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Invented spelling in a first-grade classroom

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Invented spelling in a first-grade classroom

Abstract

The outcomes of a writing program allowing children in a first-grade classroom to invent spellings were investigated. Samples of five students' writings, student observations, and parent and student interviews were collected and analyzed. Findings were reported concerning (a) spelling, (b) fluency, and (c) attitude toward writing. The acquisition of literacy is a problem-solving process in which children naturally and actively engage as they discover the underlying principles of English orthography. Learning to spell requires children to construct and test rules constantly with experiences that are meaningful and purposeful. Invented spelling depends on children's ability to isolate the separate speech sounds that comprise words. This process is known as phonemic segmentation. Spelling reflects children's judgements of how sounds are represented. The effect of invented spelling on spelling growth of the children in this study seemed to be substantial, although this effect needs to be interpreted with caution because no control group was used in this study. All children grew in their understanding of basic principles of our English system including the alphabet and concept of a word. The children progressed through developmental stages as they acquired language skills. Specific strategies such as a letter-name strategy, development of long and short vowels, and representation of the past tense marker were evident. Throughout the course of the study students' productions became more readable as more individual sounds were represented within words. Students' productions became progressively longer. Students were given ample opportunity to practice and internalize newly acquired skills with experiences that were meaningful and purposeful. Improvement in student attitude was observed as students discovered the joy of writing and grew in their understanding of the language system. As they were allowed to generate, test, and evaluate their theories about our language system, they discovered that writing was fun and served a function. They were proud of what they knew about our language system and were willing to take ownership of it. The growing number of studies today support the teaching of writing as a natural process to help children develop their literacy skills. Teachers who are concerned about their students' ability to write need to deepen their understanding of this process. They need to analyze their current teaching practices. Effective spelling instruction requires environments which encourage children to read and write extensively. Teachers must engage pupils in cognitive activities that lead to spelling competency. Researchers should continue to investigate the effectiveness of invented spelling as an instructional approach to writing. More research is needed on the progressive development toward correct spelling for children using invented spelling.

INVENTED SPELLING
IN A FIRST-GRADE CLASSROOM

A Research Paper

Submitted

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts in Education

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ABSTRACT

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The acquisition of literacy is a problem-solving process in which children naturally and actively engage as they discover the underlying principles of English orthography. Learning to spell requires children to construct and test rules constantly with experiences that are meaningful and purposeful. Invented spelling depends on children's ability to isolate the separate speech sounds that comprise words. This process is known as phonemic segmentation. Spelling reflects children's judgements of how sounds are represented.

The effect of invented spelling on spelling growth of the children in this study seemed to be substantial, although this effect needs to be interpreted with caution because no control group was used in this

study. All children grew in their understanding of basic principles of our English system including the alphabet and concept of a word. The children progressed through developmental stages as they acquired language skills. Specific strategies such as a letter-name strategy, development of long and short vowels, and representation of the past tense marker were evident. Throughout the course of the study students' productions became more readable as more individual sounds were represented within words.

Students' productions became progressively longer. Students were given ample opportunity to practice and internalize newly acquired skills with experiences that were meaningful and purposeful.

Improvement in student attitude was observed as students discovered the joy of writing and grew in their understanding of the language system. As they were allowed to generate, test, and evaluate their theories about our language system, they discovered that writing was fun and served a function. They were proud of what they knew about our language system and were willing to take ownership of it.

The growing number of studies today support the teaching of writing as a natural process to help

children develop their literacy skills. Teachers who are concerned about their students' ability to write need to deepen their understanding of this process. They need to analyze their current teaching practices. Effective spelling instruction requires environments which encourage children to read and write extensively. Teachers must engage pupils in cognitive activities that lead to spelling competency.

Researchers should continue to investigate the effectiveness of invented spelling as an instructional approach to writing. More research is needed on the progressive development toward correct spelling for children using invented spelling.

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PROLOGUE

In 1985 I became concerned with the types of spelling and writing assignments I was asking my students to complete. I realized that spelling instruction mainly involved memorizing a given list of words for a weekly spelling test. Very little opportunity was given for students to write on their own about topics that were purposeful and meaningful. Instead, when an assignment was given, it was about an unrealistic situation few children had experienced. The results were, at most, two or three sentences that showed little imagination or application of skills that had been taught as well as complaints about having to write. Because of the poor results and the poor attitude of my students, I realized it was time for a change.

I enrolled in a class on writing strategies. The emphasis was on teaching writing as a process. I learned about the use of invented spelling as an instructional means for developing understanding of orthographic principles. Children were to be encouraged to use invented spelling as they wrote about topics of their choice on a daily basis. I realized that if I was to provide good instruction in the

writing process, I would have to become more knowledgeable about it and the stages of development children go through as they write. I was motivated by the growing number of studies available that supported the teaching of writing as a natural process to help children develop their literacy skills. I was also convinced that it was time for a change due to the increased concern that young children were not able to write.

I have implemented a process approach to writing instruction in my first-grade classroom for approximately 2 years. The study reported here is an outcome of my interest and efforts in this area. The goal of this study was to deepen my understanding of the outcomes of a writing program that encouraged young children's invented spelling.

CHAPTER I

INTRODUCTION

Helping students grow in their ability to use written language effectively is one of the most important responsibilities of schools. Every writing system, or orthography, is made up of a set of graphemes or symbols, each of which represents an element of language such as a complete word, a syllable, or a speech sound with which people who know the language can communicate. Society values accurate spelling.

Invented spellings are children's early attempts to communicate in writing by using their best judgments about spelling (Lehr, 1986). The nature of invented spelling has become widely recognized by reading researchers and psycholinguists (Beers & Beers, 1980; Beers & Henderson, 1977; Chomsky, 1971; Henderson & Beers, 1980; Read, 1971). Most of the research on invented spelling has been descriptive; attempts have been made to describe the stages of written language acquisition.

