The Impact of Instructional Approaches, Systematic Phonics Instruction and Word Study, on

Second Grade Students' Spelling Development

By Tiffany Harper

Submitted in Partial Fulfillment of the Requirements for the

Degree of Master of Education

July 2016

Graduate Programs in Education

Goucher College

Table of Contents

List of Tables

Abstract

The purpose of this study was to determine the impact of instructional approaches, systematic phonics instruction and word study, on second grade students' spelling development. The measurement tool used in this study was the Primary Spelling Inventory (PSI) from the Words Their Way series. The PSI consists of a list of 26 words that begins with simple CVC words (e.g., fan, pet) and ends with inflected endings (e.g., clapping, riding). This study involved the use of a pretest/posttest design to compare data from September of 2015 (before the intervention was administered) to data from March of 2016 (after the intervention was complete). Achievement gains were made in both the systematic and word study groups, however, there were significant differences in favor of the word study group. These results could be attributed to a number of factors. Research in the area of spelling development should continue given the disagreement over best practices. It is important that students have strong spelling skills as they will be used to communicate effectively in writing and will contribute to their development as readers.

CHAPTER I

INTRODUCTION

Do you remember how you learned to spell? Did your teacher give you word lists in which you were drilled throughout the week to memorize the spellings of the given words? Perhaps you learned through a systematic approach, building from individual letter sounds, to blending and connecting sounds. Maybe, you learned by analyzing spelling patterns within words and engaged in word sorts. There is even a chance that your teacher didn't use any of the latter approaches, or used a combination of them. How then, does a teacher decide which spelling approach is most effective in helping his or her students learn to spell? Approaches that have been proven ineffective are steeped in educational tradition and almost expected to be used, while others that are supported by an overwhelming amount of research and deemed successful are sometimes viewed by parents as a "new method;" which is frequently code for strange and not in support of its use. Which approach is best, or is there truly an approach that is more effective in producing accurate spellers?

Overview

Using correct spelling conventions are viewed by adults and children alike as important in communicating effectively through writing. With such emphasis on spelling correctly, it is in everyone's interest to find the approach to teaching spelling that is most effective in producing "good spellers." It is for this reason that a developmental approach has been accepted as the predominate practice for teaching students to spell. Research has led educators to understand that there are stages in which common developmental themes can be seen across children as they learn to spell and as they move through these developmental stages, students acquire the skills to become better spellers (Schlagal, 2001).

It has been accepted that a comprehensive program include direct approaches to best meet the needs of students. Some proponents of this developmental theory believe that spelling proficiency is achieved through the use of direct, systematic instruction. Direct practice, teaching students to use skills, rules, and strategies to spell unknown words, and using systematic word study activities to connect and extend students' understanding of the spelling system are all suggestions for use in these comprehensive programs. The researcher of this study gained familiarity with two approaches in teaching students to spell, a systematic approach and a word study approach. The research that was conducted explores the impact of using these approaches to teaching spelling.

Statement of Problem

The purpose of this study was to determine the impact of instructional approaches, systematic phonics instruction and word study, on second grade students' spelling development.

Hypothesis

There is no impact of systematic phonics instruction or word study instruction on students' spelling development.

Operational Definitions

The independent variables of the study were the approaches being used, systematic phonics instruction and word study. Systematic phonics instruction is operationally defined as an approach or program with a sequential set of phonics elements that are outlined and whose elements are taught along a dimension of explicitness. In this study, some students participated in a group that used the Systematic Instruction in Phonological Awareness, Phonics, and Sight Words program (SIPPS). This is a systematic decoding curriculum that helps struggling readers develop word-recognition skills and reading fluency. The program has a spelling component as

well. Word study is operationally defined as an approach to teaching spelling that is based in learning word patterns rather than memorizing unconnected words. In this study some students participated in a group that used Words Their Way as the primary means of spelling instruction. The dependent variable is the students' spelling development. Students' spelling development is operationally defined as their performance on the Words Their Way Spelling Inventory as measured by a pretest-posttest comparison design.

CHAPTER II
REVIEW OF THE LITERATURE

Learning to spell is a skill that educators, parents, and students alike realize has to be mastered in order to communicate ideas effectively through writing. Over the years, the various methods to teaching spelling have been investigated to determine their overall effectiveness in building students' spelling ability. Due to this investigation, the idea of spelling being a developmental process has come to the forefront, with proponents valuing word study approaches over traditional rote memorization of specific word lists. With such attention on spelling, it is necessary to understand the importance of spelling development, what spelling development looks like at the various stages, why some students struggle with spelling, and what interventions are used to help struggling students.

The Importance of Spelling Development

We are all familiar with variants of the question on Fridays after school, "How did you do on your spelling test?" More importantly, we know that parents as much as teachers, see spelling as extremely important in children's literacy education, and generally speaking, our society values above all in writing conventions, correct spelling (Beckham-Hungler, Williams, Smith, & Marling, 2003, p. 299). In recent meta-analyses it has been found that papers with misspelled words are scored more harshly for quality of ideas than the same papers with no spelling errors. The research findings indicate that, "misspelled words can make text more difficult to read and can cause readers to devalue the quality of the writer's message" (Graham et al., 2008, as cited in Graham & Santangelo, 2014, p. 1704). Additionally, when students have to spend time figuring out how to spell words correctly, it takes a toll on their other brain processes, which can negatively impact the quality of their writing. Spelling is just as important to writing as it is to reading. It is how ideas are communicated effectively for others to interpret. Learning

to spell can also enhance reading development by "shaping children's knowledge of phonemic awareness, strengthening their grasp of the alphabetic principle, and making sight words easier to remember" (p. 1704). Spelling is important because it must be mastered for students to have success in their overall literacy development. Mastering spelling helps minimize the constraints spelling places on students writing, thereby allowing students to better acquire foundational reading skills.

