" family words with few, if any, errors, for example. One of these words, "pat" is placed by Gates as 2.9 on the grade placement scale. This group spelled "pat" with only 2 errors.

The spelling difficulty of different words for these students did not always fit the grade placement assigned to the word by Gates. On some words that he listed as most difficult, such as "pat", they did well, while on others that Gates felt were comparitively easy, such as "papa", they had much trouble.

Analysis of Errors Made by Second Grade Children of the Milford Elementary School, January of 1966. (Using the 1937 Gates List

These words were taken from the Gates list in the 1.9 to 2.9 grade placement range. They were given 50 words at a time throughout the month of January, 1966, to 31, 32, or 33 children.

Table 3. Analysis of errors made by second grade children of Milford Elementary School, January, 1966.

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
					31 papers
1.	after	2.7	26	83.9	aftr, afther, ---, atr, ahtr, aftair
2.	ago	2.9	2	6.4	go, a go
3.	all	2.2	2	6.4	ol, oh
4.	am	2.3	4	12.9	an, a'm, ---
5.	an	2.1	3	9.7	ann, Ann
6.	and	2.3	1	3.2	ad
7.	any	2.9	25	80.6	---, iny, ene, enie, inie, nine
8.	apple	2.4	13	41.9	appl, alppl, alppe, ---, alppy, apal
9.	apples	2.5	14	45.2	apple's (Adding "s" to their wrong spelling to "apple" almost without exception)
10.	are	2.3	6	19.3	out, or, ---, ard
11.	arm	2.9	20	64.5	arem, arme, army, ---, orm, armm
12.	as	2.2	7	22.6	has, ast, ---, ave, is't
13.	ask	2.7	16	51.6	aske, asc, ascy, asck, hask, ---

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
14.	at	2.3	2	6.4	it, ---,
15.	aunt	2.8	28	90.3	ant, annt, aunt, aut, and, aand
16.	away	2.3	8	25.8	aaway, awan, awy, ---, anery, awan
17.	baby	2.3	5	16.1	babby, baddy, dady, cry dedy
18.	back	2.4	16	51.6	backe, bake, baky bak, ---, bank
19.	bad	2.3	6	19.3	bat, bab, bag, bet, ---
20.	ball	2.2	3	9.7	boll, dall
21.	bark	2.6	24	77.4	brak, borck, bake, bork, brk, brck
22.	be	2.4	3	9.7	by, de, ---
23.	bear	2.9	21	67.7	baer, bare, ber, bacr, buare, bar
24.	bed	2.4	1	3.2	bad
25.	bee	2.9	8	25.8	be, bey, bes, ---
26.	been	2.4	26	83.8	ben, bin, bn, ban, bine, ---
27.	bell	2.4	6	19.3	bll, boll, dall
28.	best	2.6	16	51.6	bst, bast, bist, deb, bacd, ---

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
29.	big	2.2	1	3.2	dig
30.	bird	2.7	18	58.0	brid, brd, briad, berd bind, brad
31.	bit	2.8	16	51.6	bet, bat, dit, ---
32.	bite	2.9	19	93.6	bit, bet, bat, biet, bot, bt
33.	black	2.9	19	61.3	back, blak, bake, blck, dake, ---
34.	blue	2.6	11	35.5	blew, bule, bel, blae, blus, ---
35.	boat	2.7	12	38.7	baot, boot, baat, ---, bock
36.	book	2.3	4	12.9	boak, baok, bak, ---
37.	box	2.6	2	6.4	bosx, booy
38.	boy	2.4	1	3.2	box
39.	bring	2.5	21	67.7	---, bren, breg, breing, bing, brring
40.	brought	2.7	31	100	brot, bot, ---, brouht
41.	bug	2.5	13	41.9	but, bue, dug, bugs ---, bat
42.	but	2.4	2	6.4	bat
43.	buy	2.7	22	71.0	by, byy, ---, bay, biu, bey