Extensive research on language development provides evidence that "language acquisition is recognized to be a problem-solving process in which children naturally and actively engage as they work out the 'rules of the game'" (Hodges, 1981, p. 8). On the basis of their experiences with language, young children create implicit generalizations, test them, and modify them continually to incorporate new experiences and learnings. This process has been extensively documented in children's oral language development; studies of invented spelling add to the evidence that the same process is at work in the acquisition of literacy.

Young children have a natural desire to write. Chomsky (1971) noted in her studies of preschoolers that young children show spontaneous interest in creating words long before they can read. She suggested that allowing and encouraging such behavior is a natural beginning step to learning to read.

Invented spelling derives, in part, from children's ability to isolate the separate speech sounds that comprise words. Isolating speech sounds is called phonemic segmentation. In addition, children gain a growing familiarity with the letters that

represent the isolated sounds. Read (1971) showed that children as young as 4 years old can represent word sounds quite consistently. While they most often misspell words, the children invent spellings that seem to reflect their judgments of how sounds are represented, and they do so according to identifiable patterns.

Children have enormous phonetic acuity and ability to analyze the component sounds of words (Chomsky, 1971; Read, 1971). Read concluded that children tacitly recognize certain phonetic contrasts and similarities. Children's linguistic organization of phonetic material does not always coincide with adults' organization. Children do not know the set of lexical representations and the system of phonological rules that account for much of standard spelling. What they do know is a system of phonics that they choose in terms of phonetic properties such as nasality, syllabicity, backness, height, and affrication.

Allowing children to use their knowledge of phonics to invent spelling can provide valuable insights into how they learn and how best to teach them. Errors are part of a child's effort to build a coherent system of writing. Read (1971) argued that

spelling develops as children grow in awareness and understanding of a system, not from memorizing lists. Learning to spell requires children to construct and test rules constantly.

The environment that contributes to early spelling and writing was viewed by Chomsky (1971) as a place where children are "allowed to trust their own ears and their own judgments" (p. 296). This approach introduces them to the written word by making them aware that it belongs to them and grows out of their own consciousness. Chomsky thought children would best internalize information about spelling through repeated experiences manipulating and testing sound-symbol representations.

The logic by which we teach is not always the logic by which children learn (Bissex, 1980). The ability to spell traditionally has been regarded as little more than a psychomotor skill acquired through memorization and practice. Traditional teachers present spelling in much the same way they were taught to spell, basing instruction on lists of words that students study in preparation for a weekly test (Hodges, 1981). New insights into how children learn to spell have begun to shape new thinking about the

best type of spelling instruction. However, only one study (Clarke, 1988) was located that examined the impact of encouraging young children to use invented spellings as they wrote.

Goal of the Study

The goal of this study was to provide information about the outcomes of a writing program that encouraged young children to invent spellings as they wrote.

Significance of the Study

This study proposed to identify data-based findings relative to the outcomes of classroom instruction that encouraged invented spelling. As teachers better understand the intended and unintended consequences of such instruction, they will be better able to improve current practice.

CHAPTER II

REVIEW OF RELATED LITERATURE

Approaching reading through the use of invented spelling calls for adults to allow children to spell on their own and to be active participants in teaching themselves to read. Chomsky (1971) believed composing words according to their sounds was the first step toward reading. This approach introduces children to the written word by making them aware that it belongs to them and grows out of their own consciousness. It is a means for expressing something that is in their heads.

This chapter, which consists of four parts, reviews the literature on the development of spelling abilities and on the instruction that promotes this development. The first part identifies the role of phonology in early spelling. The second part reviews the five stages of the developmental process of learning to spell. It identifies characteristics of students' spellings representative of each stage. The third part of this chapter presents suggestions, derived from developmental research, concerning teacher behaviors that should foster students' development of

spelling competence. The fourth part contains research findings from an intervention study that included invented spelling as a treatment.

The Role of Phonology in Early Spelling

Learning to spell, like learning to speak and read, is a language-based activity. Beers (1980) stated that children internalize information about spoken and written words, organize that information, construct tentative rules based on that information, and apply these rules to the spelling of words. Read (1971) argued that the ability to spell grows from understanding a system, not from memorizing lists, and that learning to spell requires children to construct and test rules constantly.

As children progress through the stages of spelling development, consistent spelling patterns evolve. This consistency seems to come from children's highly sophisticated knowledge of English phonology. Children are acutely aware of the characteristics of English sounds and have established a hierarchy of the characteristics with which to base their initial spelling of English words. (Beers & Henderson, 1977; Read, 1971).

Read (1971) was the first to report the phonological nature of young children's spelling. He found that the tongue, lip, and teeth positions when articulating letter sounds play a major role in the initial stages of spelling. Children rely on articulatory features to determine the most appropriate letter to represent a particular sound. Further studies by Beers & Henderson (1977), Zutell (1978), Beers & Beers (1980), Henderson & Beers (1980), Bissex (1980), and Gentry (1982) supported Read's findings which establish the phonological basis for the spelling of youngsters at an early stage.

Specific strategies have been found repeatedly in the writings of phonetic spellers. The letter-name strategy is one such strategy that is evident at the early stages of spelling development, before extensive exposure to print and instruction. It involves selecting a letter of the alphabet to make a match between the name of the letter of the alphabet and the sound it has at the point of articulation (e.g., NHR [nature]). This strategy works well for many phonemes, especially long vowels and initial and ending consonants.

The progressive development of long and short vowels has also been recognized as a consistent strategy. Children are aware of the similarities among phonetic features of vowel sounds and use that awareness in their spelling attempts. Long vowels are usually included first, matching up the letter name. When the sound does not match, as in the spelling of short vowels, children select the letter name that makes the closest match with the sound said (e.g., RAD [red] and HET [hit]) (Beers & Henderson, 1977). This reveals the sensitivity to how the sounds are produced in the mouth.

Read (1971) explained that vowel sounds are considered tense or lax according to the degree of tenseness in the tongue and floor of the mouth during the articulation of the sound. Long vowel sounds, tense vowels, are really diphthongs. Phonetically, long i is made up of the short o + y, long a of short e + y, and long e of short i + y. When children attempt to write short vowels, they hear the first part of the long vowel diphthong and use that letter for spelling. Fish becomes FES, fell becomes FALL, and got becomes GIT. Read also found that children overgeneralize this system to the long vowels.

