

8-1989

# Invented Spelling : A Study in its Usage to Impact Literacy

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INVENTED SPELLING:  
A STUDY IN ITS USAGE TO IMPACT LITERACY

THESIS

Submitted to the Graduate Committee of the  
Department of Education and Human Development  
State University of New York  
in Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science in Education

by

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August, 1989

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## Abstract

Forty-seven first grade students from a urban school district participated in a study on the use of invented spelling. The program was designed to determine if invented spelling was effective in teaching a list of grade level spelling words and whether it would impact their reading achievement. Eighteen students served as the control group.

Materials included the California Achievement Test Level 10 Form E for the pretest in reading and Level 11 Form E for the posttest. A Core Competency Spelling List for grade one was used in measuring spelling progress.

The study took place for one school year. Twenty-nine students in the treatment group were given daily writing assignments allowing them to use invented spelling. A weekly spelling test included those words from the grade list that were emphasized in writing and reading tasks during the week. The control group was given formal spelling instruction for five words each week, also from the grade list, but chosen at random by the researcher. The Durrell Pre-Reading Phonics Ability Test and the Wepman Auditory Discrimination Test was given to the treatment group.

Results from a series of t tests indicated that giving children the opportunity to use invented spelling had a positive effect on spelling and reading achievement.

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## Chapter I

### Statement of the Problem

#### Purpose

The purpose of this study was to investigate the application of invented spelling in daily writing tasks towards mastery of a list of grade-level spelling words as well as its impact on reading competency.

#### Questions to be Answered

1. Does the use of invented spelling lead to a mastery of words included in a grade-level curriculum without a formal spelling program?
2. Does the use of invented spelling affect word recognition as well as other reading competency skills?

#### Need for the Study

In recent years education has focused on the need to prepare students to become more literate members of society. The report of the Commission on Reading (1985) states: "Reading must be seen as a part of a child's general language development and not as a discrete skill isolated from listening, speaking and

writing (Anderson, Hiebert, Scott and Wildinson, 1985, p.20).

In order to provide the foundation for this, many educators have revamped their views of reading and writing instruction that integrates language arts in a holistic approach. The impetus for using "whole language" also stems from the desire to have students demonstrate competent communication skills in a highly technical, competitive society where people are often judged by how well they read, write and speak. Hodges (1981) states:

Indeed, even though we are often unaware of the process, our personal language habits provide information that others use to form impressions of our educational attainment, our personal standing, and even our intellectual capacities. As a result, helping students to grow in their abilities to use language effectively is one of the most important responsibilities of schools (p. 7).

Hodges further asserts that within this framework spelling is often regarded as a significant factor in measuring one's overall effective use of language. However, the recent surge to incorporate "whole language" approaches with a language arts curriculum has also emphasized the extensive inclusion of student writing tasks at the early primary levels which promotes "invented" spelling.

Most researchers agree that "invented" spelling has a consistency and logic behind its production

(Chomsky, 1976; Hodges, 1981; Read, 19971; Templeton, 1980). The linkage of invented spelling to direct reading instruction is still questioned (Marino, 1981). Chomsky (1976) believes it not only bolsters reading skills but that writing at early levels should actually precede formal reading instruction. Many researchers hold that invented spelling is not a circumvention or undermining of conventional spelling, but, rather a valuable tool in the transition and maintenance of competent spellers in the future (Newman,1985, Read, 1971, Templeton, 1980; Wood, 1982).

While numerous studies cite the justification for using invented spelling to promote reading skills, and to increase writing fluidity and to approach spelling instruction using a more realistic developmental manner, there is a need to further demonstrate the direct effect it has on children's spelling and reading achievement. Parental pressure still rejects the use of invented spelling and there remains confusion over exactly what it encompasses. These point to the need for further investigation.

#### Definition of Terms

Written language - is a process of encoding meaning and using a system of graphic symbols for the purpose of communication.

Phonetics - is the analysis of all the different spoken sounds a human ear can utter.

Phonemics - is the analysis of those speech sounds (phonemes) that make a difference in the meaning of words.

Phonics - is a set of generalizations about the relationship of phonemes (sounds) to graphemes (letters).

Phonology - refers to the sound system of our language.

Invented spelling - a young child's attempt to use letter sounds or other judgemental factors; phonetic spelling of words as heard and pronounced by the child.

Reading - is an active process of constructing meaning from language represented by graphic symbols.

Literacy - acquiring the ability to both comprehend and to produce written text.

Orthography - a written system based on graphemes (complete word, syllable, or speech sounds).

Affrication - a speech sound produced when the breath stream is completely stopped and then released at articulation, the t plus sh sound in clutch or the j sound in judge.

#### Limitations of the Study

Spelling instruction for the control group was given by another teacher under the researcher's

guidance. However, teaching strategies and strengths affect how well children learn and retain skills in spite of approaches.

Two first grade classes (the treatment group) were encouraged to use invented spelling in their daily writing assignments based on basal reading stories and other topics. Dictation of sentences was also used to help with practice of spelling words. While these writing samples were retained and analyzed for fluency and improvement in syntax and grammar for the reasearcher's own class, this would involve a whole new study on the effect of using invented spelling on improving writing proficiency. Another first grade class (the control group) was prompted to use correct spelling when written tasks were given. In addition, they used a formal instructional approach for spelling. Spelling instruction for the treatment group included using the words in writing and word recognition in stories.

While test scores showed a gain in reading scores for the control group, reading is a multi-skilled process involving many different kinds of abilites. Also, teaching strategies and instructional approaches may have been influencing factors when measuring reading achievement levels.

### Summary

This chapter looked at the need to incorporate a developmental spelling program through invented spelling in frequent writing tasks to produce more functional readers and writers. It was proposed that using invented spelling will help lower ability students (the treatment group) improve their spelling and reading achievement levels. A control group was formed using formal spelling instruction and emphasizing correct spelling in students' writing to use as a comparison for the study.