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
44.	by	2.4	12	38.7	bay, bi, biu, buy biy, bai
45.	cake	2.7	7	22.6	cak, cek, cekes, ---, cakei coky
46.	call	2.4	9	29.0	cal, coll, caln, ---, col, kol
47.	came	2.4	12	38.7	cam, kam, ceme, ---, comn
48.	can	2.3	1	3.2	kand
49.	candy	2.8	17	54.9	cande, candee, candie, ---, canbe, cand
50.	can't	2.9	16	51.6	cant, ---, kant, can
					33 papers
51.	cap	2.4	5	15.1	kap, c-p, ---
52.	car	2.7	2	6.0	cor, cra
53.	cat	2.2	1	3.0	hat
54.	cent	2.9	23	69.7	sent, cint, cet, ---, set
55.	chair	2.9	18	54.5	---, chire, chir, chrie, caihr, caher
56.	cold	2.3	15	45.4	---, clod, colled, kold, colt, col
57.	come	2.4	8	24.2	cum, cume, came, ---, cam

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
58.	coming	2.7	23	69.7	comeing, cuming, cameing, camen, coming
59.	cook	2.9	16	48.5	coke, cuk, coco, ---, kuk, ckook
60.	cooked	2.8	22	66.7	coot, cookt, coked, ckookt, kukt, ---
61.	cookies	2.8	29	87.9	cokes, cookes, cookys, cookings, ---, cookees
62.	cow	2.8	3	9.9	con, caw
63.	cup	2.9	3	9.9	cap, ---
64.	cut	2.5	9	27.3	---, cot, kut, cunt
65.	dark	2.7	25	75.7	drak, drck, ---, bok, dor, dack
66.	day	2.3	2	6.0	bay
67.	dear	2.8	7	21.2	der, bear, diera, bere, danr, deer
68.	did	2.3	5	15.1	ded, ---, bib
69.	dig	2.8	4	12.1	dik, ---, peg
70.	do	2.2	0	0	No errors
71.	does	2.9	32	96.9	dus, ---, dos, dose, duz, dis
72.	dog	2.3	1	3.0	bog

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
73.	doing	2.4	6	18.1	doen, ---
74.	doll	2.4	2	6.0	dol, dall
75.	done	2.6	31	93.9	dun, ---, don
76.	door	2.6	9	27.3	---, dor, doar, dour
77.	doors	2.8	10	30.0	---, dors, doars, dous, door's
78.	dove	2.3	18	54.5	---, duv, duve, duff, duf, duva
79.	down	2.3	6	18.1	---, dorwin, bown
80.	drop	2.7	15	45.4	dorp, ---, drip, drp
81.	dry	2.8	27	81.9	dri, drii, ---, driy, drie, driuy
82.	dug	2.5	18	54.5	---, dag, duk, bug, tig
83.	dust	2.9	18	54.5	---, dusst, dast, dusting, dus
84.	ear	2.9	25	75.7	erc, ---, er, era hir, eroy
85.	eat	2.3	7	21.2	aet, eit, iet, ---, et
86.	egg	2.9	14	42.4	eeg, gge, ---, agg, eggs, aats
87.	ever	2.8	26	78.8	---, evr, evre, evh, avr, evhr

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
88.	every	2.8	30	90.9	---, evry, evey, erey, ery, avre
89.	eye	2.7	30	90.9	---, i, I eae, eai, eie
90.	facc	2.8	30	90.9	---, fas, fes, fase, facs, fuse
91.	fall	2.4	16	48.5	---, foll, ful, fol, full
92.	far	2.7	21	63.6	for, ---, fare, fur
93.	fast	2.6	14	42.4	---, fas, fist
94.	fat	2.3	2	6.0	fall, te
95.	father	2.7	5	15.1	fathers, foher, fo, ftheer
96.	fed	2.8	8	24.2	feed, feet
97.	feed	2.4	7	21.1	fed
98.	feet	2.8	9	27.3	fet, ---, feep, fit
99.	fell	2.8	15	45.4	---, fel, fal, fall, fial, felu
100.	find	2.4	17	51.5	---, fied, fiad, fid, fine, feid
					33 papers
101.	first	2.6	29	87.9	frst, fist, frist, farst, fsit, frsst

