

The Effects of Foundations and SIPPS Reading Interventions on Phonemic Awareness of Second
Grade Students

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Submitted in Partial Fulfillment of the Requirements for the

Degree of Master of Education

May 2016

Graduate Programs in Education

Goucher College

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ABSTRACT

The purpose of this study was to determine whether the phonemic awareness skills of a group of second grade students reading below grade level, as measured by a verbal nonsense word assessment, differed significantly between those who participated in the Foundations reading intervention and those who participated in the SIPPS (n = 10) reading intervention. The null hypothesis is that there would be no statistically significant difference in the verbal nonsense word test scores of the students receiving the Foundations reading intervention and the students receiving the SIPPS reading intervention. The measurement tool used was a verbal nonsense word list. The results do not indicate that the Foundations or SIPPS interventions differ in their effectiveness in developing students' phonemic awareness skills. On the nonsense word post-test, the mean score of the Foundations group (Mean = 17.18, SD = 2.86) did not differ significantly from the mean score of the SIPPS group (Mean = 15.00, SD = 2.40) [$t(19) = 1.88$, $p = .08$]. The null hypothesis was not rejected. Implications and recommendations for future research are discussed

CHAPTER I

INTRODUCTION

Overview

The National Reading Panel identified phonemic awareness as a key area of literacy instruction. Phonemic awareness is the foundational skill needed for children to distinguish and manipulate the 44 fundamental sounds (phonemes) that make up the English language. Many students come into school knowing their letters, but not the sounds that correlate with the letters. This then becomes an obstacle for students when they are trying to read and write. “Children who are identified as poor readers in first grade are more than likely to remain poor readers in fourth grade” (Menzies, Mahdavi & Lewis, 2008 p. 67). This is a fact that educators need to understand in order to get struggling readers the immediate help they desperately need if they are struggling to read in the early elementary grades. “Poor skills in phonics and phonemic awareness inhibit the development of fluent reading, which in turn leads to less reading practice, diminished vocabulary, less background knowledge, and a host of academic struggles when reading to learn becomes a requirement in the later elementary years” (Rickenbrode & Walsh, 2013, p. 32).

This becomes a real problem for elementary school students. If they are not understanding phonemic awareness in the early elementary grades, they will continue to fall behind in reading.

There is always big talk about the five components of reading. The five components include phonics, phonemic awareness, fluency, vocabulary, and comprehension. However, when looking at the five components it is obvious that four of the components would be hard to master

if you were missing one. If students do not adequately understand phonemic awareness, then they cannot decode words, learn vocabulary, read fluently, or comprehend text independently.

The researcher is a second grade teacher and has seen a number of students who cannot read due to their difficulty with phonemic awareness. The county has implemented and offers many different reading interventions for teachers to use in the classroom. Two of the research based interventions being provided in the county are Foundations (Wilson Reading Intervention) and SIPPS (Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words). It will be important for educators to learn which of these interventions is most effective so that they can select the intervention that will maximize the benefits of instructional time.

Statement of Problem

Are the reading interventions Foundations and SIPPS differentially effective in helping students develop phonemic awareness skills?

Hypothesis

The null hypothesis is that there would be no statistically significant difference in the verbal nonsense word test scores of the students receiving the Foundations reading intervention and the students receiving the SIPPS reading intervention.

Operational Definitions

Phonemic Awareness: the understanding of individual speech sounds. . “Phonemic awareness teaches children to manipulate sounds in spoken language by isolating individual sounds in a word, identifying phonemes, blending a sequence of separately spoken phonemes to form a word, identifying phonemes, segmenting a word into separate sounds, and adding, deleting or

substituting phonemes in words to make new words. Research indicates that awareness of phonemes is necessary to master the alphabetic principle” (Wilson and Colmar, 2008 p. 93).

Wilson Foundations Reading Intervention: a researched based program designed to bring explicit, cumulative, systematic, and multisensory reading instruction to K-3 general education classrooms. The Wilson Foundations program focuses on phonemic awareness, vocabulary, fluency, phonics and word study, and comprehension.