The spelling of nasal consonants m and n is also evidence of children's awareness of English. In an initial, middle, or final position they are usually represented correctly. But when either m or n are part of a consonant blend such as nd, ng, nk, or mp, they are omitted. Articulation features are the main reason given for this consistent omission since nasals are articulated in the position that is used for a consonant that immediately follows the nasal.

Another example of children's phonological judgments identified by Read (1971) is known as affrication. When t and d appear before an r they are affricated (i.e., released slowly with a resulting /shh/ sound). They are usually then represented as chr as in chruck [truck] or jr as in jrress [dress].

Read (1971) also noted a pattern in the way children represent the past tense marker. At first it is by letter-name (e.g., HALPT [helped]). As children progress, they accurately represent past tense with a d regardless of the sound (e.g., HALPD [helped]).

As spelling develops, children draw from alternate strategies depending on their understanding of phonological, visual, and morphological relationships. Development proceeds from simple to complex and from

concrete to abstract (Gentry, 1982). Children begin to refine their spelling given enough exposure to the writing system and the feedback available from teachers and parents. Children move from phonological to more advanced strategies as they discover the relationships that govern spelling. Read (1971) stated that children "are on their way when they begin to abstract away from the phonetic strategy" (p. 34). He claims that abstraction is a crucial step toward becoming an accurate speller.

Developmental Stages of Learning to Spell

The acquisition of spelling ability is part of the acquisition of written language skills and is governed by the cognitive processes involved in language development (Hodges, 1981). Research in how children develop skill in spelling shows that young people's writing moves through clearly defined stages (Beers & Henderson, 1977; Gentry, 1981, 1982; Wood, 1982). Five stages have been identified, each representing a different conceptualization of English orthography. Like oral language, spelling proceeds from simple to complex activities, with a reshaping of cognitive structures at each level (Gentry, 1982; Wood, 1982).

Gentry (1981) integrated his observational findings with those of Read (1971), Henderson & Beers, (1980), Beers (1980), and Bissex (1980) to produce a useful classification model for assessing student's spelling development. He labeled the five levels, or stages, of spelling as Deviant, Prephonetic, Phonetic, Transitional, and Standard. He later changed Deviant to Precommunicative because spellings at this stage deviate extensively from conventional spelling patterns but are not unnatural or uncommon as the word deviant implies. He also changed the Prephonetic label to Semiphonetic.

Precommunicative Stage

The Precommunicative stage is the earliest level of spelling development. It is the level where a child first uses symbols from the alphabet to represent words. Gentry first labeled this stage Deviant because of the primitive appearance of children's spellings. The spellings consist of a random ordering of letters which the child is able to recall. No awareness of letter-sound correspondence is evident (e.g., btBpA [monster]). Precommunicative spellings are not readable, although they are purposeful productions representing the child's concept of words. Spellers

are at the precommunicative stage when their spelling errors are characterized by the following behaviors:

1. The speller demonstrates some knowledge of the alphabet through production of letter forms to represent a message.
2. The speller demonstrates no knowledge of letter-sound correspondence. Spelling attempts appear to be a random stringing together of letters of the alphabet which the speller is able to produce in written form.
3. The speller may or may not know the principle of left-to-right directionality for English spelling.
4. The speller may include number symbols as part of the spelling of a word.
5. The speller's level of alphabet knowledge may range from much repetition of a few known symbols to substantial production of letters of the alphabet.
6. The speller frequently mixes uppercase and lowercase letters indiscriminately.
7. The speller generally shows a preference for uppercase letter forms. (Gentry, 1982, pp. 193-194)

Semiphonetic Stage

The second stage has been labeled the Semiphonetic stage. Spellings at this level represent the child's first approximations of an alphabetic orthography. At this stage the child first begins to conceptualize the alphabetic principle that spellings represent letter-sound correspondences. The following are characteristics of semiphonetic spellings:

1. The speller begins to conceptualize that letters have sounds that are used to represent the sounds in words.
2. Letters used to represent words provide a partial phonetic representation for the word being spelled. One, two, or three letters may represent the whole word.
3. A letter-name strategy is evident. The speller represents words, sounds, or syllables with letters that match their letter names (e.g., R [are]; U [you]; LEFT [elephant]).
4. The semiphonetic speller begins to grasp the left-to-right sequential arrangement of letters.
5. Alphabet knowledge and mastery of letter formation is more complete.

6. Word segmentation may or may not be evident.

(Gentry, 1982, p. 194)

Phonetic Stage

The third stage is the Phonetic stage. Phonetic spellings are quite regular and all the sound features of the word are represented. Though some of the letter choices do not conform to conventional English spelling for some sounds, the choices are systematic and perceptually correct. Phonetic spellings are readable. Four behaviors are identified at this stage.

1. For the first time the child is able to provide a total mapping of letter-sound correspondence. All the surface sound features of the words being spelled are represented.
2. The children systematically develop particular spellings for certain details of phonetic form. These include tense and lax vowels (e.g., substitution of a for e BAT [bet], e for i SET [sit], i for o CIT [cot], o for u HOT [hut]), preconsonantal nasals (e.g., omission of m or n in AD [and], BOPY [bumpy]), syllabic sonorants (e.g., omission of a vowel when a syllable has a vowel-like consonant in BRD [bird], OPN [open]), ed endings (e.g., LIKT [liked]),

affricates (e.g., *chrade* [trade], *jrum* [drum]), and intervocalic flaps (e.g., *PREDE* [pretty], *BODM* [bottom]).

3. Letters are assigned strictly on the basis of sound.

4. Word segmentation and spacial orientation are generally, but not always, evident. (Gentry, 1982, p. 195)

Transitional Stage

At the fourth stage, called Transitional, there is a marked movement toward standard spelling. At this stage the speller begins to assimilate the conventional alternatives for representing sounds. The speller undergoes a transition from great reliance on phonology or sounds for representing words to a greater reliance on visual and morphological representations.