Table 3. Continued

	Work	Grade placement	Number of errors	Percentage of errors	Common misspellings
102.	fish	2.6	21	63.6	fise, fech, ---, fiss, frit
103.	five	2.6	10	30.3	fivf, fiva, fivt, fie, fief, fihv
104.	flag	2.7	16	48.5	flac, fleg, flad, ---, fag, flg
105.	fly	2.6	6	18.1	fiie, flii, fli, fiy, ---, fay
106.	foot	2.7	20	60.6	feet, ---, feat, fht, fut, put
107.	for	2.4	2	6.0	fora, firl
108.	from	2.3	16	48.5	form, ---, frum, fom, fram, ftm
109.	fun	2.9	1	3.0	fan
110.	game	2.8	7	21.2	---, gam, daum, gunm
111.	ate	2.4	24	72.7	gat, ---, gaet, daet, gunt, guat
112.	gave	2.3	17	51.5	gav, give, gafe, gaive, gavu, gaf
113.	get	2.3	8	24.2	git, ---, gut, tit
114.	girl	2.5	14	42.4	gril, grl, grle, gat, ---
115.	give	2.1	17	51.5	---, gev, geve, giv, gave, gav

Table 3. Continued

	Work	Grade placement	Number of errors	Percentage of errors	Common misspellings
116.	glad	2.6	14	42.4	---, gad, lad, glit, gaed, lag
117.	go	2.4	0	0	No errors
118.	going	2.4	3	9.9	goen, goivg
119.	good	2.4	8	24.2	---, gud, guty, god, laa
120.	gone	2.6	26	78.8	gon, ---, gan, goon gonu, goen
121.	got	2.6	6	18.1	---, gat, goot, bla
122.	grass	2.9	22	66.7	---gras, gass, grasse, garss, grss
123.	grow	2.8	22	66.7	---, gro, gore, groo, gor, gort
124.	had	2.3	7	21.2	---, hab, bq
125.	hair	2.9	28	84.8	---, har, hia, hier, hare, hear
126.	hand	2.3	9	27.3	had, hnd, hande, haud, ---, hend
127.	hard	2.6	7	21.2	hrd, hord, ---, hr, hrdu, hod
128.	has	2.2	3	9.9	---, hat, hur
129.	hat	2.2	1	3.0	has
130.	have	2.2	9	27.3	hav, haf, hru, han, hevr

Table 3. Continued

	Work	Grade placement	Number of errors	Percentage of errors	Common misspellings
131.	having	2.8	27	81.8	haveing, ---, hafing, hafen, have, haning
132.	hay	2.8	14	42.4	---, ha, hae, hau, haen, han
133.	he	2.2	1	3.0	hen
134.	head	2.7	25	75.7	he, ---, hand, hnad, hend, hied
135.	hear	2.3	28	84.8	here, ---, her, hera, hade, hesr
136.	help	2.9	20	60.6	halp, hlpe, ---, hlep, hple, hepa
137.	her	2.3	10	30.0	he, hr, she, ---, hre, hree
138.	here	2.4	14	42.4	hear, ---, heve, hare, her, hree
139.	hid	2.5	25	75.7	hed, ---, hide, hede, hedu, dh
140.	him	2.2	9	27.3	hem, ---, hmu
141.	his	2.2	8	24.2	hes, ---, has, hia
142.	hit	2.9	8	24.2	het, hia, hei, hid, his, ---
143.	hog	2.8	11	33.3	hag, ---, fag, h-g dag, jog
144.	hold	2.6	17	51.5	---, hold, hald, hol, hled, hood

Table 3. Continued

	Work	Grade placement	Number of errors	Percentage of errors	Common misspellings
145.	hop	2.0	2	6.0	---, hope
146.	home	2.3	4	12.1	houmse, homus, ---, hoan
147.	hot	2.6	2	6.0	hops, ---
148.	house	2.8	9	27.3	houmse, huse, ---, homes
149.	how	2.6	16	48.5	hwo, hoe, ---, haw, hoy, has
150.	I	2.5	1	3.0	i
					32 papers
151.	ice	2.4	5	15.6	ices, I, ---, ics, iels
152.	if	2.2	9	28.6	---, ef, efu, fef
153.	in	2.2	0	0	No errors
154.	is	2.3	0	0	No errors
155.	it	2.3	0	0	No errors
156.	its	2.9	11	34.3	it's, ---, is
157.	keep	2.7	8	25.0	---, cep, keel
158.	kill	2.9	19	59.4	---, kil, kel, keel, kile, cel
159.	last	2.6	8	25.0	---, las, lat, let, laet, late