Reading Intervention: a research-based intervention that includes a scripted, routine-based curriculum for teachers to follow. A reading intervention is a program that focuses on the word recognition strategies and skills necessary for developing comprehension strategies” (Pressley, 2014, page 9).

Verbal Nonsense Word Assessment: An assessment made up of twenty-five words that are made up. The students have to read the words using their knowledge of phonemic awareness.

CHAPTER II

REVIEW OF THE LITERATURE

This literature review identifies the importance of phonemic awareness and the interventions that can be used to increase students' phonemic awareness. The first section explores the importance of phonemic awareness. Section two explores phonemic awareness intervention and section three provides an explanation of the importance of interventions. Section four discusses how phonemic awareness impacts students reading and writing. Section five summarizes the literature review.

The Importance of Phonemic Awareness

In 2000, the National Reading Panel identified phonemic awareness as a key area of literacy instruction. (Spencer, Schuele, Guillot & Lee, 2008) Despite its importance, the definition of phonemic awareness is one that has been argued about by professionals for a long time. Walsh (2009) states “a never-ending debate about the role and importance of phonemic awareness has consumed extensive professional time, funding, and journal space.” Some want to say that phonemic awareness and phonics go hand in hand. Others say that is not the case. “The lack of an accurate and consistent definition for phonemic awareness is a major contributor to this unresolved debate in research and practice” (p. 211).

Even though there is a debate over the definition of phonemic awareness, most professionals seem able to agree that phonemic awareness is basically the understanding of individual speech sounds. “Phonemic awareness teaches children to manipulate sounds in spoken language by isolating individual sounds in a word, identifying phonemes, blending a

sequence of separately spoken phonemes to form a word, identifying phonemes, segmenting a word into separate sounds, and adding, deleting or substituting phonemes in words to make new words. Research indicates that awareness of phonemes is necessary to master the alphabetic principle” (Wilson & Colmar, 2008, p. 93) Therefore, phonemic awareness is a skill that all students need to learn to read.

Phonemic awareness is the foundational skill needed for children to better understand how letters and sounds correlate. “Phonemic awareness contributes centrally to children’s acquisition of the alphabetic principle –the understanding that the letters of the alphabet represent phonemes in speech. This understanding makes early phonics instruction useful for children and facilitates children’s ability to blend letter sounds while decoding words, to learn sight words reliably, and to spell phonetically” (Manyak, 2008, p. 659). Children already have some experience with phonemic awareness when learning to talk. They know how to make sounds when they speak, they just need to make the connection that those sounds are correlated with letters.

It is important for educators to understand the importance of phonemic awareness for children learning to read. “Children who are identified as poor readers in first grade are more than likely to remain poor readers in fourth grade” (Menzies, Mahdavi & Lewis, 2008 p. 67). This is a statistic that educators need to understand in order to get struggling readers the immediate help they desperately need if they are struggling to read in the early elementary grades. Many educators are quick to teach phonics instruction without really understanding the impact that phonemic awareness has on the students’ ability to sound out words. If students do not have an understanding of phonemic awareness, they will not be able to understand phonics. “Inadequate phonemic awareness leads to lags in the acquisition of word decoding, which

impairs reading comprehension and reading fluency, resulting in long-lasting, pervasive reading difficulties” (Ukrainetz, Ross, Harm, 2009, p. 88).

Phonemic awareness helps students to become not only better readers, but also better writers. Phonemic awareness is the knowledge of letter sounds to better understand the alphabetic principle. This knowledge is the basis for learning how to read. “Children who do not have an awareness of the sound structure of language cannot attend to the separate sounds in spoken words and are thus unable to establish letter-sound correspondence. The argument contends that these letter-sound links are a foundational skill in decoding and encoding, which are important early skills in reading and writing” (Walsh, 2009, p. 211). Phonemic awareness instruction teaches sounds in isolation so when students are trying to sound out words to read or to spell, they can do so.