Characteristics of transitional spelling include the following:

1. Students begin to apply basic conventions of English orthography: vowels appear in every syllable (e.g., *EGUL* instead of *EGL* [eagle]); nasals m and n are represented before consonants (e.g., *BANGK* instead of the phonetic *BAK* [bank]); both vowels and consonants are

employed instead of a letter name strategy (e.g., EL rather than L for the first syllable of ELEFANT [elephant]); vowels are represented before a syllabic r even though they are not heard or felt as a separate sound (e.g., MONSTUR instead of the phonetic MOSTR [monster]); common English letter sequences are used in spelling (e.g., YOUNITED [united], STINGKS [stinks]); use of vowel digraphs, silent e marker pattern for long vowels, and inflectional endings like s, 's, ing, and est are spelled conventionally.

2. Transitional spellers move from phonological to morphological and visual spelling (e.g., EIGHTEE instead of ATE [eighty]).

3. All letters may be represented but not in the right order (e.g., TAOD [toad], HUOSE [house]).

4. Transitional spellers do not completely understand all the conditions for representing a sound.

5. Transitional spellers recognize different spellings for the same sound.

6. Transitional spellers generally use words they have learned correctly with more frequency in their writing. (Gentry, 1982, pp. 196-197)

Standard Spelling Stage

Children at the Standard, or Correct, stage are able to spell the majority of words for their grade level correctly. Spelling characteristics identified at this level include:

1. The speller's knowledge of the English orthographic system and its basic rules is firmly established.
2. Correct spellers extend their knowledge of word environmental constraints (i.e., graphemic environment in the word, position in word, and stress).
3. The correct speller shows an extended knowledge of word structure including accurate spelling of prefixes, suffixes, contractions, and compound words, and the ability to distinguish homonyms.
4. The correct speller demonstrates a growing accuracy in using silent consonants and in doubling consonants appropriately.
5. The correct speller is able to apply alternative spellings and recognize when words don't look right.
6. The correct speller continues to master uncommon alternative patterns (e.g., ie and

ei) and words with irregular spellings.

7. The correct speller has a large bank of learned words. (Gentry, 1982, p. 198)

Implications for Instruction
Derived from Developmental Research

Learning to spell is a matter of acquiring knowledge more than habits. In order to best help children develop knowledge of the writing system, teachers must consciously construct environments in which children have the opportunity to examine words and to generate, test, and evaluate their own spelling strategies (Zutell, 1978).

Gentry & Henderson (1978), Gentry (1982), and Zutell (1978) have identified guidelines for fostering spelling development in the classroom that are based on research into the developmental stages of spelling ability. These guidelines are not based on intervention studies that analyzed the effects of various instructional approaches. Five points synthesize these guidelines.

First, provide purposeful writing experiences. Children need opportunities for and encouragement to

explore thought and structure through their own writing. Encourage children to manipulate and discover words. As children write, they are testing their theories of how the alphabet works by contrasting their theories with standard orthography. As children hypothesize and mentally rehearse printed representations for words, they engage in the cognitive activity needed for developmental growth. Writing needs to be both fun and functional. Such writing includes stories, songs, lists, plans, messages, recipes, letters, and signs.

A second guideline is to provide frequent writing opportunities. In order to learn any complex cognitive process, students require many opportunities to practice what has been presented directly and to discover personal insights.

Third, de-emphasize correctness, writing mechanics, and memorization. Early emphasis on mechanical aspects of spelling inhibits natural developmental spelling competency and growth. However, models of correct writing, patterns of written form, and teacher edited and typed versions of children's work should be a part of the classroom. Teacher's

expectations of correctness should be adjusted to fit the pupils' levels of development.

Fourth, help pupils develop spelling consciousness. By responding to children's writing, teachers build pupil interest in words, make word study fun, answer students' questions, and teach skills without overwhelming students. Zutell (1978) also points out the importance of reading to children. Extensive reading provides children with a greater reservoir of written words and meanings which they can use to generate and test rules for recognizing relationships among words.

Finally, observe and assess pupil progress. Knowing how to intervene and knowing what skills to address depend upon the teacher's knowledge of the developmental process. Hoffman and Knippling (1988) explained that teachers who understand children's initial rule system for spelling focus their attention on what children know. They value their young student's tentative hypotheses about spelling and respect the developmental processes involved with spelling.

The type of spelling instruction most appropriate for children is determined by each child's level, or

stage, of development. Gentry (1982) identified skills to be emphasized at each stage of development. For precommunicative and semiphonetic spellers, instruction should focus on alphabet knowledge, directionality of print and its spatial orientation, concept of word, oral language to print match, and the representation of sounds with letters. Phonetic spellers are ready for introduction to the conventions of English orthography such as word families, spelling patterns, phonics, and word structure. Gentry states that only children at the transitional stage are ready for formal spelling instruction. Writing should be encouraged at all levels. As teachers analyze students' writing samples, they should note spelling strategies, application of skills taught, and progress toward spelling competency.

Instructional Research

The interest in invented spelling begun by Read (1971) and Chomsky (1971) produced a growing body of literature on spelling development and its relationship to reading and writing. Children who were encouraged to use invented spelling as a beginning have been shown to gradually adopt appropriate symbols for sounds and progress to traditional spelling as they are exposed to

and become aware of conventional written language (Beers, 1980; Gentry & Henderson 1978; Read, 1971).

Clarke (1988) conducted a study with first graders to test the claims of proponents of invented spelling. This was the only study located that included invented spelling as an experimental intervention. Clarke compared the progress of children encouraged to use invented spelling with those encouraged to use traditional spelling in their creative writing. Findings indicated that by using invented spelling more children were able to write on their own in the early months. Their productions were significantly longer than those by children using traditional spelling. Overall, children using invented spelling were better at spelling from recall words they had previously encountered in text than the traditional spellers. Invented spellers outperformed traditional spellers in word analysis in reading, but the children in traditional spelling classes were better in flash word recognition. Clarke also found that, initially, low achieving children accounted for most of the gain in spelling and reading as a result of the use of invented spelling.