Table 3. Continued

Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
160. late	2.6	14	43.7	lat, laet, last, lit, laet, latu
161. lay	2.7	14	43.7	laey, ---, la, lae, lauy, latu
162. leg	2.7	20	62.5	lag, ---, laeg, lake, lacu, lade
163. let	2.3	16	50.0	lit, lat, ---, lete, late, luat
164. letter	2.8	25	78.1	---, latr, leter, lettr, liter, later
165. like	2.7	2	6.0	lik, licd
166. lip	2.8	19	59.4	lipe, ---, lep, leip, lit, litd
167. little	2.3	5	15.6	littl, litte, litty
168. live	2.8	9	28.6	---, lev, leve, liva, livle, lifn
169. lost	2.7	12	37.5	---, last, lot, list, lrs, laet
170. made	2.4	2	6.0	make
171. make	2.7	1	3.0	made
172. mama	2.5	24	73.1	moma, ---, mom, mom mamm, mou
173. man	2.4	0	0	No errors
174. many	2.7	20	62.5	---, mene, meny mnay, mne, mane

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
175.	may	2.6	6	18.7	---, mae, mays, mea
176.	me	2.55	1	3.0	my
177.	men	2.8	4	12.3	man, my, meny, ---
178.	milk	2.9	10	31.3	mike, mill, mil, ---, malke, ---
179.	mill	2.8	11	34.3	mil, mel, mile, mell, meu, miln
180.	mine	2.8	29	90.6	min, ---, mind, mien, myn, minb
181.	more	2.8	24	73.1	mor, ---, maer, mour, mar, mory
182.	most	2.67	15	46.8	mot, mos, ---, nost, mst, mote
183.	mother	2.55	5	15.6	mather, miho
184.	much	2.8	25	78.1	---, muj, mah, mut, maack, mush
185.	mud	2.55	15	46.8	mad, mod, ---, mid, mut, mude
186.	muddy	2.8	32	100.0	mudy, mude, ---, mudie, mudey, muding
187.	my	2.4	7	21.9	mi, me, mey, miy, ---, maie
188.	name	2.55	6	18.7	nane,, mame, namy, ---, naer, naem, ---

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
189.	nest	2.8	19	59.3	nast, net, m.t, ---, nust, mest
190.	never	2.67	24	73.1	---, nevr, navr, nefr, nev, nfr
191.	new	2.55	6	18.7	naw, now, ---, news, ne, na
192.	nice	2.9	16	50.0	nis, ---, nic, nish, mist, nise
193.	night	2.8	28	87.5	---, nite, nigth, nigt, nigh, niht
194.	not	2.55	1	3.0	---
195.	now	2.67	9	28.6	---, naw, noi, na, nn
196.	of	2.3	14	43.7	---, fo, ove, ov, off, ovoe
197.	old	2.3	2	6.0	dald, odl
198.	older	2.55	20	62.5	oldr, olded, olddr, oldrey, olds, ---
199.	on	2.6	3	9.9	---, anu
200.	one	2.55	4	12.3	won, oen, wun, ---
					32 papers
201.	only	2.67	27	84.4	---, olny, onley, ownly, onle, onley
202.	our	2.46	18	56.4	---, are, owr, ower, or, ir

Table 3. Continued

Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
203. out	2.3	6	18.7	oet, aot, ot, aowt, ote, ---
204. pan	2.8	5	15.6	pane, paen, paip, pet, ---
205. papa	2.3	26	81.2	popa, ---, popae, pnea, popo, pon
206. paper	2.67	23	71.2	papr, ---, papre, pepr, pap, pappr
207. pat	2.96	2	6.0	cat, ---
208. pig	2.3	2	6.0	big
209. pin	2.55	21	65.6	pen, ---, pane, pnn, pigs, hen
210. play	2.55	2	6.0	paly
211. playing	2.55	6	18.7	palying, palye, plaen, playiny, playen, plays
212. poor	2.96	28	87.5	por, ---, pore, poer, per, pir
213. pot	2.8	7	21.9	pon, pit, pate, pop, paenr, ---
214. rabbit	2.96	12	37.5	raddit, rabbet, raddat, rabbt, ribbt, raddt
215. ran	2.67	0	0	No errors
216. rat	2.3	0	0	No errors