Phonemic awareness is also connected to eye movements when reading. Ashby, Dix, Bontrager, Dey & Archer (2013) discuss how the development of phonemic awareness is important because it helps students to move their eyes across the words more easily. This article discussed the connection of eye movement control processes to success in reading. If students have phonemic awareness knowledge, they can read the words more easily which allow their eyes to move at a more appropriate rate rather than stopping at each unknown word.

Phonemic Awareness Interventions/Measures

There are many interventions that can be used to teach phonemic awareness to students. The interventions range from explicit classroom instruction to interventions outside the classroom. Educating teachers about the importance of phonemic awareness and the correct way to teach it is also important in the development of this skill.

Classroom instruction is one of the easiest ways to target students who are struggling with phonemic awareness. Classroom instruction is a Tier 1 intervention. “A Tier 1 intervention consists of high-quality, evidence-based classroom instruction” (Koutsoftas, Harmon & Gray, 2009, p. 116). Gates and Yale (2011) suggest using teaching practices such as letter-sound relationships, five phonic generalizations, and automaticity. These researchers describe teaching the letter-sound relationships as dissecting words that students use daily and analyzing the sounds of letters and the rules for the sounds. The five phonic generalizations include single short vowels, final single vowel consonant-e, vowel digraphs, single consonant sounds, and consonant di-trigraphs. Automaticity refers to explicitly teaching emergent readers letter-sound relationships and having the students automatically read the short vowels in CVC (consonant, vowel, consonant) one-syllable words. As students become more proficient with this skill, teachers can add automaticity with CVCe (consonant, vowel consonant, silent e) words and CVCC (consonant, vowel, consonant, consonant) words.

Manyak (2008) has many suggestions for how to implement phonemic awareness instruction into the classroom. These include teaching beginning-middle-end, say-it-and-move-it, scaffold spelling, word mapping, and word wall boxes. Teaching beginning-middle-end is when the teacher builds a word and asks “where is the ____ sound?” The students identify if the sound is in the beginning, middle, or end of the word. The say-it-and-move-it activity involves students moving tiles one at a time from the top of a piece of paper down to a line at the bottom saying each corresponding phoneme while doing so and then running a finger under the tiles while blending the phonemes to make a word. Scaffold Spelling engages students in carefully stretching out the phonemes in simple words, writing the letters that correspond to those phonemes, and reading the words that they have written. Word Mapping allows students to map

the letters in a word's spelling to the phonemes in its pronunciation. Lastly, word wall boxes are given to students to review high frequency words. The teacher reads a word wall word. The teacher then directs students to boxes on their worksheet and asks students to cross out any boxes beyond those required for phonemes in the word. These classroom strategies can be used to support students' development of phonemic awareness.

The third type of intervention that can be used to support students in the area of phonemic awareness is a pull out intervention. This type of intervention is a Tier 2 intervention. "Tier 2 interventions typically consist of high quality, short term explicit instruction that is carried out in small groups by teachers, reading specialists, speech-language pathologists, or other educators. Results from a meta-analysis of RTI (Response To Intervention) studies reported that approximately 15% of young children receiving Tier 2 instruction will make sufficient progress to return to Tier 1 instruction" (Koutsoftas et al., 2009, p. 117). For the Tier 2 intervention, students would be pulled into a room other than the classroom with a small group of same age peers in order to receive additional support for phonemic awareness. This additional support would include instruction from a certified teacher in a smaller setting. The instruction may be more differentiated than the practices mentioned for the Tier 1 intervention; however, the smaller group gives the teacher the opportunity to teach the students more one on one and to give additional support. Tier 2 intervention is sometimes paired with Tier 1 so the students receive instruction twice a day. Tier 2 instruction is normally 30-45 minutes per day 5 days a week.