Through the latter parts of the 20th century numerous studies were conducted supporting the idea that developing word knowledge was key to the reading process. With this research came an acceptance of the concept that spelling is a developmental process, that there are stages in which common developmental themes can be seen across children (Schlagal, 2001). In order to understand the importance of spelling development, we must understand the orthographic record of the English language and how this plays a major role in building a student's understanding of spelling. It is this orthography that forms our spelling system, and therefore the spelling development of students. Our spelling system is tiered, consisting of alphabetic, pattern, and meaning layers, because of shifts in power among various groups (Anglo-Saxons, Normands, French, Greeks, and Romans) between the 11th and 16th centuries. Because our spelling development is based in this tiered system, each tier impacts all areas of reading, thus demonstrating the importance of spelling development.

Invernizzi and Hayes (2004) summarize how the alphabetic portion of the spelling system impacts reading:

> Our spelling system is alphabetic because it represents the relationship between letters and sounds…We can match letters sometimes singly, sometimes in pairs—to speech sounds from left to right to create words. This is the goal of beginning readers and writers

who must move from partial to full use of alphabetic cues to blend both letter sounds to

decode and segment speech sounds to encode. (p. 219)

The pattern layer impacts reading because it explains how we become better readers. By looking

past letter-sound matches and instead for patterns that group letters, developing readers are able

to find consistent categories of patterns that are related to vowel sounds; Bear, Chall, Ehri and

McCormick all found that this "consolidation of letter patterns affords greater fluency in oral

reading and writing, and this orthographic advancement heralds the onset of independent

reading" (as cited in Invernizzi & Hayes, 2004, p. 219). The final tier, the meaning layer, reflects

how groups of letters like prefixes, suffixes, and Greek and Latin stems have important

implications in vocabulary instruction, which also goes hand-in-hand with comprehension.

"Students operating within the meaning layer of English orthography have relatively automatic

word recognition and encoding skills, and thus their minds are free to think as rapidly as they can

read and write" (p. 219).

Organizing a spelling curriculum by the orthographic structures of English allows the

bulk of words to be studied to happen in an "evolutionary progression" (Invernizzi & Hayes,

2004). This then further demonstrates the importance of spelling development; it allows students

to build their skills in both spelling and reading in a more natural, progressive way. Anglo-Saxon

words are the oldest words in English, but are also the easiest to read and the most familiar. They

can be found in high-frequency prepositions, pronouns, conjunctions, and auxiliary verbs; all of

which are the kinds of words beginning readers encounter. More difficult words of one or two

syllables begin to appear with greater frequency in books suitable for use in intermediate

elementary grades. These words come from Norman French words, which occurred during the

Norman Conquest in 1066 and later during the Great Vowel Shift of the 14th century. It makes

sense then that these words are more challenging because they were from a time in which English was being merged with new pronunciations of old words, new vocabulary, and new, or rather, French orthographic conventions by speakers of both languages. This historical period is what brought along variations of vowel sounds represented by vowel digraphs and long vowel patterns. It is interesting that beginning readers make a vowel shift when they transition from an alphabetic stance to a more efficient use of vowel patterns. Invernizzi and Hayes go on to explain the significance of this historical era to spelling development:

> As students' reading vocabularies expand sufficiently to sustain independent reading, their lexical store of known words leads them away from letter-name short-vowel substitutions to the correct spelling of short vowels and to find other ways of representing long vowels. Students begin to take heed of additional silent vowels used to indicate a long-vowel sound and begin to 'use but confuse' long-vowel patterns much like the Noman French Spellings like ROOTE BEER TAITS REELY SWEETE (root beer tastes really sweet) look remarkably like Middle English. (p. 219)

In following along this orthographic progression, English's most difficult words then are of Greek and Latin origin. These words do not regularly appear in reading selections until middle school and beyond, and historically did not appear in English until the Renaissance period in the 16th century. This period required a new, expanded vocabulary to accommodate the mass amount of learning that occurred during this time. "Classical roots and stems had the potential to meet this demand…and the meanings of Latin stems were recognizable despite derivational changes" (p. 219). In summary, the importance of spelling development must be viewed in relation to the historic development of English spelling because the historical perspective explains the basis of how language was formed and therefore how it should be taught. The changes to the English

language did not happen overnight, rather they occurred progressively and with purpose.

Although students' spelling development has been viewed for centuries as important, the approaches that have been used to justify this importance have varied. Therefore, when explaining the importance of spelling development, we must also consider the many approaches and perspectives that have been used to teach spelling. Schlagal (2002), outlines the basic principles and practices that were established between the 18th and 20th centuries based on research and teaching. Essentially, spelling progressed from being a rote memorization task of learning unconnected words, to word lists that became controlled by certain parameters. The parameters followed on a continuum of spelling words from frequency lists (words were from the 4000 most commonly used words), to controlled difficulty of lists by frequency of word length, to word lists highlighting linguistic principles of English spelling (phoneme-grapheme, sound-to-pattern, and meaning-to-pattern), to word lists having organizational principles that can be generalized.

From here research suggested that orthographic patterns taught to students should be introduced in relation to documented developmental trends, and that these words and patterns be subject to periodic review. With further research, trends related to assessment developed, including how spelling words should be given to students (in small amounts across a week), and that spelling instruction should use a test-study-test method (pretests should be used prior to teaching a unit, children should self-correct their errors by copying them over correctly no more than three times, and then a post assessment should take place). Schlagal (2002) ends this summary of principles and practices with the following: "A study method should be taught and practiced (e. g. "look, say, cover, write, check")" (p. 50). Schlagal also included the following recommendations in his summary of research:

1. Students should have ample opportunity to practice and apply growing skills through abundant writing.

2. Opportunities for incidental spelling instruction should be exploited to better meet individual needs, broaden understanding, and assist students in application of the spellings and principles taught.

3. Students should be able to read the words they are being asked to spell.

4. Students should be guided in understanding words by their spoken and written patterns. (p. 50)

So what is the importance of these principles and practices, and how do they relate to the importance of spelling development? It is because of these practices that spelling development is viewed as important. The fact that spelling has been questioned for so long, that various approaches and methods have been debated, that researchers worked for years to find the best approaches proves the importance of spelling development. It is because of this research that spelling is even recognized as a developmental process.