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
217.	reading	2.8	14	43.7	read, reding, rading, rearing, reade, ---, radeing
218.	red	2.96	1	3.0	rad
219.	ride	2.7	4	12.3	rid, rit, ---
220.	right	2.92	30	93.4	rit, rite, ---, rigt, riegt, riet
221.	road	2.67	30	93.4	rode, rod, ---, rold
222.	rode	2.8	10	31.3	rod, roed, rold, dodo, ---
223.	roll	2.92	14	43.7	rol, rool, rold, rall, role, rode
224.	rolled	2.55	19	59.3	rold, rolld, ---, rolle, rod, roolod
225.	room	2.92	12	37.5	rom, ---, rume, roon, rum, rumd
226.	rope	2.8	14	43.7	rop, rold, roope, ---, rip, robe
227.	rose	2.8	20	62.5	---, ros, roos, ross, rosse, roze
228.	round	2.8	27	84.4	---, ronud, rond, rowd, ronde, rud
229.	rub	2.8	21	65.6	rud, ---, rude, rube, rup, rad
230.	run	2.8	1	3.0	rin

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
231.	said	2.55	17	53.1	saed, sed, siad, side, sead, saide
232.	same	2.6	20	62.5	sam, ---, s-m, sim, san, cam
233.	Santa	2.9	20	62.5	---, Stana, canta, sant, sata, sat
234.	Claus	2.9	30	93.4	---, clos, clause, clase, class, close
235.	sat	2.8	1	3.0	sit
236.	say	2.3	15	46.8	sa, saye, saa, saen, ---, sal
237.	school	2.42	14	43.7	shool, scool, scooh, soocl, shcsl, sloo
238.	see	2.3	0	0	No errors
239.	send	2.55	20	62.5	---, sand, snd, sat, snt, saend
240.	sent	2.9	21	65.6	---, sant, sint, snit, seet, sate
241.	she	2.3	2	6.0	---
242.	shoe	2.92	20	62.5	---, show, shou, suw, shase, shes
243.	shoes	2.8	21	65.6	---, show's, shous, suws, shases, shees
244.	shoot	2.8	32	100.0	shut, ---, sot, sute, shot, sote

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
245.	show	2.8	17	53.1	---, sho, sonw, suow, showe, sow
246.	sick	2.8	29	90.6	sike, ---, sek, saik, sich, site
247.	sister	2.8	27	84.4	---, sistr, sist, sis, sisttr, siter
248.	sit	2.55	3	9.3	set, sat
249.	sled	2.6	10	31.3	sleed, side, slede, sedt, slad, seld
250.	sleep	2.6	4	12.3	slep, ---, seap
					33 papers
251.	snow	2.8	16	48.5	sonw, sown, sowe, ---, snwo
252.	some	2.8	19	57.5	sum, ---, som, sume, sam, somn
253.	soon	2.8	21	63.6	---, sone, son, sun, soen, sonu
254.	star	2.9	23	69.7	stor, ---, stre, sru, staer, strae
255.	stay	2.8	25	75.7	stae, ---, sta, staoe, seat, saky
256.	stick	2.8	32	96.9	---, stike, stik, stek, sike, stak
257.	stop	2.8	9	27.3	spot, sotp, sope, sotp, ---, steop