Another intervention that can be used to better support students with the understanding of phonemic awareness is to properly educate teachers on how to teach phonemic awareness to students. "The first challenge is to increase educators' awareness and use of research-based practices." (Menzies et al., 2008, p. 67). Given the decreased importance of phonemic skills for

competent adult readers, it is not surprising to find limited skill and understanding about it in adults, including teachers. However, there are implications if classroom teachers are unable to model phonemic segmentation or blending accurately to their students (Walsh, 2009). It is important that teachers have the proper training on how to teach phonemic awareness and recognize its importance. Since adults do not need to use their phonemic awareness as much, they forget the rules of how to teach the children to properly “sound out” letters. Spencer et al., (2008) suggest that teachers can use the knowledge of speech pathologists with learning how to properly teach students phonemic awareness. Wilson and Colmar (2008) suggest using the school counselor to help with teaching students phonemic awareness. These researchers state that, because of the correlation with struggling readers and poor self-esteem, poor attendance, and behavior problems, the school counselor could be helpful with promoting phonemic awareness activities.

Fundations &SIPPS: Research Based Interventions

Another type of phonemic awareness intervention is the Wilson Foundations Program. The Wilson Foundations program focuses on phonemic awareness, vocabulary, fluency, phonics and word study, and comprehension. “Foundations is a research-based program designed to bring explicit, cumulative, systematic, and multisensory reading instruction to K-3 general education classrooms.” (Oglesbee, 2014, p.30). Foundations includes a scripted curriculum for teachers with daily lessons and provides all of the materials needed to implement it. This intervention can be used as a Tier 1 or Tier 2 intervention.

“The Wilson Reading System is a multisensory, phonics-based program developed for students who have difficulty with decoding and encoding. “ (Oglesbee, 2014, p. 27). The

Foundations program uses a sound tapping system early in the program to help students to learn phonemes in words. This technique is used to help students with blending, segmenting, sounding out, and spelling words. In order to use the sound tapping system, students have to know their letter sounds. Students using the Foundations intervention also participate in many tactile activities such as sky writing, word building on magnetic boards, word building on gel boards, and letter-keyword-sound chants. There have been studies conducted on the Wilson Foundations Program. “Feldman (2009) reports students in Grade K and 1 determined to be “at risk” made great gains during the first year of implementation in DIBELS measures. After three years of implementation there was significant improvement in student performance in Grade Three based on the 2008-2009 New York State ELA assessment” (Oglesbee, 2014, p. 32).

The last type of phonemic awareness intervention is the SIPPS (Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words.) The SIPPS “program focuses on the word recognition strategies and skills necessary for developing comprehension strategies” (Pressley, 2014, p. 9). IPPS is a research-based intervention that includes a scripted, routine based curriculum for teachers to follow. “Within the SIPPS program, students will be given explicit phonological awareness and decoding strategies which will improve their word reading skills. The SIPPS program teaches onset and rimes through the phonemic awareness portion of the program. Next students will practice sight words and spelling. This practice will help comprehension and reading speed. Finally, the last part of each lesson incorporates fluency practice. The passages students read for the fluency portion correlate directly with the spelling sound correspondences and include the sight words learned within the program” (Pressley, 2014, pgs. 14-15). When looking at Pressley’s research study, she states that the students in her

research group that were instructed with SIPPS outperformed those students who were not based on the Gates-MacGinitie Reading Test (GMRT).

Importance of Interventions

It is important that educators understand the importance of tiered instruction and the impact of their own knowledge when teaching children phonemic awareness. These interventions are suggested for teaching phonemic awareness because they address the needs of the struggling reader. The Tier 1 intervention of classroom instruction reaches all students with activities to support them in phonemic awareness. The Tier 2 intervention reaches at-risk struggling readers in a smaller setting. This smaller setting allows teachers to reach their students in a therapeutic setting that can best meet their individualized needs.