Research has indicated that using invented spelling does impact spelling competency and reading readiness skills.

## Chapter II

### Review of the Literature

#### Purpose

The purpose of this study was to investigate the application of invented spelling towards mastery of a list of grade-level words and to measure its impact on reading competency. Invented spelling is highly correlated with phonetic as well as lexical and orthographic knowledge. The literature will be reviewed with the following three areas as the basis for review and discussion.

#### Learning to spell

Spelling acquisition through whole language

Conventional spelling approaches

Spelling strategies: Current reforms

Spelling and Writing

Spelling and reading

#### Learning to Spell

##### SPELLING AS A PRE-COGNITIVE DEVELOPMENTAL PROCESS

The term "invented" spelling implies it is something incohesive and random that a child uses to express thoughts prior to formal instruction. Wood (1982) states:

Invented spelling derives from a child's ability to hear and isolate the separate speech sounds that comprise words (phonic segmentation) in combination with growing familiarity with letters and the sound they represent (p.709).

Read's study (1971) demonstrated that children bring to school pre-cognitive abilities for discriminating phonemic differences and applying them to "orthographic symbols". "...children distinguish the letter names from the sounds that the letters represent. From the beginning of writing, they use a letter to spell only a certain segment of its name..."(p.24). He explains that invented spelling follows the assertions of English phonology together with how children perceive and organize the spoken forms. In invented spelling the child analyzes letter names with respect to the consonanted and vocalistic nature of each. He further asserts its significance to spelling ability. "It suggests that the children's knowledge of such relationships may be a more important basis for their spelling than the establishment of "habits" through practice" (p.88). The seeming affrications in early spelling are the result of phonetic application often misunderstood by the adult reader. He asserts that:

Considering the abstract nature of children's invented spellings, we find that phonemic accuracy in pedagogical spellings, may be an inappropriate goal. The question is really deeper: which phonetic facts are relevant in the child's own



phonological system as he begins to read and write (p.30)?

It is a supportive environment that enhances the real benefits of using this approach. Bad habits, continued misspellings and a lack of transition to standard spelling are invalid. (Read, 1971; Wood, 1982). Not all research is as supportive, though. Groff (1968) recognized this connection but claims that:

There appears to be a stand-off in the numbers of research findings on the question of whether or not training in phonetics will bring greater spelling achievement (p. 33).

The acquisition of language has been compared to the early attempts at spelling.

The earliest writing efforts, from random scribble to "garble" have a clear parallel in oral language development, in the "babbling" stage of a baby who imitates the purposes, intonations, and sound patterns of speech before recognizing or pronouncing actual words. An understanding of written language, like oral language acquisition, appears to begin with a global awareness, or gestalt, of purpose and nature of representation (Wood, 1982,p.708).

Templeton (1980) labels this implicit word knowledge prior to explicit knowledge or formal reading instruction. He states:

Their implicit knowledge about what words are suggests that, given the proper environment and encouragement, they will be able to 1) conceptualize that print corresponds to spoken language and 2) realize, over a period of time, the orthographic (spelling), phonological, and semantic and syntactic features represented in the structure of words (P.457).

Beers and Henderson (1977) were able to show a progressive development in the use of vowels and morphological endings (-ed,ing). They proposed four stages in spelling acquisition:

- 1) Pre-phonetic--some essential sound features of words not represented (e.g. vowels omitted) but usually correct beginning and/or ending consonants (e.g. MTR-monster; SM-swimming)
- 2) Phonetic--letters used on the basis of sound and letter-name strategy (ATE-eighty, BAD-bed)
- 3) Transitional--awareness of some of the conventions of English orthography (e.g. vowel markers, vowels in every syllable, acceptable letter sequences and rule generalization and over-generalization)
- 4) Correct forms--words spelled conventionally

Gentry (1982) agreed that these spelling stages must be adhered to in the development of single to complex differentiation, concrete to abstract integration and that phonological, visual and morphological elements had to be considered.

Proponents of "whole language" also agree that spelling should be a gradual process. "First, learning to spell is a natural developmental process for children; they naturally evolve systematic strategies for spelling.

Second, the process of learning to spell involves rule generation and hypothesis testing" (Newman, 1985, p.84). Both Read (1971) and Hodges (1981) recognized the multiple stages that spelling entails including visual, phonological, lexical and morphological aspects. Hodges (1981) asserts that language is much more systematic and that spelling is governed by intellectual development as well. Along with this developmental progression theory, there also seems to be the element of risk-taking and usage that facilitates understanding and application of rules.

As they formulate rules for invented spellings and gain confidence in their rules, they begin to generate spellings for words they previously copied...they appear to become less effective spellers as they use their rules to generate spellings for words they had previously copied. They're taking risks (Goodman & Goodman, Smith-Brooks, Meredith, 1987, p.296).

#### Spelling Acquisition Through Whole Language

A classroom that encourages writing and invented spelling provides a strong foundation for the phonetic stage. (Graves; 1983, Wood, 1982). "Writing is productive or generative like speech. Isolating skills from the communicative and expressive uses of language makes them abstract exercises unrelated to the encoding process (Goodman et al., 1987, p.296). Goodman also asserts that "if students write they will read like writers and their reading will have a strong

impact on their writing. There is no doubt that reading has such an impact on spelling development" (p.299). In a 1963 study, he found that students used generalizations to invent or generate spellings but that misspelled words in print could be identified. The promoters of whole language take an entirely different approach as to how spelling should be used and taught in the classroom. Some of these assumptions include the fact that spelling should facilitate communication of written thought not limit it (Chomsky, 1976; Goodman et al., 1987; Graves, 1983; Newman, 1985). Following a tendency to spell only those words they can spell correctly, spelling becomes functional but static. "The pupils only use those words that they are sure they can spell correctly. Consequently, both their writing and their spelling suffer" (Goodman et al., 1987, p.299).