Clarke (1988) stated that three of his findings were especially noteworthy. The first finding did not confirm statements by authorities on invented spelling suggesting that in using invented spelling children are unrestricted by the few words they know how to spell or by the words supplied by the teacher. In Clarke's study, percentages of low frequency words used by invented and traditional spellers showed little difference. Children in both groups wrote approximately 64% of their words at the Grade 1 level.

Second, Beers (1980), Gentry & Henderson (1978), and Read (1971) have shown that beginning readers' spelling strategies progress from simple phonetic strategies to more complex and abstract strategies as a result of increased experience with and exposure to print. Clarke found that progressive development toward correct spelling was indicated for children using invented spelling. There was an increase in the number of invented spellings at the Traditional and Phonetic stages over a 5-month period.

The third finding indicated that children using invented spelling developed superior spelling and phonic analysis skills. These children seemed to benefit from the practice of matching sound segments of

words to letters as they wrote and from using their own sound sequence analysis.

Clarke stated that the introduction to written language as phonemic transcription may give children confidence by enabling them to work with the regularities of written language before or at the same time as they are presented with abstract features of words in their basal readers. Also, encouraging children to use invented spelling may induce them to shift from processing words visually toward using phonetic cues earlier than they would otherwise in their basal programs. Furthermore, he feels that the effects of invented spelling in the writing process itself, on independence, confidence, and on sheer amount of writing, would persist under a variety of conditions and would pay dividends.

Chapter III

METHODOLOGY

I set out to answer this research question: What are the outcomes of a writing program that encourages young children's invented spellings?

Class Background

The research was done in my first-grade classroom. The class consisted of 20 average to low-average students. Although observations were made of all students, I concentrated my attention on 5 subjects. The subjects included 3 boys and 2 girls. The 5 students were experiencing difficulty in reading. Problems ranged from little understanding of the alphabet and the concept of word to lack of prior knowledge and experiences with print. Poor grammar, limited knowledge of sentence and story structure, and small sight vocabulary also characterized these students.

Sara was repeating first grade. The previous year was very difficult for her. She was very young and behind developmentally. She lacked understanding of the basic readiness skills for reading and motivation

to learn. Sara finished the year writing at the Semiphonetic Stage. This year Sara's motivation and understanding of our English system was growing, as is evident in her writings. She had progressed to the Phonetic Stage at the beginning of this study.

Chris was in the process of being tested for a possible attention deficit problem. He is very knowledgeable and verbal about a wide range of topics. Chris has a very creative mind and his special interest is imaginary cartoon characters. However, because of an extremely short attention span and inability to concentrate, transferring his ideas to paper is a difficult task.

Josh started the year believing he could write. However, he did not have a good understanding of the alphabet, letter-sound correspondences, or concepts of words or sentences. His grammar was poor. These problems were evident in his writings.

Ryan and Angie knew most of the letters and understood the concept of word at the beginning of the study. However, they lacked confidence and experiences with print. Reinforcement, modeling, and guided practice, along with encouragement to write, were necessary in order to get them started.

Chris, Josh, Ryan, and Angie were judged to be at the Semiphonetic Stage of spelling at the beginning of the study. Sara was at the Phonetic Stage. The students were just beginning a writing program called Writing to Read (Martin, 1986) that introduces them to 30 cycle words through the use of a computer. Cycle words are key words used to expose students to 42 phonemes, providing students the sound-symbol relationships necessary to write anything they can say. The sound-symbol relationships include all long and short vowels; initial and final consonant blends such as st, sm, sn, nd, and mp; consonant digraphs ch, th, sh, and wh; vowel digraphs ai, aw, ee, and both sounds of oo; diphthongs oi, ou; and r controlled vowels ar, er, or and ur. Emphasis is on segmenting and blending sounds together to form words. The children learn the cycle words one-at-a-time while working cooperatively with a partner during daily lab sessions. These words and sounds then are reinforced through writing and hands on activities where manipulatives are used by the children to form words.

Along with the Writing to Read program, the students were given time to write each day. They were encouraged to make choices about what they wanted to

write and were told not to worry about spelling. Students also listened to and followed along with taped stories of children's picture books. Children routinely shared their writings with the class.

Procedures

Collection of data extended over a 2-month period beginning with the first of October 1988 and extending until the first week of December 1988. Data were collected to provide information about (a) spelling, (b) fluency, and (c) attitude towards writing. Data were collected through observation, parent and student interviews, and samples of students' writings.

Spelling

Four samples of students' writings were collected to determine the students' spelling and fluency performance. These samples included labels, lists, and stories. The spelling stages were the ones described by Gentry (1982) and were determined holistically, although a four-point scale published by the Cedar Falls Community School District (1988) was used to provide initial information about the spelling of each word. The following is an explanation of the

four-point scale used to score each word prior to judging the spelling stage of each writing sample:

1. A word received a 1 rating if the child wrote only the correct beginning consonant or beginning consonant and then random letters. C was accepted for /s/ or /k/, chr for /tr/, and jr for /dr/.
2. A word was given a 2 rating if the correct beginning and final consonant, or the correct beginning consonant and an acceptable vowel, were represented.
3. A word was given a 3 rating if a correct beginning and final consonant along with an acceptable short vowel substitute (i.e., a for e, e for i, i for o, and o for u) or a letter name for the long vowel was given.
4. A 4 was given to words with a correct beginning and final consonant and correct short vowel. Also, if a beginning and final consonant were given with an attempt to mark a long vowel, then a 4 was given.

Correct words were marked with a star but not rated. It is not known at this point when a word is spelled correctly if the child actually spelled it from

memory, copied it from another source, or applied mediated spelling strategies.

Fluency

Three measures of fluency were used. Children's fluency was assessed by word count, type-token ratio (Loban, 1963), and T-unit (Hunt, 1970). These measures were computed and then analyzed visually.