The last intervention is teachers' knowledge of phonemic awareness. If teachers cannot properly teach phonemic awareness, then students cannot properly learn it. "Teaching children to read is a complex endeavor that educators become adept at only after several years of teaching. The abundance of information now available about how to teach reading effectively provides teachers with more strategies but, at the same time, makes reading instruction more difficult to master. It is important for teachers to come up with a balanced reading instruction plan to guide students into developing phonemic awareness. Without an understanding of the components of effective reading instruction, teachers may not have the skills necessary to prevent reading failure for at risk students" (Menzies et al., 2008, p. 67).). Specific phonemic intervention programs can be important tools for teachers to use in the classroom.

How does phonemic awareness help students to become better readers and writers?

Phonemic awareness helps students to become not only better readers, but also better writers. Phonemic awareness is the knowledge of letter sounds to better understand the alphabetic principle. This knowledge is the basis for learning how to read. “Children who do not have an awareness of the sound structure of language cannot attend to the separate sounds in spoken words and are thus unable to establish letter-sound correspondence. The argument contends that these letter-sound links are a foundational skill in decoding and encoding, which are important early skills in reading and writing” (Walsh, 2009, p. 211). Phonemic awareness instruction teaches sounds in isolation so when students are trying to sound out words to read or spell, they can do so. Phonemic awareness is also connected to eye movements when reading. Ashby et al., (2013) discuss how the development of phonemic awareness is important because it helps students to move their eyes across the words more easily. This article discussed the connection of eye movement control processes to success in reading. If students have phonemic awareness knowledge, they can read the words easier which allow their eyes to move at a more appropriate rate rather than stopping at each unknown word.

When teaching these interventions, the biggest implication for teachers is to ensure they properly understand what they are teaching. After reviewing various scholarly articles, it seems that all of them can concur with the belief that teachers need to understand what they are teaching before their students will be able to master phonemic awareness. Teachers need to have the understanding of letter sounds before teaching children letter sounds.

Summary

The definition of phonemic awareness is the subject of ongoing debate among professionals; however, they can agree that phonemic awareness is the foundation for reading. Giving students the proper tools for understanding that spoken words are made up of speech sounds and how to identify those speech sounds will help students become comfortable in other areas of reading such as phonics instruction and comprehension. In addition to providing adequate classroom instruction and interventions, it is important that teachers are properly trained with the best methods and tools and understand how to teach students phonemic awareness. Students will not learn if teachers are not teaching properly.

CHAPTER III

METHODS

The purpose of this study was to determine the effectiveness of the two reading interventions, *Foundations* and SIPPS, on second grade students' phonemic awareness when reading nonsense words. The null hypothesis was used to test this purpose.

Design

This study's design was static-group comparison. The two reading interventions are being compared to one another based on the results from pre- and post-assessments. The study compared which reading intervention was better with helping the students gain the phonemic awareness skills needed to read the nonsense words on the post-assessment.

The independent variable was the type of reading intervention that the students' received- either *Foundations* or SIPPS. The dependent variable was the scores on the nonsense word test.

Participants

The participants in this study are twenty second-grade students located in a county on the East Coast. One group of ten students received the SIPPS reading intervention while the other group of ten students received the *Foundations* reading intervention. Ten of the students attended one school (RW) and ten students attended another school in the county (JE). The RW elementary school has 533 students while the JE elementary school has 573 students. The RW elementary school has 12.9% of students who receive special education services while the JE elementary school has 9% of students who receive such services. The RW elementary school has 33% of students who are considered FARMS while the JE elementary school has 18% of students who are considered FARMS.

The ten students who received the *Foundations* intervention at the RW elementary school

were made up of five boys and five girls. Two of the students were Hispanic, three were African American, one was mixed races, and four were Caucasian. Two students are ELL, three students receive special education services, and the other five are considered below grade level readers. The students were provided instruction from the *Foundations* curriculum for forty-five minutes each day for six weeks.

The ten students at the JE elementary school received the *SIPPS* intervention each day for forty-five minutes. The group of ten students was comprised of three girls and seven boys. Four of the students were Caucasian, three were mixed race, two were Hispanic, and one student was African American. Two students were ELL, four students received special education services, and four were considered below grade level readers.