The need for spelling should be kept in proper perspective and taught within the context of student's writing. Goodman feels that there should be no special curriculum or regular lesson sequences. Rather, an instructional approach should include discovering rules for generating invented spelling. In using a whole language approach, spelling strategies must be accrued through students' writing habits. "Ultimately, students who read and write a lot will spell reasonably

well and will know how to check their spellings and standardize them when it's necessary to do so" (Goodman et al., p.302).

The integration of writing and reading in whole language programs focuses on establishing meaningful relations for word recognition.

In most reading programs, for example, letter-sound relationships are taught as if the process were a simple associative-additive one, and in the basal readers whole words are presented one by one and reinforced on schedule in accord with an almost classical conditioning model (Henderson, Estes, Stonecash, 1971, p. 22).

In their 1971 study of 594 1st grade pupils using Language Experience Programs, Henderson et al. found that students word acquisition rate comparable to a basal program. An analysis of misspellings also indicated they were using systematic strategies for word production. Hodges (1981) also felt that, "Spelling instruction should provide children with opportunities to explore the ways in which their knowledge of spoken language relates to writing and how to apply that knowledge to spelling " (p.12). He saw the need to present spelling "holistically" using a multi-sensory approach with daily language experiences and opportunities for self assessment.

Beers and Henderson (1977) felt a systematic approach which incorporated stages should be considered as well in spelling instruction. By examining the

samples of 25 first graders, they concluded that a "hierachy of articulatory features" appeared to be at work and that early spelling strategies were replaced by later ones which reflected an applicaton of phonological knowledge and not simple letter-phoneme association. "As they become more familiar with the structure of written language, they seem to employ lexical or syntactic information when they spell words in sentences" (Beers & Henderson (1977) p. 147). They discuss three levels of spelling acquisition. The first level accounts for the initial substitution of long vowels for short vowels as well as confusion between short and long vowels in the long vowel sequences. At the second level they add orthographic knowledge based on their knowledge that letters are chiefly symbols for sounds. At the third level there is an "increasing cognizance of the relationship between syntactic, phonemic and morphemic constraints as they influence and direct English orthography" (Beers & Henderson, 1977, p.147). Spelling, presented in context at appropriate stages, becomes meaningful and effective (Newman, 1985).

Zutell (1978) points out three factors to consider in spelling acquisition: organization of orthography, the child's concept of the writing system and the manner in which language is acquired. In addition,

Marino (1980) states that, "Thus, by being cognizant of the rules in the orthography, good spellers are able to use prediction skills in determining the most likely spelling" (p.174). Spelling involves a knowledge of graphemic relationships. "...spelling like other psycholinguistic processes, involves the interplay between the structure of language and the linguistic knowledge which the learner brings to that structure" (p. 176). In an analysis of spelling errors, Zutell (1978) found that spelling strategies are developmental in nature which procede from misspelled short vowels, over-generalization of long vowels and confusion with past tense. He linked spelling strategies to cognitive development whereby a form of hypothesis testing occurs when it is taught in context and errors are used as a learning tool. He points out the necessity of students exploring thought and structure in their own writing. The need to communicate will override evaluation of errors more than isolated spelling programs and a subsequent lack of word application. Zutell further points out that an enriched environment also facilitates spelling where students are read to and a variety of word study activities are used.

Cognitive development must also be considered. In a study of first grade vowel spelling strategies, Beers, Beers and Strickland (1980) conclude that:

It is probable that a higher level of abstract thinking is necessary for a child to be able consistently to transform lexical spellings into correctly spelled words logically with regard to unfamiliar words (p.170).

Furthermore, children move through a series of spelling strategies over an extended period of time regardless of instructional classroom techniques. Much of this progression depends on cognitive development, i.e. the need to be in a concrete operational stage for spelling and word recognition to be assimilated. As such, spelling should also not be separated from word recognition skills since it involves learning about words--including syntax and morphemic elements.

#### CONVENTIONAL SPELLING APPROACHES

Spelling acquisition involves a consideration of developmental stages of the child (Piaget), providing ownership of the word used (Graves, 1983) and a recognition of patterns from errors (Henderson, 1977; Read, 1971). It involves active learning--not copying from workbooks (Marino, 1981). Effective programs include using flash cards, frequent writing tasks and teaching general spelling rules as well as regrouping words to demonstrate exceptions. Conventional programs have often side stepped these considerations. Beers



and Beers (1981) point out three misconceptions included in many spelling programs: learning to spell is based on phonic knowledge, learning to spell is based on rote memorization, and a child shouldn't write if he cannot spell.

Phonic application is only part of what spellers use when experimenting with words. In a study of 11 pre-schoolers and 19 kindergarten children, Richgels (1986) found that while alphabet knowledge is related to "invented " spelling ability, metalinguistic awareness of letter sound correspondence was not. He states that Read's (1971) study further demonstrated that "pre-school children with no formal reading or spelling instruction but with knowledge of letter names could spell words of their own choosing. They had invented their own systematic, though non-conventional spelling system which was consistent from child to child" (p.41). Richgels further states that "no one, however, has yet determined what sort of alphabet knowledge or letter/sound awareness is required for invented spelling" (p.42). Beers and Henderson (1977) found in their study that:

Clinical experience has also suggested that the poor speller is not one who is deficient in "phonics," for he typically spells words as they sound, omitting quite often syllables and endings, probably as a consequence of memory overload imposed by such a serial task (p. 134).

It is the need for finding underlying concepts of words that might contribute to classifying and "efficient storage of orthographic elements" (Hodges, 1981).