First, the total number of words in each sample was calculated for the word count. Second, type-token ratios were computed for each sample. Type-token ratios involved the following:

1. Recording the total number of words produced,
2. Recording the total number of unique words produced (Unique was defined as any new attempt; a word repeated several times was counted only once),
3. Dividing the number of unique words by the number of total words.

Third, length of T-unit clauses were determined (Hunt, 1970). A T-unit is a "minimal terminal unit," or an independent clause.

Attitude Toward Writing

Observations were made as the students worked and as they commented spontaneously with their peers and

during teacher-student interactions. Opportunities were given for students to explain how they felt about writing and their reasoning for choices of topics, words, or letters. Anecdotal records were maintained.

Parental input also was used to determine students' attitude toward writing. Two contacts were made during the study. The first was done informally during parent-teacher conferences in early November. The second contact was at the end of the 2-month period in the form of a questionnaire sent home for the parents to fill out and return (See Appendix A).

CHAPTER IV

RESULTS

The purpose of this study was to determine the outcomes of a writing program that encouraged young children's invented spellings. Four writing samples from each of 5 students were collected, scored, and the data were analyzed visually. Data were collected concerning (a) spelling, b) fluency, and (c) attitude toward writing. Results relative to each area are presented in this chapter.

Spelling

The effect of invented spelling on spelling growth was considered. Table 1 shows the results of the spelling assessment.

Insert Table 1 about here

The childrens' productions showed developmental gains in their understanding of English orthography. Four of the 5 students showed measurable growth. Three students progressed from the Semiphonetic to the Phonetic stage. One student progressed from the Phonetic to the Transitional stage. Although 1 student

Table 1
Spelling Assessment

Student	Sample	Rating Scale				Stage
		1	2	3	4	
Ryan	1	1	1	0	0	Semiphonetic
	2	0	1	0	0	Semiphonetic
	3	0	2	3	2	Phonetic
	4	1	2	6	3	Phonetic
Chris	1	0	2	1	1	Semiphonetic
	2	1	0	3	2	Phonetic
	3	0	1	3	4	Phonetic
	4	1	0	5	1	Phonetic
Josh	1	0	1	0	0	Semiphonetic
	2	0	3	1	0	Semiphonetic
	3	3	6	0	0	Semiphonetic
	4	2	2	1	0	Semiphonetic
Angie	1	0	1	0	4	Semiphonetic
	2	1	0	5	1	Phonetic
	3	1	8	16	12	Phonetic
	4	1	2	8	2	Phonetic

Table 1, cont.

Spelling Assessment

Student	Sample	Rating Scale				Stage
		1	2	3	4	
Sara	1	0	1	2	1	Phonetic
	2	0	0	0	5	Transitional
	3	0	0	1	8	Transitional
	4	0	2	4	8	Transitional

did not show growth from one stage to another, samples showed increased understanding of important concepts such as spacing and concept of word during the time period considered.

Four of the 5 students observed began the study exhibiting characteristics of the Semiphonetic stage of spelling development. These students were beginning to conceptualize that letters have sounds that are used to represent the sounds in words. The majority of their words consisted of one or two letters representing the whole word (e.g., RA [rabbit]). Usually the beginning sound was represented. A letter-name strategy was evident. Words, sounds, or syllables were represented with letters that matched their letter-name (e.g., C [see]; B [be]; R [are]; HAP [happy]). These students had a very small sight vocabulary. Only words that they had been exposed to often in their basals such as the, and, in, and is were spelled correctly. Spacing of words and left-to-right direction of words was not consistent. Discriminating all of the individual sounds in words was difficult for them.

Within a few weeks, application of skills being taught were noticed in the students' writing. Spacing of individual words and the left-to-right sequence of

words were evident. The students' productions were becoming more readable. They were hearing and representing more sounds in the words they were spelling (e.g., RASL [rassle]; BRDS [birds]). Words learned in their basals and words learned as cycle words in the Writing To Read program were the center of topics for most students (e.g., cat; dog; fish; boat). These words were being spelled correctly with greater frequency. Also, phonemes introduced in the cycle words were being recognized and represented in their writings (e.g., MOOVE [move]; WICH [witch]). By the end of the study, they were spelling most unknown words at the Phonetic stage (e.g., WODR [water]; WUZ [was]; LIC [like]) with a greater percentage of known words spelled correctly (e.g., with; my; get; and; I).

Josh was the student whose first and last samples were at the Semiphonetic stage, although he had made progress. He was considerably behind the others in language development at the beginning of the study. By the end of the study, his understanding of the concept of word and the spacing of words was evident. He also was able to represent more sounds consistently than he had previously.

Sara, who was repeating first grade, began this study at the Phonetic stage. She demonstrated immediate progress as skills being reviewed started to fall into place. During the previous year, Sara did not progress beyond the Semiphonetic stage of spelling. This year, she quickly moved from the Semiphonetic to the Phonetic stage after previously taught skills were reviewed. A letter-name strategy was strongly evident in her writings (e.g., SISTR [sister]; BRUTHR [brother]; FUNE [funny]). By the collection of the second sample she had moved into the Transitional stage. She was starting to apply basic conventions of English orthography such as the e-marker and inflectional endings s and ing (e.g., LIVE; HAVE; WUCHING [watching]; PLAING [playing]).

Fluency

Three measures of fluency, word count, type-token ratio and T-units, were based on text length. Table 2 shows the word counts and type-token ratios for each of the samples of writing collected. All students showed an increase in the number of total words and unique words with each sample. The ratio at the bottom of each column is the average of the total number of words to unique words for all students for each sample. The

percentage of total words compared with the number of unique words remained approximately the same. The total number of unique words was from 66% to 72% of the total number of words for each of the four samples. It should be noted that the ratio for the first sample (66%) was based on 70 total words, and the ratio of the last sample (66%) was based on 182 total words. Although the ratios were identical, the increase in total words in the last sample means that a greater proportion of unique words actually were used.