What Spelling Development Looks Like at the Various Stages

Researchers in the mid-1970s became very interested in understanding how children spell words. Read's 1975 research and Chomsky's research in 1979 provided insight into children's understanding of phonology as reflected in their invented spellings, which then led many researchers to investigate the "range of students' orthographic development from its earliest beginnings to its full maturity" (as cited in Schlagal, 2001, p. 153). What was found in later studies was that reading and spelling skills are deeply interrelated. Their work allowed for the creation of a "detailed descriptive system that labels the orthographic features students explore at each stage of their development…they document a movement from concrete phonetic

9

approximations through conventional phonemic choices to increasingly abstract, orthographically driven representations" (p. 153). Although these labels often vary by name they all describe common developmental themes seen across multitudes of children. The labels of these orthographic stages that will be detailed below are: nonphonetic stage, semiphonetic stage, phonetic stage, within word pattern stage, syllable juncture stage, and finally derivational constancy stage.

In the nonphonetic stage of spelling development, children seem to play with letters in an effort to represent language; their efforts at spelling are not informed by any knowledge of phonological characteristics of the alphabet. Additionally, the child may also lack understanding of the entire alphabet, the distinction between upper- and lower-case letters, and the left-to-right direction of English.

The second stage of spelling development, semiphonetic, is when children begin to use the names or principal sounds within the names of letters to represent words or syllables. An understanding of letter-sound correspondence has been developed and children realize that sounds are assigned to letters. Spellings at this stage indicate that a child has developed some phonemic awareness, but it also indicates the limits children have for forming words. At this stage, the child often uses his/her own basic understanding. For example a single letter may be used to represent words, sounds, and syllables (e.g., U for you). Students at the semiphonetic stage of spelling development are gaining knowledge of consonant phonemes but have not yet begun to isolate vowels. They also have difficulty isolating some consonant letter names, particularly w, h, g, and y, and phonemes represented by digraphs because they do not have phonetic clues in their names. "In these instances, children make do as best they can, borrowing phonetic properties from letters that contain some hint of the target phoneme" (Schlagal, 2001, p.

154). Children at this stage are not able to pick out all the phonemes that make up a word or syllable, however they are exploring how these phonemes work together to form words and syllables. This is important to note because it "reveals that it is not an all-or-nothing proposition but, in fact, demonstrates that phonemic awareness emerges over time based on experience and influenced by instruction" (p. 154). As children explore phonemes, they are able to hear sounds first in the initial, then the final, and last in the medial position. At this stage of spelling development, it is appropriate to see children engaged in instruction that supports and builds on their knowledge of simple consonants in the beginning positions. This should then be followed by instruction that teaches simple short vowel word families following the CVC pattern which "reinforces awareness of beginning consonants, forces attention to final consonants, and sensitizes children to vowel coloration when family patterns are contrasted" (p. 155).

The third stage of spelling development is the phonetic stage. Here the child uses a letter or group of letters to represent every speech sound that they hear in a word. Although some of their choices do not follow the rules of conventional English spelling, they are systematic and can be understood; for example KOM for come and EN for in. At this stage children begin using long and short vowels with greater frequency, even if incorrectly. Long vowels tend to be used correctly because they say their names, while short vowels "follow a pattern of letter-name substitutions based on articulatory analysis…children represent a short vowel by choosing the name of a vowel letter that fits most closely with the target short vowel in point of articulation" (Schlagal, 2001, p. 155). Examples of this vowel substitution include bed as bad, sick as sek, and cut as kot. Spellers at this stage may still struggle with some consonant sounds, but these difficulties are often overcome as sight vocabulary increases and letter sounds are taught.

Within Word Pattern marks the fourth stage of spelling development. At this stage,

students are becoming more attentive to more abstract features of spelling, namely the role of silent letters and long-vowel patterns. During this stage students don't represent only what can be heard when they are not sure of a long vowel spelling, they instead give more attention to the orthography of English. For example, a phonetic speller may spell boat as bot, whereas a within word speller will spell boat as bote. "The shift in student error-types demonstrates that they understand that spelling involves more than phonological analysis…students are beginning to treat selected phonemes in terms of more complex graphemic patternings" (Schlagal, 2001, p. 157). At the within word stage, instruction generally introduces basic patterns for long vowels in contrast to short vowels, and instruction moves from vowel to vowel beginning with the most common pattern. Never are multiple versions of a long vowel introduced together; the most common pattern must be understood before any variant patterns are introduced. It is appropriate at this stage to also introduce vowel diphthongs once basic long-vowel patterns are understood.

The fifth stage of spelling development, syllable juncture, "forces [students] to think not only at the level of syllable patterns but also across syllables" (Schlagal, 2001, p. 158). It is at this stage that students gain familiarity with how words are manipulated when adding suffixes, particularly inflected endings. For example knowing that when adding –ed or -ing to a CVC word, the consonant needs to be doubled, and knowing when to drop silent e. Instruction at this stage also reviews closed and open syllables in two syllable words and directs students to focus on stress in multisyllabic words and to syllable segmentation.

The sixth and final stage of spelling development is the derivational constancy stage. It is at this period that students begin to realize that orthographic patterns can also have meaning. Schlagal (2001), summarizes what occurs at this stage of development:

A central theme of this advanced stage of word knowledge includes discovering how

derivationally connected words share spelling patterns despite variations in

pronunciation. The power of this derivational economy can be seen in low-frequency

words such as tragedian and telephony which, though strange to the ear, declare

themselves to the eye. That is to say, the semantic core of these words is more clearly

articulated in their orthographic than in their spoken form. (p. 159)

Students at this stage struggle with difficulties within sound variations across common roots and

stems. For example compete and competition, and medicine and medical. Students at this stage

are also grasping the appropriate applications of the –able/-ible, -ant/-ent, -ance/-ence suffixes.

Instruction at this stage focuses on students learning to focus on the meaning/spelling connection

in higher-level vocabulary. Greek and Latin roots are also gradually introduced.