Hodges states:

As children become more familiar with English spelling, they tend to focus less on individual sound and letter patterns and begin to look at words as units of spelling, the totality of a word giving clues to the spelling of individual sounds (p.26).

Likewise, "rote memorization of weekly spelling lists does not mean that a child understands the principles of spelling" (Beers, Beers, Strickland & Grant, 1977, p.242). They feel that "formal instruction may not be appropriate until children have had ample time to develop an understanding of word attack principles" (p.242). They also found that an over-emphasis on correctness leads to a fear of learning to spell while inhibiting writing as well.

The third misconception, that children should not write if they cannot spell, not only impedes their spelling progression by not allowing experimentation with language but also does an injustice to stifling their early efforts in communicating their ideas. It is through our creativity of writing and its purposefulness that spelling is enhanced. "Increasing audience awareness, and acquisition of sight vocabulary, accompanied by extensive writing, lends

children to effect an easy transition to standard spelling" (Wood, 1982, p.715). Writing promotes spelling. "It is during the act of writing that the rationale and function of spelling becomes most clear to the primary school child (Beers & Beers, 1981, p. 578). In doing so "a child should explore the meaning elements, syntactic function and pronunciation of words. English spelling is controlled by all three of these functions and not just pronunciation" (p. 579).

#### SPELLING STRATEGIES: CURRENT REFORMS

There is a need to revise our understanding of how spelling can be effectively taught in a curriculum that promotes literacy and language development. "Our understanding of the thinking processes by which children reconstruct the orthography of a language has been advanced by the study of children's invented spellings" (Downing, DeStefano, Rich, & Bell, 1984, p.185). Lutz (1986) proposes the use of spelling games, exploring letter sounds, manipulating letters to form words, alphabetizing, building words and using dictionaries. Selection of spelling words should be from various sources including student's writing and lists such as the New Iowa Spelling Scale (Marino, 1980). Marino suggests using strategic games that involve prediction. "By focusing on activities which stress predictive skills, probable letter combinations

and positional constraints, the speller is helped to come to view the English orthography as reasonable, consistent and systematic" (p. 176). In addition to using active learning modes, Marino (1971) also stresses "providing instruction which is individualized, focused and relevant" (p. 571).

Zutell (1978) advises that children should be encouraged to spell the best way they can. Read (1971) and Chomsky (1976) also found no difficulty or impediments to allowing invented spelling and making a transition to corrected forms later on. Zutell (1978) also proposes avoiding the term "sound it out" when encouraging this type of spelling, to show corrected forms next to the words and to teach patterns as they are being used. Spelling instruction should be presented not by including memorizing lists of words or sounding them out, but rather by providing opportunities to read, write, test, evaluate and revise. In contrast, conventional approaches have focused on two main methods--teaching a set of rules assuming that they will produce accurate spelling and selecting words in patterns to demonstrate these rules. These rules also tend to parallel the focus in the basal reading program, and study routines involve sight, sound and feel methods. "Pupils look at words, shut their eyes and trace the word in the air or write it to get its

kinesthetic feel (Goodman et al., 1987, p.300). They point out, however that the diversity of rules makes this ineffective while teaching spelling in context is highly retainable.

The lack of dependability of rules does cause problems for readers who are sampling and predicting in order to construct meaning...and it makes learning the spelling system different from other language learning (Goodman et al.,1987 p. 295).

Researchers have come to realize the importance writing plays in achieving this learning. Language learning is a matter of learning a finite set of rules; writing increases the acquisition of the spelling system. Spelling is difficult as many words are inconsistent with rules which employ frequent exceptions (Goodman et al.,1987). They feel there are detriments to over-explaining these rules.

Often they go through a period of being inhibited in using their rules to invent spellings and insistent on being told the correct spelling. This makes for a developmental spiral in the spelling pupils use in their early writing efforts. At the point where they discover or someone points out, that there are "correct" spellings, they may misspell fewer words, but they are also likely to be more reluctant to write (p. 296).

Furthermore, they state that spelling rules compound the problem. They advise that only if the students treat the rules as tentative and as part of their own creative efforts will they avoid such inhibitions that can lead to chronic misspelling. Lutz (1986) feels

that teachers must be encouraged to relate spelling to purposeful writing rather than conduct ruled based instruction or to rely on memorization. Lutz feels that students' use of invented spelling must be viewed as opportunities for them to actively participate in their own learning.

## II. SPELLING AND WRITING

"Since spelling is useful only in writing, a plan for spelling improvement must concern itself with the content and motivation of written composition" (Durrell, 1976, p.8). He emphasizes that incorrect spellings do not lead to future bad habits and, as such, teachers should avoid an overemphasis on correction, mechanics and memorization since these tend to be not only ineffective in spelling achievement but counterproductive in their writing.

Lutz (1986) states that:

Early emphasis on mechanical aspects of spelling inhibits developmental growth. When frequent purposeful writing takes precedence, adherence to the rules is secondary. The teacher in no sense abandons expectations for correctness. Rather, correctness is nurtured more effectively through knowledge of the pupils level of development (p. 3).

Lutz feels it is the application of spelling knowledge (through writing) that leads to competency. A study by Hahn (1964) showed that, "Language expressions in

meaningful written structures contributed most to spelling success" (p. 385).

The development of ideation is fostered in a receptive environment devoid of the inhibitions that the mechanics of writing can cause (Durrell, 1976; Goodman et al., 1987; Lancaster, Nelson & Morris, 1982). "Attention to word or sentence structure is often counter-productive to language; if you want to destroy an idea, call attention to errors in pronunciation, spelling or grammar" (Durrell, p. 7.). The use of spelling to facilitate communication is the target of a non-threatening program. "Spelling is not an end in itself. It is merely a mechanical process that contributes to early communication via writing" (Johnson, Langford & Quorn, 1981, p. 582). Spelling should grow out of an active writing program. As oral language is preceded by a "babbling" stage (Wood, 1982), so, too, the transition of the spoken word to print must be allowed to be practiced through use and "creative play" (Graves, 1983).