Insert Table 2 about here

Table 3 shows the total number of T-Units in the samples collected from each student. The results showed an increase in number of T-units produced by each student during the course of the study. The number at the bottom of each column is the average of the total number of T-units for all students with each sample. Results showed the average number of T-units doubled from the first to the last sample.

Insert Table 3 about here

Table 2

Type-Token Ratios

Student	Writing Sample			
	1	2	3	4
Ryan	4/4	5/5	9/10	22/38
Chris	8/8	7/7	16/19	15/18
Josh	6/6	8/14	16/21	7/7
Angie	9/27	10/16	43/69	30/58
Sara	13/25	18/25	26/36	46/61
COLUMN TOTAL	30/70	48/67	110/155	120/182
AVERAGE	8/12	9.6/13.4	22/31	24/36.4
(%)	66%	72%	71%	66%

Note. The percentage indicates the average percentage of unique words to total words in each sample.

Table 3

T-Units

Student	Writing Sample			
	1	2	3	4
Ryan	1	1	3	5
Chris	2	1	4	3
Josh	1	3	5	-
Angie	6	6	15	11
Sara	5	5	7	12
COLUMN TOTAL	15	16	24	31
AVERAGE	3	3.2	4.8	6.2

Note. Average indicates the average number of T-units for each collection of samples.

Attitude Toward Writing

Along with my observations of students' attitudes toward writing, a reading and writing interest survey was sent home to the parents. The results from my observations and the parent survey indicated that the children developed a positive attitude toward writing. In class my students became eager to respond to writing tasks. They willingly experimented with words and shared what they had written with their peers and me. Most parents stated that their children were writing at home and were willing to share what they wrote. The majority said they were pleased with their child's progress and would continue to encourage them to write at home.

CHAPTER V

CONCLUSION

This chapter begins with a brief review of the first four chapters of this report. Next, the findings of this study are discussed. Finally, implications for instruction and research are given.

Summary

The review of the literature shows extensive evidence that the acquisition of literacy is a problem-solving process in which children naturally and actively engage as they discover the underlying principles of English orthography. Through their experiences with language, children create implicit generalizations, test them, and modify them continually as they incorporate new experiences and learnings. This process is true of both oral and written language acquisition. Learning to spell requires children to construct and test rules constantly.

The purpose of this study was to provide information about the outcomes of a writing program that encouraged young children to invent spellings as they write. This study identified data-based findings

relative to the outcomes of classroom instruction that encourages invented spelling.

Encouraging young children's invented spellings is a natural beginning step to learning to read. Children have a natural desire to write. Invented spelling depends on children's ability to isolate the separate speech sounds that comprise words known as phonemic segmentation. Children gain a growing familiarity with the letters that represent the isolated sounds. Their spellings reflect their judgments of how sounds are represented.

Allowing children to use their knowledge to invent spelling can provide valuable insights into how they learn and how best to teach them. Spelling develops as children grow in awareness and understanding of a system, not from memorizing lists.

Phonology has been found to play an important role in early spelling. As children progress through the stages of spelling development, consistent spelling patterns evolve. Children have a highly sophisticated knowledge of English phonology. They are acutely aware of the characteristics of English sounds on which they base their initial spellings of English words.

Children rely on the articulatory features to determine the most appropriate letter for a particular sound.

Specific strategies have also been found repeatedly in the writings of phonetic spellers. Those discussed include the letter-name strategy, the development of long and short vowels, the spelling of nasal consonants m and n when part of a consonant blend, the affricates t and d before an r, and the representation of the past tense marker.

Children move from phonological to more advanced strategies as they discover the relationships that govern spelling. Development proceeds from simple to complex and from concrete to abstract. Abstraction is a crucial step toward becoming an accurate speller.

Acquisition of spelling ability is governed by the cognitive processes involved in language development. Research shows that young people's writing moves through clearly defined stages. Five stages have been identified, each representing a different conceptualization of English orthography. Spelling proceeds from simple to complex with a reshaping of cognitive structures at each level. The five stages are the Precommunicative, Semiphonetic, Phonetic, Transitional, and Standard.

Learning to spell is a matter of acquiring knowledge rather than habits. In order to best help children develop knowledge of the writing system, teachers must consciously construct environments in which children have the opportunity to examine words and to generate, test, and evaluate their own spelling strategies. Five important guidelines identified for fostering spelling development in the classroom are based on research into the developmental stages of spelling ability. They are as follows:

1. Provide purposeful writing experiences.
2. Provide frequent writing opportunities.
3. De-emphasize correctness, writing mechanics, and memorization.
4. Help pupils develop spelling consciousness.
5. Observe and assess pupil progress.

One instructional study with the intent of testing the claims of proponents of invented spelling was located, and it showed significant findings in support of the use of such a method of instruction. Findings from this study indicated that more children who used invented spelling were able to write on their own in the early months. Their productions were significantly longer than traditional spellers, but more spelling

errors are also evident. In posttests, children using invented spelling had significantly greater skill in spelling and in word analysis in reading, but not in flash recognition. It was also found that initially low achieving children accounted for most of the gain in spelling and reading as the result of using invented spelling. It was suggested that the introduction to written language as phonemic transcription may give children confidence by enabling them to work with the regularities of written language before or at the same time as they are presented with abstract features of words in their basal readers.

The study reported here was conducted in my first-grade classroom to determine the outcomes of a writing program that encouraged childrens' invented spellings. Data were collected for 5 children through observation, parent and student interviews, and samples of students' writing. The 5 children's writing performance and attitude showed gains. The following section discusses these findings concerning (a) spelling, (b) fluency, and (c) attitude toward writing.

Discussion

Several outcomes from this study were especially noteworthy. Findings were in support of the current research that invented spelling does help students grow in their understanding of our language system. My interpretations of the results are summarized in this section.

Spelling

The effect of invented spelling on spelling growth was substantial. The samples gathered showed developmental gains for 4 of 5 students during the course of the 2-month study. A research design with a control group was not used in this study, so the gain in spelling might be attributed to factors other than invented spelling with this limitation in mind.