As students move through the developmental stages, it is also important to note how

students acquire the skills to move through the stages. As with any theory, there is disagreement

about how this happens, which has resulted in the caught vs taught argument. According to the

caught viewpoint, "spelling is acquired naturally and effortlessly, much as learning to speak"

(Graham & Santangelo, 2014, p. 1705). Proponents of the caught viewpoint believe that spelling

proficiency happens incidentally through the acts of reading and writing, as an indirect result of

teaching reading, and through informal methods of spelling instruction. Examples of this include

teachers: modeling correct spelling during shared writing activities, providing students with

plenty of opportunity to share and display their writing, and making the most of teachable

moments that occur throughout the school day. On the taught side of the argument, proponents

believe that spelling proficiency is achieved through the use of direct, systematic instruction.

This includes using a variety of activities such as: teaching students how to spell specific words

through direct practice, teaching students how to use skills, rules, and strategies to spell unknown

words, and using systematic word study activities to connect and extend students' understanding of the spelling system. Although there are two sides to this understanding of how students acquire spelling skills, research indicates that each approach has its benefits, and that a comprehensive program should rely both on incidental and direct approaches to best meet the needs of students.

The Reasons Students Struggle with Spelling

Sometimes struggles with spelling can first be found in students' writing in journals. When students make spelling errors teachers sometimes attribute this to carelessness or because the students were focusing on the meaning function of writing more than the form. Teachers also sometimes believe students make these errors because the words are not automatic for them yet, they simply didn't know the word well enough to spell it (Beckham-Hungler, Williams, Smith, & Dudley-Marling, 2003).Struggles with spelling are in most cases attributed to larger problems and these difficulties arise for many different reasons. Although these difficulties can be attributed to learning problems students have, they also can be in part because of the instruction teachers are providing. There is such controversy over what approach is most beneficial that schools often have a variety of approaches being used within their classrooms; sometimes there are even different approaches being used within one classroom. This is to the detriment of students, particularly those that are already struggling, because there isn't any consistency in the instruction they receive from year to year; perhaps even with in one grade level. Schalgal (2002) outlines this problem in his own personal account of a school in a rural community:

> One teacher addresses spelling in mini-workshops but does not test the results of her instruction. Another creates weekly spelling tests from students' misspelled words. Several other teachers create weekly tests from new vocabulary taken from subject areas:

one week the words may be derived from a science unit, the next from a social studies

unit, and so on. One of these teachers tries to highlight the meanings of the vocabulary

words and promote sensitivity to context by placing her vocabulary words in a paragraph

she composes each week. Students are responsible for spelling target words correctly as

well as all other words and punctuation in the paragraph. Yet another teacher is trying to

implement a systematic word study program, but she is finding it difficult to come up

with good lists of words and is also finding it difficult to manage all of the diagnosis and

planning across several groups. At times she feels so hard pressed by the rest of her

curriculum and her lack of confidence in what she is doing that she drops back to whole

group word study, though she knows her low spellers are not "getting it." (p. 45)

Schlagal goes on to explain his observations of this school, noting the feedback he received from

the middle school administrator of the school the children of this rural community will

eventually attend. The administrator explains that students always come to their school from

elementary school with deficiencies in vocabulary and spelling. They then, use an approach in

which students memorize thirty or more Latin and Greek derived words each week to in a way

"catch up" the students. The words are pulled from a large alphabetical source, and no effort is

made to organize the words around specific roots or combining forms to demonstrate the

spelling-meaning connection. This approach although coming with good intentions, will not be

beneficial to the students, especially those that are struggling.

Other researchers have also noted similarities in schools using a variety of approaches at

once to teach students to spell. Johnson (2001) observed this same variety in a metropolitan area,

and noted, "many of the teachers I have observed remain dissatisfied both with what they are

doing and their results" (as cited in Schlagal, 2002, p. 45). Teachers even return to using

15

approaches (for example a basal speller) they know are not beneficial to all of their students because they have more familiarity in using them, and are both overwhelmed and frustrated by the "new" materials and organization involved in using the approaches (for example having three different spelling groups based on students' spelling development levels).

Students also struggle with spelling because of the bases of English itself; "the learning demands are very complex because of the abstractness of written language" (Valtin & Naegele, 2001, p. 37). Spelling takes a toll on developing writers, especially when they are using other brain process in conjunction with spelling—composing writing pieces, using their working memory to form ideas they have yet to write down. Spelling difficulty can arise for many reasons, one of which is related to students not recognizing parts of the orthographic systems— alphabetic, pattern, and meaning—or haven't gained an awareness of how the spelling system works. When students learn to spell they have to "crack the code;" children must learn the structure and function of the symbols and rules for their use. "The learner has to gain cognitive clarity regarding the function and the structure of the alphabetic system. That means the recognition of certain linguistic units represented in the system of writing, such as sounds, words, sentences" and in some cases grammatical features (p. 37). In order to do this students must grasp and master four concepts, all of which are difficult for young children and cause them to struggle. Two of the concepts are related to the meaning component of spelling. "Young children have difficulty concentrating their attention on the form of language and abstracting it from context of activity and content of meaning" this means they have to learn not to associate words with activity or to the object it designates, but to the root itself (p. 37). Additionally, children may not be able to divide semantic units into words, meaning they have not yet recognized that the sequence of spoken words corresponds with written words. The other

16

concepts they must understand are related to the sound and pattern aspects of spelling. Sometimes young children focus on the meaning of words, but in doing so lose focus on the sounds of the words themselves. Additionally children have to become aware of phonemic segments. This ability to segment words into phonemic units and to blend phonemes into words is an integral part of learning to spell and is "mainly a consequence of special experiences with the alphabetic system, be it direct instruction in school or more or less spontaneous learning of reading at the preschool level" (p. 37).

Another reasons students struggle with spelling is because they have developed ineffective strategies for spelling. These strategies unfortunately become imbedded into their practice. In a study comparing good and poor spellers, good spellers showed a better understanding of how to learn words (Valtin & Naegele,1993 as cited in Valtin & Naegele, 2001). Good spellers used a variety of strategies to learn words, for example "look-copy-cover-write-check." They also used a variety of strategies when they didn't know how to spell a word including: trying different spellings to see if it looks correct, using structural knowledge (i.e. using analogies such as rhyme, using the root of words to extend them when using a prefix or suffix), using resources like dictionaries, asking a classmate how to spell the word, or finally finding a synonym that is equivalent to the work they wanted to spell. Poor spellers on the other hand only mentioned one strategy in learning new words—"I read it, then I can spell it" and only one strategy when trying to write a word they don't know how to spell, "I spell it as I speak it" (p. 40). It seems that students then struggle with spelling because they lack word attack strategies, much like when students struggle to read words.