### III. SPELLING AND READING

The use of separate programs to teach spelling and writing is becoming more obsolete in the light of current research that views spelling as part of the writing program and writing as a necessary prelude to reading readiness (Chomsky, 1976). Chomsky sees

writing as not only an embellishment to language development, but a precursor to formal reading experiences. An obvious outgrowth of invented spelling is the usage of the alphabet in the "pre-phonetic" stage of spelling development. "Being able to spell and read depends to the same degree on knowledge of the alphabet, awareness of letters as separate and unique concepts, and the use of sound-letter correspondences" (Richgels, 1986, p. 43). In his study he suggests that actual "spelling" at early stages is invented much like active "reading" is to word recognition. However, knowledge of the alphabet is a useful tool. "It seems logical that raising such discrimination to a conscious level...is related to learning to spell and read" (p.47). Richgels found that, "Invented spelling, besides being a good means for them to explore written language--is a good indicator of both expressive and receptive written language abilities" (p.47).

Phonics alone, however, does not increase spelling or reading ability (Hahn, 1964). This was demonstrated in Read's (1971) study as well as characterized in Beers and Henderson's stages of spelling development.

Evidently a child may come to school with knowledge of some phonological categories and relations; without conscious awareness he may seek to relate English spelling to these in some systematic way. If this inference is correct,



some long-neglected questions turn out to be crucial for understanding and facilitating the process of learning to read (Read, 1971, p.32-33).

He suggests that an exploration of the level of phonological analysis shows that children enter a different developmental stages in relating lexical representation which mirrors standard spelling. This can contribute to our understanding of how reading instruction can build on the sound-system relationship of language. The submergence of phonic instruction in many current reading programs is evidence of this realization. It is not the application of phonological rules that accounts for their spelling, but their phonetic relation (Read,1971).

Besides the explanation of phonic and phonetic relations that non-standard spelling provides for reading instruction, it has been proposed that systematic errors also lead to word recognition (Henderson, Estes & Stonecash, 1971-72). They state that, "The misspellings of the beginning reader, who is permitted to write according to his best judgement, do seem to provide information about his general knowledge of word form " (p.30). Wood (1982) cites Clay's 1975 appraisal. Clay felt that writing contributes to the accuracy of visual inspection or words, letter-sounds, letter segmentations and promotes visual memory for spelling. However, Wood does not

feel that writing alone using invented spellings is sufficient for reading standard English which includes structural, semantic and syntactic units. Wood believes that the non-reader finds it easier to encode than decode words and challenges Chomsky's "new method" of teaching reading. "Chomsky conjectures that the initial feeling of control of print as a creative medium positively influences children's self-concept, attitude and motivation toward the world of print" (Wood, 1982 p. 715).

Chomsky, however, feels there is a missing link between spelling and the abstract linguistic level to which it corresponds. Furthermore, using correct pronunciation for word identification implies a knowledge of the language. Spelling is an active-interactive process that utilizes this cognitive ability.

The Language Experience Approach to reading is, of course, motivated by these same principles with regard to reading. However, the invented spellers are expected to write first, independent of whether they can read back what they have written (Chomsky, 1976, p.25).

She feels it is the initiative and self-reliance developed through spelling and writing that transfers to reading skills. The creativity in early spelling also facilitates reading readiness. The writer comes

to view reading as more than words but as an expression of ideas. Pronunciation, alone, does not provide for this. While language to print may be fostered by pronunciation, the reverse of print to language for reading is not the case. In writing the reader comes to know and uses words, learns the understanding of print and encodes meaning with lexical symbols.

The invented spellers, during the months they engage in their writing activities, are providing themselves with excellent and valuable practice in phonetic, word analysis and synthesis, and letter-sound correspondences. In addition, they are experiencing a sense of control over the printed word. There is an independence that is gained with the print, and a sense that print-sound relationships are something that one works out for oneself. This practice and this attitude will serve them well when it comes time to read (Chomsky, p. 9).

It is this control over the printed word that promotes the child's readiness for approaching reading instruction.

Templeton (1980) describes implicit word knowledge that a child using invented spelling applies as "developmental experimentation". "Implicit" is the graphic representation of words; "explicit" is the formal characteristics of words given in reading instruction that implies words are "out there" as a separate entity that name things. He draws a parallel between language acquisition and the development of implicit word knowledge. Invented spelling fosters the

relation of how print corresponds to spoken language. The orthography, phonology, semantic and syntactic features are constantly analyzed in the structure of words. He contends that alphabet knowledge and creating a "metalinguistic awareness," by surrounding the child with print, contributes to "word-ness" and categorizing. Templeton argues that "invented" is a "romantic metaphorism" when applied to children's efforts at early writing since he does not "invent" words or haphazardly apply grapho-phonemics.

Morris (1983) confirms this link that spelling provides to reading by "mapping" spoken words to written ones; building a phonemic awareness that is necessary to initial reading. His study, with first graders during the first month of school, analyzes word and phoneme awareness tasks. "Correlational analysis again revealed a significant relationship between first graders' concept of word in text and their ability to represent phoneme segments in their spellings (p.366).

Similar results were found in a study by Juel, Griffin & Gough (1986) which showed a strong relationship between spelling and word recognition in that both skills appear to rely on similar sources of knowledge. Decoding and spelling seem to have a common denominator (spelling-sound correspondence rules).

This "orthographic cipher" also requires lexical knowledge through exposure to print.