I believe there are two basic reasons for this growth in spelling development. The first reason is the increased exposure to words in print. Children became aware of the alphabetic principle and the concept of word as these skills were modeled and practiced in the classroom. The second reason is the opportunity for the students to write and practice

these skills daily in a risk-free environment. They were free to explore, test, and revise their understanding of these concepts. They wrote about topics that were meaningful and purposeful to them. As they saw a need, they began to take ownership of those skills.

Fluency

The children's increased fluency in writing was evident in the results of the type-token ratios and the number of T-units in the students' productions. The results showed that as the total number of words increased, so did the number of unique words. Their productions became progressively longer. The average number of T-units per sample doubled over the 2-month period of the study.

I feel there are several factors contributing to this increase in length of students' productions. An increase in text length is interpreted as an improvement in attitude and confidence toward writing. The students grew in their ability to recognize letter sounds and associate a symbol to them. Because of an increased exposure to print in their basals, in picture story books, and language experience stories, their

understandings of the concept of word, sentence, and story were also increased. Given the opportunity to write, they were motivated to experiment with these new skills. They saw a purpose for writing. They were not necessarily concerned with the content of their stories, but more with just the creation of their words on paper. Children at this age enjoy repetition and many are satisfied with writing the same thing over and over. For instance, much of Angie's early productions consisted of one sentence written again and again with only one word changed (see Appendix A). The more practice the students had in writing, the less attention they paid to the mechanics of forming the letters. They were free to let their ideas flow as they wrote. Their productions became their talk written down.

Allowing students to invent spelling gave them necessary time and practice to internalize the complex principals of our English system. The results of this study support the belief that children have a natural desire to write. Given the freedom and opportunity to write, they will acquire essential language skills.

Attitude Toward Writing

Along with empirical findings relative to spelling and fluency, student attitude was assessed qualitatively by observing the students while writing and through student and parent interviews. At the beginning of the study I was constantly bombarded with "I don't know how to write," or "How do you spell_____?" Students would sit hesitantly, afraid to put down anything on paper that might not be correct. They would cover up what they wrote so others wouldn't see it. They struggled to write one sentence. Even with encouragement, most students could not think of much to write.

Once the children realized it was all right to put their own thoughts down, those statements became less and less frequent. Students began to experiment with new words and ideas on their own. I found that with each day I had to give less help or suggestions for children to get started. Before even going to the lab some would announce what they wanted to write about. Instead, I was bombarded constantly with students who wanted to share their stories with me.

In the lab, students worked cooperatively with a partner. As students sat at the writing table, they would talk and offer suggestions of what to write or inform a student that they forgot a period or a capital letter or the correct spelling of a word. Instead of coming to me, students would help each other. If someone asked how to spell a word, another student would quickly respond with the answer.

As I moved around the room I would frequently ask students "Why did you put that _____?" or "What do you think _____?" Their response was usually "I know that _____." or "I think that _____."

The positive attitude toward writing carried over into the classroom. Most students were not afraid to write. I asked my students to complete a variety of writing tasks from writing a list or a thank-you letter to writing in a journal. Each time they were eager to respond.

I also have noticed an improvement in students' willingness and ability to sound out unknown words since encouraging invented spelling. This includes new words they come across in their reading or words we might sound out orally as a class. The students became able to hear and identify more of the individual sounds

in words. They were more aware of the structure of words. I found I did less drill on getting students to recognize vowel patterns and word families. However, there is one concern that needs to be mentioned. I noticed that the constant encouragement to sound out words when writing seemed to lead some students to place too much emphasis on sounding out words when reading. Instead of concentrating on the meaning of a sentence and developing instant recognition of words, they were content to constantly sound out words. Teachers need to be aware of this phenomenon and emphasize context strategies. Also, along with the writing, teachers need to be reading to the students and encouraging students to read in order to build students' sight vocabularies and background knowledge of words they might use in their writings.

I believe invented spelling has had a definite impact on the attitude of my students toward writing. Their natural desire to write was encouraged, not stifled. They appeared more eager to experiment and test their own theories about our language. They had a better understanding of the basic principles that underly our language system. Children saw writing as fun and were more aware of its functions. They were

proud of what they know about our language system and were willing to take ownership of it.

Implications

There are a growing number of studies today that support the teaching of writing as a natural process to help children develop their literacy skills. Teachers who are concerned about their students' ability to write need to deepen their understanding of this process. Knowing how to intervene and what instructional skills to address depend upon teachers knowledge of the developmental process involved in learning to spell. They need to analyze their current teaching practices in light of this research and be willing to change for the benefit of their students. Effective spelling instruction requires environments in which children are encouraged to read and write extensively and to test, evaluate, and revise their developing theories of how the spelling system works. As teachers observe spelling skills, they must engage pupils in the kinds of cognitive activities that lead to spelling competency.

Researchers are encouraged to continue to investigate the effectiveness of invented spelling as

an instructional approach to writing. More research is needed on the progressive development toward correct spelling for children using invented spelling.

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APPENDICES

Appendix A

Reading and Writing Interest Survey

1. Does your child show an interest in reading at home? _____
2. Does your child read on his own? _____
3. Does your child read to you and other family members? _____
4. Does your child ask you to read to them? _____
5. Do you read to your child on a regular basis? _____
6. How much time on the average do you spend reading to your child each week? _____
7. What kinds of books do they enjoy? _____

8. Does your child attempt to write on their own? _____
9. Do you encourage your child's writing? _____
10. What kinds of writing have they attempted? _____

11. Does your child ask for help in spelling unknown words? _____ How do you respond? _____

12. Does your child express positive feelings toward writing? _____
13. Have you noticed any change in attitude toward writing in the past few weeks? _____

14. Is your child able to read what they write? _____
15. Is your child willing to share their writings with others? _____
16. How do you feel about your child's growth in writing? _____

Appendix B

A B C D E F G H I J K L M N
 O P Q R S T U V W X Y Z

The dog is Happy

The cat is Happy

The fish is Happy

The pig is Happy

The bear is Happy

The sun is Happy