When students struggle with spelling, there is also a psychological component; as students realize their lack of success, a vicious cycle of failure ensues. A growing gap between a

17

child's strategies and classroom learning demands is created when students are at a lower stage of spelling development. This imbalance prevents the child from profiting from the general classroom instruction. With repeated failure, emotional and/or behavioral problems can arise, which then negatively impact the child's ability to learn. Additionally, when a child fails to acquire spelling skills, his or her social relations can be affected "if classmates, friends, parents, and teachers do not understand, react with disapproval, and thus give a child the feeling of failure in every aspect" (Valtin & Naegele, 2001, p. 41). This then adds to the cycle of failure.

The above problems associated with learning to spell have focused on children whose first language is English, but spelling struggles also arise with bilingual students. Research has found that Spanish bilingual students often use their knowledge of Spanish to spell words in English (Invernizzi & Hayes, 2004, p. 221). This is extremely helpful to teachers as it allows the teacher to determine if a child is applying Spanish phonology and orthographic rules to English or vice versa, and if errors made in spelling are "transitioning" errors rather than random errors. The problem for bilingual students making this transition between phonology and orthographic rules is that there may be particular English consonant and vowel sounds that are problematic to them, especially if the alphabet is similar, but the sounds of those letters differ. Spelling also becomes a problem for students coming from backgrounds that do not use the same writing system and from backgrounds in which the sounds of the language are not the same. Korean students for example, may confuse /r/ and /l/ in English because in Hangul, /r/ and /l/ are treated the same and are represented by the same letter (Yang, 2003, as cited in Invernizzi & Hayes, 2004). In order for students to overcome struggles with spelling, teachers can put interventions in place to better assist them in building their understanding of how spelling works.

Spelling Intervention

A well-constructed spelling program consists of parts that address the three systems of our orthography; the alphabetic, pattern, and meaning layers. If the spelling system does not address all of these areas, interventions should fill in the gaps. Although the interventions are numerous, they often relate to a spelling instructional approach, traditional, incidental, or developmental.

One of the most notable traditional interventions, although not effective in helping students make connections to become better spellers, is memorization. This intervention stems from the belief that English spelling is unpredictable, and dominated the first half of the 20th century. Through drill, students learned to spell words. The memorization strategy, also extends into other practices such as the study method (look at the word, say the word, visualize the word, write the word, and check the spelling), copying words repeatedly until they are committed to memory, and the test-study-test approach in which students are given a pretest, use self-correction for errors and then retest (Schlagal, 2001). Although not as common today, teachers today still use these memorization strategies with their students, particularly when assigning homework.

Other traditional interventions relate to the use of systematic phonics programs. A systematic phonics program works by the delineation of a sequential set of phonics elements. The elements are taught along a dimension of explicitness. Many of Orton's methods follow along this systematic approach. Schlagal (2001) outlines Orton's "special methods":

> Orton began retraining with the basic units of speech and spelling (sounds and letters) and taught these to mastery before proceeding to larger units. Great pains were taken to develop accurate links between letters and sounds, and these were continually reviewed to ensure that they remained 'secure.' Strict attention was paid to the clear articulation of

individual sounds…From a firm grapheme-phoneme and phoneme-grapheme base followed the dynamic application of this alphabet knowledge in the 'blending' of letter-sounds into words (decoding) and the 'dissecting' of sounds (phonemic analysis) for spelling." (p. 162-163)

Orton also developed a systematic approach for teaching spelling and decoding for syllable organization. His approach entailed teaching students to apply the alphabetic principle "in the context of a distinctive analysis of syllable types" (p. 163). The syllable types were introduced in the following order: closed syllable, the silent -e syllable, the open syllable, the r-controlled syllable, the consonant –le syllable, and the diphthong or double vowel syllable. Additionally Orton used nonsense words to further extend students decoding and encoding skills, in hopes of reducing the tendency to guess at words. He also began the practice of tapping out phonemes to assist with dissection and blending of words to assist the students that had difficulty accurately spelling short vowels, most notably.

A common intervention that stems from the developmental approach is word study. In word study programs, students study words through the orthographic system. In the alphabetic layer, students look at relationships between letters and sounds, and match single letters and pairs of letters to sounds to create words. In the pattern layer of a word study program, students look for larger patterns that guide groupings of letters, while in the meaning layer students learn how the English spelling system relates to the meaning of words (Williams, Phillips-Birdsong, Hufnagel, Hungler, & Lundstrom, 2009). A word study program, would be a great intervention to use on its own because it follows the patterns in which our spelling system is developed. Research has found major benefits to using wordy study. One is that it helps students learn target words and to apply orthographic features to other words in their writing. It also helps when word

study is linked to interactive writing experiences, as this supports students' spelling and writing development.

Word sorts and word boxes are other interventions that stem from the developmental approach to spelling. Word sorts are typically found in word study programs, but can also be used independent of these programs so long as the words that are selected are related by sound or pattern. "The sorts are purposely created to highlight contrasts of sound, pattern, and/or meaning and are based on the orthographic features emphasized in a given stage of development" (Gehsmann, 2008, p. 2). During a word sort, students sort their words into categories by comparing and contrasting the words based on patterns and sometimes meaning. If a word does not fit into a category, it is placed into an "oddball" group. This could be because the word may contain the pattern but does not follow the sound; for example, "said" uses the long a spelling –ai but is pronounced using the short e sound. Once sorting is complete, students discuss their categories, and the teacher facilitates discussions clarifying misconceptions, and helping to identify the rule. Word boxes, although more closely related to reading, can also be used as a support to students' spelling development. Word boxes are much like Elkonin boxes; a rectangle is divided into sections according to phonemes in a word. Students can use counters or letters, or write letters in the boxes as they say each sound in a word (Joseph, 2002). Word boxes have been proven to be more helpful than traditional phonics approaches in that they allow students to identify and spell target words accurately in sentences, and help students be better able to transfer word identification and spelling skills to words that weren't directly taught but were similar in sound or pattern to what they studied.