We suggest that the relatively poor reading achievement of minority students is partly attributable to poorer phonemic awareness of English due to dialect and second language differences (p. 245).

Phonemic awareness is controlled by ethnicity, IQ and language development and provides a strong indicator of literacy acquisition. Their study found writing to be dominated by spelling ability, reading comprehension and word recognition skills at the first grade level. But that reading and writing does not involve the same cognition skills later on where creativity and organization of ideas are more significant.

Writing and spelling also enhances reading skills by increasing vocabulary beyond phonic associations. Spelling programs emphasizing phonics, word structures and rules do not lead to a skill transference in writing. The impetus of instruction should be to provide a better groundwork for word power. "The major purpose of a spelling program should be to increase the power, precision, and color of written expression; correct spelling is subordinate to vocabulary growth" (Durrell, 1976, p.6). Zutell (1978) also contends that "reading, vocabulary development and spelling are interrelated and mutually facilitating components of a complete language arts program" (p.848).

Piaget felt that a child can only learn that for which he is developmentally prepared. It is his curiosity and interaction with the environment that provides the impetus for meaningful learning to take place. Piaget (1972), as cited in (Chomsky, 1976, p. 10) states, "In order for a child to understand something he must construct it himself; he must re-invent it." Chomsky concluded that it is the power that a child experiences over his writing and spelling that fosters risk-taking and self assurance as reading and language development progresses.

#### Summary

This chapter explored three approaches for studying how spelling acquisition occurs and is implemented in the classroom. First, it considered how spelling, from a whole language approach, employs invented spellings to enhance writing and reading. Second, the conventional approaches to spelling were reviewed and examined for effectiveness. Third, current reform strategies in spelling were explored that used invented spelling and other instructional strategies to bolster competency.

Invented spelling also has a significant impact on writing proficiency and attainment of grade-level spelling competence while considering appropriate

developmental stages. The relationship of invented spelling to reading strategies was presented from various educational philosophies. While some research contends that writing is a requisite for reading instruction, others acknowledge the linkage but often disagree as to its exact correlation and how it should be used.

Efforts are continuing to improve reading programs, and ultimately reading scores, by promoting integrated language arts using a literary-based approach. There is still, however, a significant skepticism that requires justification for using invented spelling for literacy enhancement as well as deviating from conventional spelling programs.

## Chapter III

### The Research Design

The purpose of this study was to examine the use of invented spelling towards spelling mastery and reading achievement levels. Informal spelling instruction through daily writing assignments emphasizing invented spelling was given to two lower ability first grade classes (the treatment group). A third higher ability first grade class acted as the control group and received formal weekly spelling instruction using the methods outlined in a language arts curriculum guide.

### Hypotheses

It is expected that achievement will be made from pretest to posttest in reading and spelling, both with using invented spelling and with formal spelling instruction. It is probable that more progress will be made by the group receiving an emphasis on invented spelling and given more writing tasks (although the difference may not be significant).

The following null hypotheses were investigated in this study:

1. There will be no statistically significant difference between the mean posttest spelling



scores of the control group and the mean posttest scores of the treatment group.

2. There will be no statistically significant difference between the mean posttest reading scores of the control group and the mean posttest scores of the treatment group.

The significance of the difference between two independent group means (Group A--treatment and Group B--control) was tested using independent  $t$  tests and testing was done in the null form at the 99.9% confidence level ( $p \leq .001$ ).

### Methodology

#### Subjects

Forty-seven first grade students from an urban city school district were the subjects for the investigation. The classes were previously grouped at the beginning of the school year into high, average and low ability. The researcher chose to use the highest ability group as the control since the design of the study was to measure the impact of invented spelling on spelling and reading achievement. It was felt that the lower ability groups would benefit most.

Eighteen students were placed in the control group and twenty nine students comprised the treatment group.

#### Instruments

The scaled scores for total reading of the California Achievement Test, Level 11, Form E were used for pretesting and posttesting reading progress. A random selection of 25 words from the district's Core Competency Spelling List was used for the pretest and posttest in spelling achievement.

Additional variables ,phonic knowledge and auditory discrimination, other than those tested in the null hypotheses were investigated. The Durrell Pre-reading Phonics Ability Test was administered to the treatment group. The control group was not given the test as it had already scored high on Houghton-Mifflin Diagnostic Reading Test (which is similar in testing letter-recognition and letter-sounds) at the end of kindergarten prior to being grouped. Also, the significance of the pre-reading skills tested was more applicable for the treatment group using invented spelling. A researcher-designed test of 15 phonically predictable words and 15 nonsense words was given to the control and the treatment group to determine differences between the groups in letter-sound knowledge. In order to further investigate whether the students in the treatment group were able to discriminate letter sounds, the Wepman Auditory Discrimination Test was administered.

These tests were done on the treatment group since research has indicated invented spelling relies on phonic discrimination of sounds and letters.

### Procedures

The study took place for one school year. A  $t$  test of independent means was run in the pretest spelling and reading scores of the treatment and control groups. No significant differences were found. Spelling instruction from a grade level list of 86 words was conducted through writing alone to the treatment group. The treatment group consisted of two first grade classes (the average group was taught by another teacher and the lowest group was taught by the researcher). Formal spelling instruction was given to the control group by presenting a group of 5 words each week (chosen by the researcher), pretested, presented by word analysis and the look-say method, and posttested at the end of the week. The treatment group was also given a spelling test of 5 words each week from the same district spelling list. These words were chosen by the frequency encountered in their reading stories and in current writing tasks.

The reading scores from the Houghton-Mifflin Test of Basic Reading Skills were obtained for all three groups at the end of scheduled reading selections and

analyzed for mastery of word recognition between the control and the treatment group.

### Summary

Forty-seven students from three first grade classes in a urban school district were given a pretest in spelling of 25 words from the district's spelling list of 86 words found in the Ginn Language Book.