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
258.	store	2.67	16	48.5	stor, stores, story sotr, sote, stroe
259.	story	2.67	27	81.9	store, ---, storeing, stoer, stoy, soce
260.	sun	2.4	0	0	No errors
261.	swing	2.92	23	69.7	---, sing, swaing, suing, suing, sueg
262.	table	2.55	18	54.5	---, tabble, tabl, talbe, tadle, tappl
263.	take	2.55	11	33.3	took, tak, ---, taka, tacke, taik
264.	tall	2.55	7	21.2	---, toll, tol, tol
265.	tell	2.46	10	30.0	till, ---, tall, tll, tal, taell
266.	than	2.92	22	66.7	---, then, tan, thean, fanu, van
267.	that	2.3	8	24.2	---, fat, than, vat, taht
268.	the	2.3	1	3.0	boat
269.	their	2.8	31	93.9	there, ---, these, var, tar, they
270.	them	2.3	14	42.4	---, tham, tem, tame, thom, team
271.	then	2.63	18	54.5	---, than, bin, tane, van, tn

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
272.	there	2.4	30	90.9	ther, ---, theer, ter, tair, var
273.	they	2.3	16	48.5	thay, ---, thau, thae, tha. day
274.	think	2.9	26	78.8	---, tink, tek, thing, theik, ink
275.	this	2.96	22	66.6	---, tise, tu, fis, tss, tis
276.	three	2.3	7	21.2	there, theen, they whree, thee
277.	threw	2.8	32	96.9	---, throw, thow, whew, toyou, whr
278.	till	2.9	24	72.7	---, tell, tel, tile, til, tilu
279.	time	2.8	3	9.9	---, tim
280.	to	2.4	12	36.3	too, two, ---, ot
281.	today	2.55	1	3.0	two
282.	told	2.67	24	72.7	---, toll, tod, tot, toltd, tolde
283.	top	2.8	0	0	No errors
284.	town	2.55	14	42.4	---, ton, tnow, tuwn, topn, towd
285.	tree	2.3	0	0	No errors
286.	trees	2.8	4	12.1	tree's treez, treedrs

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
287.	try	2.8	29	87.9	---, tri, triy, trie, tray, tie
288.	two	2.67	7	21.2	tow, to
289.	under	2.4	27	81.8	---, unber, undre, udaer, undr, runde
290.	up	2.9	1	3.0	a
291.	us	2.4	4	12.1	---, as, use
292.	very	2.9	20	60.6	---, vre, vriy, viree, te, fere
293.	wake	2.9	10	30.3	wak, ---, wait, ac, weke
294.	want	2.9	17	51.5	---, wot, wate, wont, wint, went
295.	warm	2.67	29	87.9	---, wrme, worm, wom wam, womr
296.	was	2.46	12	36.3	wus, ---, wae, wuse, wos, wose
297.	washing	2.96	30	90.9	wasing, ---, wahing, wossing, washeing, wosing
298.	water	2.9	8	24.2	---, wotre, wart, wudr, watr, wotre
299.	way	2.9	15	45.4	---, wae, wahe, awy, wit, wi

Table 3. Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
300.	we	2.46	1	3.0	whie
301.	week	2.67	9	28.6	32 papers weke, wake, weat, weec, weak, wake
302.	well	2.4	16	50.0	---, wall, wel, wil, wale, will
303.	went	2.55	13	40.6	---, want, weat, wale wate, wint
304.	were	2.4	19	59.3	---, there, war, wre, war, wur
305.	what	2.3	11	34.3	---, wut, waht, wan, wat, wot
306.	when	2.42	26	81.2	wen, ---, ween, went, whem, wean
307.	where	2.8	24	73.1	---, were, wer, wear, war, wehr
308.	white	2.8	15	46.8	---, whit, withe, wite, whiet, wirte
309.	who	2.8	15	46.8	---, how, ho, haw ha, wu
310.	why	2.8	21	65.6	---, woi, wi, wiu, way, wie
311.	will	2.4	14	43.7	---, well, wall, wel, weell, wil
312.	wind	2.46	19	59.3	---, wid, wiud, wand, wied, wend

Table 3 . Continued

	Word	Grade placement	Number of errors	Percentage of errors	Common misspellings
313.	winter	2.46	24	73.1	wintre, winder, ---, wier, wet, wite
314.	wish	2.67	22	68.7	---, wise, wihe, wih, wise, wihs
315.	with	2.5	16	50.0	withe, ---, weth, weta, wie, weh
316.	work	2.8	17	53.1	wrok, worke, woke, ---, wroke, wook
317.	year	2.46	21	65.6	---, yer, yeur, yerr, yers, yere
318.	yes	2.8	3	9,3	hes, e, ---
319.	you	2.67	4	12.3	---, yu, yw
320.	your	2.67	9	28.6	---, yru, yr, wro, w, we