Although this shouldn't be used as an intervention all on its own, computer assisted training can provide an additional support in spelling development. Research conducted by

Saine, Lerkkanen, Ahonen, Tolvanen and Lyytinen (2013), found that "computer-assisted training may enrich regular remedial reading intervention and help at-risk children to gain reading and spelling skill" (p. 350). The researchers attributed spelling success to the computer programs because it is fun and motivating. The computer allows for a game aspect, causing students to be more willing to practice literacy skills regularly. Researchers reiterate using the computer-assisted program to support other interventions because there aren't any computer programs that currently provide the full range of intervention support that a well-structured, balanced program includes.

Summary

Spelling development is critical to overall success both in the academic and social realms of life. Through the use of a well-constructed spelling program and interventions, teachers can assist students in "cracking the code" to move through the developmental stages. Educators must understand that spelling is a developmental process, they must understand what is appropriate and what spelling should look like at the various stages of development, they must understand the reasons students struggle with spelling, and utilize interventions to assist them in their learning.

CHAPTER III

METHODS

Design

The purpose of this study was to investigate the differential effects of two instructional approaches—systematic phonics instruction and word study—on the spelling development of second grade students. The researcher gathered data through a pretest/posttest design in this quasi-experimental study.

The independent variables of the study were the approaches being used, systematic phonics instruction and word study. Systematic phonics instruction is operationally defined as an approach or program with a sequential set of phonics elements which are outlined and whose elements are taught along a dimension of explicitness. Word study is operationally defined as an approach to teaching spelling that is based in learning word patterns rather than memorizing unconnected words. The dependent variable for the study was students' spelling development. This was operationally defined as their performance on the Words Their Way Primary Spelling Inventory (PSI) as measured by a pretest-posttest comparison design.

Participants

Participants in the study were students from the same Baltimore County public elementary school, located in the northwest area of the county. All participants were second grade general education students ages 7 or 8. Of the total 36 participants, 17 were female and 19 were male. This was a convenience sample since all students were from the researcher's homeroom classroom or students the researcher worked with throughout the week during the phonics portion of the English/Language Arts block. The students in the sample were predominantly African American-25 students. Other groups represented included: five Caucasian

students, five Latino students, and one Asian student. The sample also consisted of students receiving ESOL services as English was not their first language nor the predominate language spoken in their home. Of the students in the sample, four received ESOL services.

Instrument

The instrument used in this study was the PSI. The PSI consists of a list of 26 words that begins with simple CVC words (e.g., fan, pet) and ends with inflected endings (e.g., clapping, riding). Because the inventory assesses features found in the emergent stage to words in the late within word pattern stage it is recommended for use with students in kindergarten through early third grade. It is for these reasons that the test is valid. Not only does it assess features that are typically present in second grade students, but those features are aligned with the Common Core Standards, which the students are taught to.

The PSI was also determined to be reliable based on the results of the study conducted by Sterbinsky (2007) for the Center for Research in Educational Policy (CREP). The study found "an overall reliability coefficient of .9341. Individual items were then examined to determine if deletion of any items would substantively improve the overall reliability index. No item was recommended for deletion on the basis of the impact on coefficient alpha" (p. 9). The PSI is also reliable. In the same study Sterbinsky determined that:

the "test-retest reliability estimates for the second grade students ranged from a low of .82 when using the Fall 2005 administration as the pretest, to a high of .931 when using the Spring 2006 administration as the pretest… [and] the reliability estimates using the Spring 2006 pretest were at least .90, which is an acceptable level of reliability. The strength of the reliability across four months is clearly evident from these data. All coefficients were significant at the p<.001 level. (p. 15)

24

Procedure

By design, the experiment used two groupings; OX_1O and OX_2O. All students

participating in the study were given the PSI as a pretest in late September of 2015 as the initial

measurement. Students were given this pretest by their homeroom teachers. Students then

received instruction using one of the approaches to teaching spelling—the systematic approach

using SIPPS or the word study approach using Words Their Way—as the treatment. Group 1

participants (X_1) received the SIPPS treatment and Group 2 participants (X_2) received the Words

Their Way treatment. All participants received their treatment for 20 minutes 4 days a week.

Group 1 participants were instructed using all of the activities and procedures outlined in the

SIPPS manual for each SIPPS lesson. Group 2 participants were instructed using some of the

following activities for word study, many of which are suggested in the Words Their Way

instructional materials: introduction/discussion of word sort, blind sorts, word hunts, highlighting

patterns, speed sorts, and finally sort and write. In this treatment group, one or two activities per

day were used for instruction.

Students were not randomly assigned to a group. During the phonics portion of the

morning when students were instructed in their treatment groups, they switched to classes to

work with students at their level of phonics mastery. These levels were determined by the

students' scores on the SIPPS Initial Placement test that was given in early September of 2015.

Because of this, students that tested out of the initial placement test received instruction using the

word study approach, while students that tested within the various sections of the placement test,

worked through the SIPPS program, thereby receiving instruction using the systematic approach.

All study participants were measured using the same Words Their Way Primary Spelling

Inventory from the pretest, for the posttest. Posttest data were collected in late March of 2016.

Students' homeroom teachers also administered the posttest.

RESULTS

Impact of SIPPS and Words Their Way on Spelling Development

This study was designed to determine the impact of instructional approaches, systematic

phonics instruction and word study, on second grade students' spelling development.

The null hypothesis stated that there is no impact of systematic phonics instruction (using SIPPS)

or word study instruction (using Words Their Way) on students' spelling development. In order

to determine the impact of systematic phonics instruction or word study instruction on students'

spelling development, t-tests were run finding significant differences; the word study group

started the intervention with higher achievement, therefore, a second analysis controlling for the

prior achievement was run. The results of this second analysis still found significant differences

in favor of the word study group. Table 1 shows the means and standard deviations for the word

study and systematic phonics groups.