Two groups were formed. The highest ability class acted as the control group and received formal spelling instruction for these words throughout the year. The other two classes formed the treatment group and were taught spelling only through daily writing tasks emphasizing invented spelling. Students were told to spell the word the best way they could but not to sound it out.

A posttest in spelling was given to both groups in June to determine a change in spelling competency. Additionally, the reading section of the California Achievement Test, Level 11, Form E which was administered in May was used as a posttest to measure reading progress.

## Chapter IV

### Analysis of Data

#### Purpose

The purpose of this study was to examine the application of invented spelling on first graders' spelling and reading scores. Two first grade classes (the treatment group) were given the opportunity to do daily writing tasks and were encouraged to spell the best way they could. The correct spelling was later written above the word, but the students were not asked to recopy work unless it was part of a published book. One first grade class (the control group) was given formal spelling instruction with limited writing assignments in which students were prompted to spell words correctly.

#### Analysis of the Data

Having determined that there was no statistically significant difference ( $p \leq .001$ ) between the mean pretest scores in reading and spelling for the treatment and control group, the mean posttest spelling and reading scores were calculated for the treatment and the control group.

A restatement of hypothesis one is as follows:

1. There will be no statistically significant difference between the mean posttest spelling scores of the treatment group and the mean posttest spelling scores of the control group.

A  $t$  test for the difference between the two independent means was used to compare the mean spelling scores of the posttest of the treatment group and the posttest of the control group. A calculated  $t$  score of 1.907 was obtained. Since the critical value of  $t$  for 45 degrees of freedom, unbiased, at the 99.9% is  $\pm 3.46$  and since the  $t$  obtained was 1.907, the null hypothesis is retained and it is concluded that there was no statistically significant difference between the means of the raw scores for the treatment and control group at the posttest level.

Table 1

$t$  Test of Difference Between Posttest Spelling Scores of the Treatment Group and the Control Group

	df	$\bar{X}$	s.d.	t
Treatment Group	45	89.66	14.16	1.907
Control Group	45	96.22	4.22	1.907

t  
critical =  $\pm 3.46$   $p \leq .001$

A restatement of hypothesis two is as follows:

2. There will be no statistically significant difference between the mean posttest reading scores of the treatment group and the mean posttest reading scores of the control group.

A  $t$  test for the difference between two independent means was used, comparing the posttest of the treatment group and the posttest of the control group. A calculated  $t$  score of  $-0.306$  was obtained. Since the critical value of  $t$  for 45 degrees of freedom, unbiased, at the 99.9% confidence level is  $\pm 3.460$  and since the  $t$  obtained was  $-0.306$ , the null hypothesis is retained and it is concluded that there was no statistically significant difference between the means of the raw scores in reading for the treatment and control group at the posttest level.

Table 2

$t$  Test of Difference Between Posttest Reading Scores of the Treatment Group and the Control Group

	df	$\bar{X}$	s.d.	t
Treatment Group	45	533.66	66.25	-0.306
Control Group	45	528.28	42.94	-0.306

t

critical =  $\pm 3.46$   $p \leq .001$

### Summary

From the data collected in this study, it was concluded that after giving children the opportunity to use invented spelling in daily writing tasks there was no statistically significant difference between the mean posttest spelling scores of the treatment group and the control group. The control group was given formal spelling instruction and limited writing tasks. At the same time, it was concluded that there was no statistically significant difference between the mean posttest reading scores of the treatment group and the control group.



## Chapter V

### Conclusions and Implications

#### Purpose

In examining the mean spelling posttest scores for the treatment and the control groups it was found that there was no statistically significant difference between the two groups and the null hypothesis was retained. The following conclusions can be drawn:

1. The control group had a higher spelling mean score (6.56) at the posttest level but did not show a statistically significant difference over the treatment group. The control group was analyzed for equivalency at the pretest level and was given an intensive formal spelling instruction program. This would seem to indicate that using such an approach is not necessarily better in getting students to master spelling for their grade level.

2. Although the null hypothesis was retained, 83% of the treatment group had a mastery (of at least 80%) on the spelling posttest. 100% of the control group showed a mastery of the spelling words. In spite of a 17% difference in spelling mastery, it must be noted that the treatment group contained four students who

were retained and one who was labeled learning disabled.

In examining the mean reading scores for the treatment and control group, it was found that there was no statistically significant difference between the groups at the posttest level and the null hypothesis was retained. The following conclusions can be drawn:

1. Although there was no statistically significant difference at the posttest level in reading scores between the two groups, the control group had a mean raw score of 14.99 points higher at the pretest level. However, at the posttest level the treatment group had a mean raw score of 5.38 points higher than the control group. This would seem to indicate that reading achievement was affected.

2. In analyzing the raw reading scores at the pretest and posttest level, both groups showed a statistically significant difference in reading improvement. The difference between the  $t$  obtained (using a dependent  $t$  test) was only .71 in favor of the control group. The treatment group ( $n=29$ ) had only 2 students who scored lower at the posttest level. The control group ( $n=18$ ) also had 2 students who showed no improvement despite the fact that it had a smaller sample size and had higher ability students.

Further investigation of the two groups ability to use phonic and phonetic skills in spelling was obtained by giving two researcher-designed spelling tests consisting of 15 phonically predictable words and 15 nonsense words. It was found that most errors on the phonically predictable test were those involving medial vowels rather than beginning or ending consonants. Errors on the test of nonsense words involved both. Students in both groups found the test on nonsense words more difficult. Those students showing low scores for both tests also had the lowest reading scores. In comparing the two groups performance, it was found that the control group had a mean raw score of 10.51 points higher than the treatment group on the phonically predictable spelling test. On the test of nonsense words the control group had only a slightly higher difference of 1.07 on the mean raw score. These results were in agreement with the pretest reading scores between the two groups. The application of phonics and phonetics is important to acquiring reading skills. Invented spelling appears to help foster this ability.