Instrument

The instrument that was used for this study was a nonsense word test. The same nonsense word test was used for the pre- and post- assessment. The nonsense word test was created by the researcher based on the nonsense words from the *Foundations* intervention. The researcher looked at the list of nonsense words suggested for *Foundations* units one through twelve and took two nonsense words from units one through eleven and three words from unit twelve selected at random. There were a total of twenty-five nonsense words on the pre-and post-assessment. There is no reliability or validity data available for this instrument.

Procedure

For this study, the students came from two different schools receiving two different reading interventions. At RW and JE, the students were pulled out in the morning to complete their nonsense word pre-assessment. The students were given five seconds to read each of the words

correctly.

At RW elementary, the students were participating in the *Foundations* reading intervention. When the pre-assessment was given the students had completed only one unit of *Foundations*. The students began the *Foundations* intervention the beginning of September. The *Foundations* Intervention was taught for forty-five minutes each day. In unit one the students reviewed all consonant and vowel sounds as well as the digraph sounds for ch, sh, th, ck, and wh. The students also learned about blends and words with closed syllables. The students learned that if the vowel was short in a word and it had consonant, vowel, consonant, it was a closed syllable.

Once the pre-tests were completed, the students began working on unit two of *Foundations*. The forty-five minute block includes a similar routine each day that is scripted for the teacher. The students began each lesson with the letter-keyword-sound drill. This drill is composed of the students saying the sounds for short vowels, consonants, digraphs, and glued sounds. The students lead this drill. When the students master sounds they do not have to be reviewed during the drill. After the drill, the students either review trick words or learn a word of the day. The students then complete some sort of writing activity or word building activity to practice spelling words and then mark the words with *Foundations* marks. The last piece of *Foundations* lesson is story time. This is when the students read a short passage that includes sounds that were just learned in that unit to be reviewed with the students.

Unit two of *Foundations* was taught for two weeks. Unit two introduced the glued sounds ang, ank, ing, ink, ong, onk, ung, unk, all, am, an as well as the bonus letters f, l, and s. Over the two weeks that unit two was taught, students participated in a variety of activities. The students learned that if f, l, or s follows a short vowel they have to be doubled. The activity then has students build words like miss, all, fall, puff, and place on their magnetic letter boards. The

teacher says the word, the students echo, and then the students tap out the word before building it. The students also learned the trick words shall, full, and pull. The students go on through unit two to learn the words of the day that include toss, stall, chunk, and stamp. For the word of the day the students tap the sounds in the word, say the word, write the word, and write the word in a sentence. The teacher talks to the students about the word's meaning before having the students write the words down.

Also during unit two, the students learn about r-controlled vowels. These include the sounds for ir, er, ur, ar, and or. The students are introduced to the sounds on a poster that hangs in the room for the students to reference. Students in unit two are also taught the glued sounds ang, ank, ong, onk, ing, ink, ung, unk, am, an, and all. They are taught the letter-keyword-sound for each glued sound. (ang-fang-ang, ank-bank-ank, -ong-song-ong-onk-honk-onk, ing-ring-ing, ink-pink-ink, ung-lung-ung, am-ham-am, an-fan,an, all-ball-all) The students are given these glued sounds to put on their magnetic letter boards. All of the letters for glued sounds are on one tile.

(Example: Stamp= s t am p) The students work with these glued sounds by building words on the magnetic letter tiles, writing them on white boards, and writing them in their composition books. Lastly, the students focused on the story *Skip is Sick*. While reading the story over two weeks they were required to answer questions about the text, find words in the text with blends, glued sounds, and bonus letters. The students read the text in pairs, whole group, and independently.