In summary, while the findings correspond to grade placement by Gates and others, this particular Milford sampling differed in some respects in that words that were not frequently used and which revealed a large percentage of errors, errors of 80 percent or greater, were words that children did not even attempt to spell. In general four conditions appeared sufficiently to permit the writer to make the following statements:

51 words occurred in the 75% to 100% bracket of errors made.
76 words occurred in the 50% to 75% bracket of errors made.
78 words occurred in the 25% to 50% bracket of errors made.
115 words occurred in the 0% to 25% bracket of errors made.

This pattern of results indicates the accuracy of Gates grade placement assignments for these words in general and probably the normalcy with which these children performed.

Free writing errors

In the free writing errors tests a total of 3,567 words were used by these students in three different writing samples each. From these, 610 errors were counted, resulting in 17.10 percent of the total words spelled incorrectly. The samples were from children's writings in independent and creative activity. Only spelling errors were counted.

Sample of children's creative writing were taken in January and April, 1966. The sample taken on January 12, consisted of 867 running words with 147 errors, for 33 children. This gave 16.95 percent of error. The running words counted for January 18, came to 1,152 with 187 errors, for 34 children. The percentage of error in this case was 16.23 percent. Of the April sampling of writing, the running words totaled 1,548 with 276 errors for 33 children. The percentage of errors was higher. (17.83 percent in April compared with 16.95 and 16.23 percent in the two samples in January.) This higher percentage could be related to the fact that in the latter part of the second grade, children are expanding in their language power and hence are attempting to spell many more words which have become a part of their oral language.

Many of the inaccurate spellings were repetitions of the same word used over and over by the same child. Surprisingly, in most cases, this incorrect spelling was very consistently written each time the child needed the word. This was true even with the children who had the most spelling difficulty. In several instances, however, many of the group used the same misspelling. "Winter was spelled "wintre", "snow" was spelled "sonw" in almost every error, and this spelling carried over to the first part of "snowman". "Friend" is a word they used often, and almost invariably misspelled, but without group consistency. "Easter" was also spelled a number of ways by the group, but each youngster repeated his own spelling of the word.

Lack of capital letters, omission of the final "e", consonant reversals, omission of the second of two consonant beginnings, wrong vowels choices, and difficulty with two unlike vowels appearing together, are the most common causes of, or types of errors found in the free writing of these children.

CHAPTER IV

SUMMARY AND CONCLUSIONS

A summary of the errors made by the second grade children at Milford Elementary School during a 1966 testing period correlates with David R. Stone's feeling that children of second grade age will tend to make specific types of spelling errors. They do not follow a definite pattern as shown by the many misspellings for each word, although general conclusions can be drawn from the data.

Eight findings have been identified by the writer of this study regarding the spelling errors made by a selected group of children. The following factors appear with reference made to previous research for further documentation.

(1) The factors which made a word difficult for these children to spell were: frequency of use, final "e" position, vowel combinations in the medial position, unusual or unphonetic combinations of letters, and homonym.

Bloomer (1956) listed frequency of use as being related to the difficulty in spelling. Lester (1960) also mentions frequency of use. Dolch, Rinsland, and Fitzgerald strongly based the philosophy guiding the compilation of their word lists upon those few words that carry the major burden of use (Hildreth, 1948).

Milford second graders made a large number of final "e" errors. David R. Stone (1963) quoted this as the major cause of student error. Elizabeth Toohy (1962) claimed that children do not "see" words. Veto (1964) and Furness (1958) emphasized the superior speller's use of visual imagery. It is possible that the final "e" is not part of the mental image most children have, and as Ernest Horn (1960) stated, the final "e" was probably not part of the sound perception and discrimination some depend upon for correct spelling.