Table 1. *Means and Standard Deviations for the Pre-Test and Post-Test Scores for the Groups*

Group	Pre-Test Mean (Standard Deviation)	Post-Test Mean (Standard Deviation)
SIPPS	9.94 (5.379)	15.18 (5.175)
Words Their Way	18.32 (4.726)	23.00 (2.160)

Independent t-tests were run to examine the differences between the groups at pre-test and post-

test. Results showed significant differences at both pre-test [$t(34) = -4.973$, $p < .01$] and post-test

[$t(34) = -6.036$, $p < .01$]. Since the Words Their Way Group began the study with a significantly

higher level of achievement, an analysis of covariance (ANCOVA) was run to examine if there

were any differences in post-test performance when controlling for student's prior achievement as measured by the pre-test. Results of the ANCOVA shows a significant difference at post-test based on intervention group F (2, 33) = 6.580, p > .05). Even when controlling for prior achievement, the students participating in the Words Their Way intervention had significantly higher performance at post-test. These results and their implications will be discussed in the next chapter.

CHAPTER V

DISCUSSION

The purpose of this study was to investigate the differential effects of two instructional approaches—systematic phonics instruction and word study—on the spelling development of second grade students. The researcher gathered data through a pretest/posttest design in this quasi-experimental study. The hypothesis suggested there is no impact of systematic phonics instruction or word study instruction on students' spelling development. Based on the results, students who received spelling instruction in the both groups made gains in their ability to spell; however, there were significant differences in favor of the word study group. It is for this reason that the hypothesis is not supported.

Implications of the Results

When reviewing the results of this study, there is evidence to support that the Words Their Way program is more effective than SIPPS in developing students' spelling development. Although the results indicate that students in both groups had increased scores from their pre-assessment to their post-assessment, the students participating in the Words Their Way intervention had significantly higher performance at post-test. Students in the words group made progress in their spelling as indicated by the mean post-test score of 23.00; this was on average 7.82 points more than students in the SIPPS group. Even though students in the words group started the intervention with higher achievement, when an analysis of covariance was run to examine these differences, there was still a significant difference found in the impact on spelling with the words group. Thus, word study has a greater impact on students' spelling development than a systematic phonics program despite differences in ability.

Threats to Validity

The study did contain some threats to validity that require discussion. One threat relates to the specific characteristics of the group of students that were given the intervention. The intervention was only given to general education students. Consequently, it is not clear whether either approach would be as effective or a valuable use of time for students reading significantly below grade level or with learning disabilities in reading. Another threat to validity is the outside reading instruction that the students received in the classroom. Students received instruction with reading strategies during other parts of the day when they returned to their classrooms. The reading intervention groups occurred during the phonics portion of the reading block, but reading instruction continued for at least an additional hour and a half.

Another threat to validity was the amount of time the intervention was in place prior to gathering results. The SIPPS curriculum is designed to take place over the course of an entire school year—ten months. Consequently, the results cannot be generalized to what would happen if students completed the full year curriculum. In addition to this time constraint, there were several interruptions that occurred during the course of the study. During the six month study, participants were out of school for several holidays, a week long winter break, and weather related closing. There were times that students did not meet with their groups consistently for four days due to changes in schedules. A more consistent intervention schedule and a longer duration for the study might have yield different results.

Another threat to the validity of this study is that the groups were taught by four different teachers in four different classrooms. The difference in teachers' skills, varying levels of experience with the programs, and classroom characteristics could have also influenced the results of the research. Teachers involved in the study had between one and 20 or more years of

experience. With this experience comes varying levels of classroom management, familiarity with the programs, etc.

After administering the PSI, the researcher noticed that the Words Their Way program suggested giving students that spelled 20 or more of the words correctly on the PSI, the Elementary Spelling Inventory (ESI). This may have threatened the validity of the study because clear evidence of these students' development may not have been obtained because several students had surpassed the limits of the PSI assessment. Perhaps pre-test and post-test data would have been different if the students that passed the PSI were given the ESI.

Connections to Existing Literature

The results indicated that the word study group had a greater impact on students' spelling development than the systematic approach. Research indicates that word study programs are beneficial to spelling development because students study words through the orthographic system and they follow the patterns in which our spelling system is developed. (Williams, et al., 2009). Research has also found major benefits to using wordy study. One is that it helps students learn target words and to apply orthographic features to other words in their writing. It also helps when word study is linked to interactive writing experiences, as this supports students' spelling and writing development.

Joseph and Orlins (2005) determined that using word study techniques in varied academic situations helped students to not only learn their word study words but also deepened vocabulary. In their research they discussed that when teachers provide students with opportunities and expose them to different words to manipulate, the more confident and successful students become with using words. Similar research by Rasinski and Oswald (2005) indicate that when students practice more with words they become comfortable using and writing

31

words. Classes with a structured word study routine helped students make generalizations about words, as well as utilized them in writing.

Teachers work to support students to be "word solvers" which is defined by Pinnell and Fountas (1998), as "readers who can take words apart while reading for meaning, and writers who can construct words while writing to communicate" (p. 14). The teacher needs to set up word study in a structured block that allows students to apply experiences into letter and word formations. Their findings also suggest that instruction focused on teaching children to use phoneme-grapheme relationships, word patterns, and spelling features, and where students learn how to "solve" words with the use of phonics and visual-analysis skills as they read for meaning is beneficial. The research is clear in that a word study approach has a positive impact on spelling development.