Unit three of *Foundations* was taught for four weeks. In unit three the students were introduced to closed syllable exceptions. These are glued sounds that have a vowel that makes the long vowel sound rather than the short vowel sound. The closed syllable exceptions include ild, ind, old, olt, and ost. The letter-keyword-sound for these glued sounds are ild-wild-ild, ind-find-ind, old-cold-old, olt-colt-olt, and ost-post-ost. During this unit the students build the words,

write the words, and mark up the words that have closed syllable exceptions. The students learned two “word of the day” in this unit – “mind” and “bolt”. The students also learned the vowel teams which included ai, ay, ee, ea,ey, oi, oy, ou,oo,ue,ew,au, and aw. The students learned a new vowel team each day from a poster that was hanging in the room. The students learned the trick words “done”, “goes”, and “pretty”. Lastly, the students read the text *The Lost Colt* in order to read fluently, visualize the text, and answer questions about the text.

The students in the SIPPS intervention at the JE elementary school started Unit 1 in September and ended with Unit 16 before they took their post-assessment. Each unit in the SIPPS intervention is scripted for the teacher. The SIPPS intervention tells the teacher exactly what to say and do.

The SIPPS intervention follows a similar routine each day. The students begin each day with single-syllable phonics. This is when the students review sounds of letters that have been taught. This is optional for teachers because as the students master the sounds, they do not have to practice them each day. The teacher points to the letter and says “sound”, the students then say the sound. The teacher then reviews mixed words and syllable types with the students. The teacher points to the left of the word and says “read” and as the students read the words she swipes her finger across the word. The students then review irregular words. These are the same as sight words. The teacher says “read”, “spell”, “read”. The students complete those directions when given for each word shown.

The next part of the lesson goes into basic concepts. The basic concepts include reviews of vowel and consonant sounds. This included having the students sound out nonsense words. The next part of the lesson was syllabic transformations. This was when the students learned about open and closed syllables. They learned if the vowel inside a word was short or long and that

distinguished whether or not it is open or closed. This activity has the students write a syllable and then add or remove a letter. The students then read each syllable that is written. This strategy helps the students with gaining accuracy and speed in identifying open and closed syllables. The students learn morphemic transformations that include prefixes, suffixes, and inflectional endings. The students review sight syllables that are made up of Greek and Latin roots, prefixes, and suffixes. The last segment of the lessons included fluency practice with daily reading. This is when the students read a selected trade book and the teacher monitors the students' fluency, comprehension, and reading accuracy.

In lessons 1-16, the students learned a variety of skills. The students start the lessons by learning to just read syllables. For example they start with a nonsense word like pim. The teacher will point to the p and say read and the students will say the p sound. She will then say read and swipe under the pi so the students say the sounds p and i. The teacher will then say read and swipe the entire word so the students say pim. The students then practice this skill with words such as ma, did, skid, crab, and fled.

The students then learn about letters that have different sounds like y making the y sound in my and the e sound in baby. They learn sight syllables -ly, -er, -gle, -ble, -ple, -ish, -dle, -tle, -ad, -cent, -ex, -pic, -sym, -ment, -duct, -sys, -less, -in, -sub, -est, -tion, -ac, -de, -nect, -dif, -per, -mem, -ness, -al, -mid, -un, -re, -vent, -ob, -ult, -co, -multi, and -ject. The students then read by syllables after learning each sight syllable. For example after learning -ject, the students practice reading the word subject and project. The students did this during each lesson after learning the sight syllable. Embedded in each lesson is practice of irregular words, reading, and guided spelling. During guided spelling the teacher says say the word, say the word by syllables, write the syllable, and say and spell the word by syllables.

At the end of six weeks, the students were assessed using the same nonsense words that were on the pre-assessment. The students were assessed in the mornings in a quiet area while the other students in the class read.

CHAPTER IV

RESULTS

The purpose of this study was to determine whether there was a statistically significant difference in students' phonemic awareness after participating in the Foundations or SIPPS program. Achievement was assessed using a nonsense word test. On the nonsense word post-test, the mean score of the Foundations group (Mean = 17.18, SD = 2.86) did not differ significantly from the mean score of the SIPPS group (Mean = 15.00, SD = 2.40) [$t(19) = 1.88$, $p = .08$]. Consequently, the null hypothesis that there would be no statistically significant difference in the verbal nonsense word test scores of the students receiving the Foundations reading intervention and the students receiving the SIPPS reading intervention failed to be rejected.