W. F. Rilling (1960) did a study that pointed out the frequent occurrence of various vowel combinations in words difficult for children to spell. However, long vowel sounds are more troublesome than short vowel sounds in words. Leslie W. Johnson (1950) made a similar study with a word list of words missed most frequently. His graded difficulty list did not include an unusual number of double vowel combination. Milford second grade children made a large percentage of errors of this type in their attempts to spell "mail," "rain", and "read" in the studied list testing.

Unusual or unphonetic combinations of letters were sources of error in studies made by Yee (1966), Hodges (1965) and Rudorf, Algeo (1965), and Hanna (1959) and Hanna. Milford children frequently spelled such simple but completely unphonetic words as "eye", "any", "been", "brought" "threw", and "right" incorrectly.

Homonyms caused a large amount of confused spelling for those tested as mentioned by Fitzgerald (1939). In Johnson's (1959) graded list the first three words are homonyms - "their", "too", and "there". Milford children made many such errors.

(2) Spelling ability, phonetic talent, and general scholastic performance seem to be related for these children.

Furness (1958) felt that the relationship between intelligence and spelling ability was much lower than that found between intelligence and most other school subjects. Russell (1955) stated that poor spellers seem reliably inferior in phonetic skills. Spache (1941) and Carrol (1958) claimed that phonetic generalization was the determining factor in the degree and kind of spelling errors made by the bright and the dull. However, R. L. Coard (1957), Furness (1958) , and Bohrer (1965) definitely felt that attitudes, interests, emotions, intertia, and carelessness also played a part. If these characteristics influenced spelling they most likely also influence performance in other subjects, although not always. This seems true of Milford second grade high achievers, although mental ability testing was done.

(3) Spelling errors which occurred frequently were either the same error repeated by different pupils, or repetitions of an error by the same pupil, or the "demon word" errors. This happened often in the free writing done by the Milford children.

(4) Studying a word lowered the chance of error, at least temporarily. Studied words resulted in much lower error percentage than did unstudied words.

(5) Children who are taught how to learn to spell a words (as opposed to learning incidentally) make higher marks in spelling tests.

Toohy (1962) and Ernest Horn (1924) drew the conclusion that a major cause of misspelling was an inadequate acquaintance with the visual form of the words. If studying a word, therefore, increased the child's immediate visual imagery for that special remedial instruction improved spelling scores for the children involved the second time they were tested. Petty (1964) stated that the position is still prevalent, that some teaching of sound-to-letter and letter-to-sound relationship may be of value in improving spelling scores. This type of teaching is generally included in most spelling manual lesson plans.

(6) Words needed in free writing were somewhat common to all 1966 Milford second graders.

Literature cited does not necessarily support this conclusion except for Algeo's (1965) feeling that dialect variations and social and educational level affect spelling and misspelling. Milford second graders, being from a very small town, with one, or at least two, predominant types of employment for the fathers, and having, in most ways, very similar backgrounds, could be expected to have very similar vocabularies and vocabulary needs.

(7) These children should be taught the words for which they have a felt need before they are taught the less needed ones.

(8) These children have learned to spell incidentally, by a letter-to-sound relationship and phonetic training, and by learning words as separate problems.

That some of these youngsters learned to spell incidentally, or by a letter-sound relationship and phonetic training, can be shown by the fact that one very good speller missed only eight words of the total in the unstudied list, none in the studied list, and only one in the free writing.

A few, with the same type of spelling help (but with even more individual attention), missed more than three-fourths of the words given in this action research.

Several generalizations from the research studies and the writer's study can be made: children's individuality should be recognized; spelling should be taught; spelling vocabularies should be based on need and utility; some spelling is learned incidentally especially if the language arts program as a whole is strong; and, the effectiveness of a spelling program can be gauged by the growth in independence of the learners.

Analyses of errors in spelling offer clues as to the need for further study and improvements of spelling methods, and seemingly suggest factors that cause a major number of errors. Individual differences and cultural changes are important intangibles in spelling.

This study was carried on in one classroom and, therefore, indicates the needs of the particular group. It may or may not be indicative of the needs of similar groups in other localities. The final conclusion of the writer is that success in spelling depends greatly on the employment of correct and pertinent teaching procedures. Knowledge of error analysis should be one of the areas used to guide this more effective teaching.

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