The treatment group was given The Durrell Pre-Reading Phonics Ability Test to analyze the students' knowledge of letter sounds and letter recognition since they would be using invented spelling

in their writing. The results showed that only 2 students had below average scores on the subtests. These students also showed problems in acquiring reading skills. The rest of the students had above average scores for letter recognition, syntax, and writing letters for dictation. The subtests that gave most students difficulty was those for naming phonemes in spoken words and naming letter sounds in spoken words. The treatment group was also given the Wepman Auditory Discrimination Test to analyze their ability with phonic and phonetic differences in letter sounds. This is important since invented spelling relies on the discrimination of letters and sounds. Only 2 students had a below average score; 5 scored average and 22 had above average scores. The students who scored lowest also had lower reading scores.

In order to determine if invented spelling aids word recognition, a comparison of the two groups was done using the subtest from the Houghton-Mifflin Test of Basic Reading Skills for three pre-primer book levels. The treatment group had a mastery of all but one student who was latter labeled learning disabled. The control group had 100% mastery on the subtests. It appears that invented spelling does help promote word recognition.

### Implications for Research

Further investigations into the use of invented spelling for improving spelling and reading achievement are suggested. Research into the following areas is needed:

1. Students' use of invented spelling on writing improvement (organization, syntax, grammar and vocabulary) would also show how avoiding attention to spelling mechanics affects this skill.

2. The use of invented spelling and spelling mastery needs to be studied to see if the retention of words is greater for a longer period than those learned through formal spelling instruction.

3. A study involving intermediate grades needs to be conducted to see if allowing invented spelling could impact the achievement of disabled spellers and readers.

4. The knowledge of letter and sound discrimination for reading readiness needs to be studied for its application towards phonic instruction in a reading program. Is intensive phonic teaching necessary for reading instruction if invented spelling is encouraged in writing? Many basal programs have de-emphasized phonic skills to incorporate more literature to help motivate students and to foster

critical readers. Traditional educators often question the validity of "burying" phonic instruction.

5. Further studies could look at invented spelling and student self-corrections both in writing and in reading.

6. Additional studies could look at the connection between word recognition and invented spelling. If the correct spelling is not shown to the student on his writing tasks does this affect his latter recognition of these words in text.

7. Studies looking at word analysis and vocabulary development with invented spelling also need to be conducted.

8. Investigation into writing, reading and self-esteem need to be undertaken to see if proficiency in writing by allowing invented spelling makes for better readers by promoting risk taking and increasing self-esteem.

For further study, the following changes in the experimental design are recommended:

1. A higher sample size for grouping could be used with a more heterogeneous approach to both groups.

2. A spelling pretest and posttest using phonic and nonsense words could be given to both groups and analyzed.

3. The number of words could be increased for the grade level spelling test for pre and post testing.

#### Suggestions for Classroom Practice

1. Children should be encouraged to do daily writing from an early age without an emphasis on using correct spelling.

2. Allowing children to choose their own topics without an emphasis on writing mechanics (spelling, grammar and punctuation) leads to more self-correction on the students' part and increases their motivation to share their ideas with others.

3. Learning phonics in a meaningful context (such as writing) helps to increase transfer of these skill to spelling and reading.

4. Students who constantly must think of the auditory discrimination among sounds utilize a more effective approach to phonics than skill sheets provide.

5. Allowing invented spelling does not mean a child will learn to spell words incorrectly. Experimentation with words makes for a more meaningful and lasting transition to correct spelling.

6. Using a formal spelling program may produce satisfactory short term results for most students but

may not be lasting if the words are not used in daily writing.

7. Reading achievement can be affected by promoting self-esteem through invented spelling since children tend to write more, read what they have written, and develop organizational techniques for topics in publishing their books.

8. Reading must be a meaningful experience to be learned effectively and maintained latter on. This can be accomplished not only by presenting a literature based reading program, but also by allowing students to take more of an active part in their instruction. Students need to experiment with words and letter sounds and be able to read their own text as well as those of published authors.

9. Daily writing tasks may be more effective for students' acquisition of reading skills than workbooks alone.

10. Writing proficiency must be nurtured from an early age, considering developmental readiness, if fluency and correctness is to be mastered and maintained at upper grade levels.

11. Self-correction of writing tasks should come naturally to the student who takes more responsibility for his work by choosing topics and writing stories for an audience and not for the teacher.



12. Children desire to spell words correctly on their own as they write more. Calling attention to spelling errors stifles writing fluency and creates a monotonous task for the teacher to feed back correct word spelling before a student will commit his ideas to paper.

#### Summary

Invented spelling does not inhibit correct spelling and helps to promote better readers and writers. Educators who want to raise expectations for students' literacy need to allow children to take more responsibility for their own learning and consider the developmental readiness for skills being taught. Writing seems to impact reading readiness and reading achievement through children's experimentation with words and sounds at their own level, and helps foster a individual approach to reading instruction. Educators who ignore this may create future disabled spellers and not allow a child's reading ability to reach its maximum potential.

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## APPENDICES

## Appendix A

List of Phonically Predictable  
Spelling Words

tan	bed
car	book
wall	sing
bat	pat
late	door
bear	pen
big	look
tame	

## Appendix B

List of Nonsense  
Spelling Words

gow	mer
hig	tind
sud	perst
ropple	tiz
ling	fut
sar	dup
boll	crot
nud	



## Appendix C

Final Spelling Test  
(From Grade 1 Spelling List)

best	like
big	love
box	made
cat	need
dear	no
for	of
friend	play
go	see
grow	she
he	stop
hot	the
I	you
is	