When reviewing existing literature, it is also important to look at the work from theorists like Vygotsky. In his theories, he discusses the Zone of Proximal Development (ZPD). ZPD, is the "dynamic region of sensitivity to learning in which children develop through participation with experienced members of culture" (Smith, 1998, p.6). In addition to ZPD, teachers must also scaffold their students' learning. This is another key element to Vygotsky's theories of learning. These elements are essential to understanding students' spelling development and taking a word study approach to teaching spelling. To determine students' ZPD in word study, a teacher may use a word list assessment to see what students know and what students need to learn. Teachers can then apply the principles of scaffolding into their teaching, and support the student. With the repetition, the student then moves into guided practice, where limited teacher assistance is needed. After guided practice comes independent practice, when the student can complete the task on his or her own without support or prompting. The teacher's ultimate goal always remains

to have the student work independently. If a teacher is not working in the zone in which independent or guided practice is comfortable for the student, then the student is at risk of experiencing a level of frustration; thus, the student will shut down and will not be able to take in any new information or understanding. The word study approach takes all of this into consideration, which further supports it being an effective method to use to teach spelling, and perhaps why it was more effective in this study.

Implications for Future Research

Researchers should continue to investigate the findings of the Words Their Way and SIPPS reading interventions and their impact on students' spelling development. It would be useful for researchers to try to identify if the interventions are differentially effective for different population groups; for example English Language Learners (ELL), students with Individualized Education Plans (IEP), etc.

It would also be beneficial to see the difference in scores over a full year of intervention instruction. It is important to note that this data only reports results after 6 months of instruction. It would be beneficial to see if there is more of a difference in the scores over ten months of instruction. This would allow the researcher to see whether the interventions are differently effective if they are implemented as intended. In addition, students would have been able to get further along in the programs, which may have changed the results as well. Future studies may also want to consider using the ESI instead of the PSI for those students with higher ability levels.

Researchers should also consider factors that affect the validity of this study, such as those noted above. For example, if the teachers providing interventions had the same level of understanding of the intervention programs, results may have been different. It also would be

important to consider whether or not participants received additional support in the development of their spelling and how often they worked on spelling outside of the phonics block in future studies.

Conclusions/summary

The study found that Words Their Way differed in effectiveness in impacting second graders' spelling development. Every student under both conditions performed better on the post-test than on the pre-test which suggests both strategies help students develop their spelling skills. However, because the impact on the words group was much greater, it can be concluded that this approach is more effective. Researchers should continue to study the effectiveness of such programs and their impact on students' spelling development. It is important that students have strong spelling skills as they will be used to communicate effectively in writing and they complete the development of a strong reader. If educators are able to identify students' spelling developmental levels, they can provide them with an effective research-based intervention that can be used to make them better readers and overall, more successful students.

References

Beckham-Hungler, D., Williams, C., Smith, K., & Dudley-Marling, C. (2003). Teaching
  words that students misspell: Spelling instruction and young children's writing.
  Language Arts, *80*(4), 299-308. Retrieved from http://search.proquest.com.goucher.
  idm.oclc.org/docview/196865272?accountid=11164.

Gehsmann, K. M. (2008). What is word study and how can I get some? Bringing word
  study instruction to scale. *New England Reading Association Journal*, *44*(1), 1-8,72.
  Retrieved from http://search.proquest.com.goucher.idm.oclc.org/docview/206037631?
  accountid=11164.

Graham, S., & Santangelo, T. (2014). Does spelling instruction make students better spellers,
  readers, and writers? A meta-analytic review. *Reading and Writing, 27*(9), 1703-1743.
  doi: http://dx.doi.org.goucher.idm.oclc.org/10.1007/s11145-014-9517-0.

Joseph, L. M. (2002). Facilitating word recognition and spelling using word boxes and word sort
  phonic procedures. *School Psychology Review*, *31*(1), 122. Retrieved from http://search.
  proquest.com.goucher.idm.oclc.org/docview/219647070?accountid=11164.

Joseph, L. M., & Orlins, A. (2005). Multiple uses of a word study technique. *Reading
  Improvement*, 42(2), 73-79.

Invernizzi, M., & Hayes, L. (2004). Developmental-spelling research: A systematic imperative.
  Reading Research Quarterly, 39(2), 216-228. Retrieved from http://search.proquest.com.
  goucher.idm.oclc.org/docview/212133358?accountid= 11164.

Pinnell, G., & Fountas, I. (1998). Word matters teaching phonics and spelling in the
  reading/writing classroom. Portsmouth, NH: Heinemann.

Rasinski, T., & Oswald, R. (2005). Making and writing words: Constructivist word learning in a

second grade classroom. *Reading and Writing Quarterly*, (21), 151-163.

Saine, N. L., Lerkkanen, M., Ahonen, T., Tolvanen, A., & Lyytinen, H. (2013). Long term

    intervention effects of spelling development for children with compromised preliteracy

    skills. *Reading & Writing Quarterly*, *29*(4), 333. Retrieved fromhttp://search.proquest.

    com.goucher.idm.oclc.org/docview/1413310105?accountid=11164.

Schlagal, B. (2001). Traditional, developmental, and structured language approaches to

    spelling: Review and recommendations. *Annals of Dyslexia*, 51, 147-176. Retrieved from

    http://search.proquest.com.goucher.idm.oclc.org /docview/ 225384295? accountid=11164

Schlagal, B. (2002). Classroom spelling instruction: History, research, and practice. *Reading

    Research and Instruction, 42*(1), 44-57. Retrieved from http://search.proquest.com.

    goucher.idm.oclc.org/docview/205362257?accountid=11164.

Smith, A. (1996). Early childhood educare: Quality programs which care and educate. ERIC.

    EBSCO.

Sterbinsky, A. (2007). *Words their way spelling inventories: Reliability and validity

    analyses*. Retrieved fromhttp://rti.pearsoned.com/docs/RTIsite/Reliability_and_

    Validation_Study_Report.pdf.

Valtin, R., & Naegele, I. M. (2001). Correcting reading and spelling difficulties: A

    balanced model for remedial education. *The Reading Teacher*, *55*(1), 36-45. Retrieved

    from http://search.proquest.com.goucher.idm.oclc.org/docview/203275287?accountid

    =11164.

Williams, C., Phillips-Birdsong, C., Hufnagel, K., Hungler, D., & Lundstrom R.P. (2009).

    Word study instruction in the K-2 classroom. *The Reading Teacher, 62*(7), 570-578

    Retrieved from http://search.proquest.com.goucher.idm.oclc.org/docview/

203282239?accountid=11164.