Table 1. Means, Standard Deviations, and t-test Result of Foundations and SIPPS

Groups on Nonsense Word Post- Test

Group	N	Mean	Std. Deviation	t-statistic
Foundations	11	17.18	2.86	1.88 (NS)
SIPPS	10	15.00	2.40	

NS = non-significant at $p < .05$

CHAPTER V

DISCUSSION

The purpose of this study was to determine whether the phonemic awareness skills of a group of second grade students reading below grade level, as measured by a verbal nonsense word assessment, differed significantly between those who participated in the Foundations reading intervention and those who participated in the SIPPS reading intervention. The null hypothesis that there would be no statistically significant difference in the verbal nonsense word test scores of the students receiving the Foundations reading intervention and the students receiving the SIPPS reading intervention failed to be rejected.

Implications of the Results

When reviewing the results of this study, there is no evidence to support that the Foundations or SIPPS interventions differ in their effectiveness in developing students' phonemic awareness skills. However, although not assessed through statistical analyses, a review of scores indicates that all of the students in the interventions had increased scores from their pre-assessment to their post-assessment. Thus, an important implication of the study is that the results suggest that both evidence-based programs deliver what is needed to teach phonemic awareness.

Performances under the two conditions probably did not differ because of the great similarity between the programs. Both interventions are research-and routine-based and are very similar scripted programs. Both programs have students practice sight words, spelling, fluency, decoding strategies, and word recognition skills. Also, both programs provide teachers with explicit instructions of how to teach the program as well as a professional development session on how to use the materials they are provided. This is important as mentioned by Menzies et al.

(2008) that “without an understanding of the components of effective reading instruction, teachers may not have the skills necessary to prevent reading failure for at-risk students” (p. 67). These two reading interventions ensure that teachers know what they are teaching because it is scripted in front of them and explains exactly how the skills should be taught. This suggests that as long as a phonemics instructional program contains certain content and activities similar to Foundations and SIPPS and is well scripted and explanatory, it will likely be effective in teaching phonemic skills.

It is important that administrators understand that “children who are identified as poor readers in first grade are more than likely to remain poor readers in fourth grade” (Menzies et al., 2008, p. 67). This means that poor readers need to be identified and put into a reading intervention as soon as possible so they do not fall further behind as they move to higher-grade levels. The current results suggest that either Foundations or SIPPS would be useful early intervention strategies.

Since the two interventions appear to be equally effective, school administrators will need to take into account other considerations when choosing between the two methods. These scripted programs are very similar with how the teacher delivers instruction so one is not more difficult for the teacher to deliver or prepare for than the other. In both Foundations and SIPPS groups, the students seem engaged and motivated to learn. However, Foundations does supply more hands on manipulatives that permits the students to have a more hands-on experience when learning. It could also come down to their budget. One Foundations teacher’s kit with all teacher materials and one student kit costs \$559.00. This means that additional student kits would have to be purchased for each student in the classroom. Each student kit costs \$58.00. For a classroom of twenty students it would cost about \$1,719.00. This information was located at

<https://store.wilsonlanguage.com/>. The SIPPS intervention costs about \$950.00. This information was located at <https://www.collaborativeclassroom.org/product-type/sipps/cost-effective-combination-kits>. This is because there are not as many student materials as the Foundations intervention. Consequently, the SIPPS program appears to be equally efficacious as the Foundations program but is less expensive if using it with a large number of students.

Theoretical Consequences

The results of this study do not provide evidence that either Foundations or SIPPS interventions is more effective than the other in developing students' phonemic awareness skills. The results of this study do support the theory and literature on tier 1 interventions. Koutsoftas et al., Gray (2009, p. 116) discussed that the best type of intervention to use is using classroom instruction as a Tier 1 intervention. This classroom intervention should consist of high quality, evidence based classroom instruction. This is what the Foundations and SIPPS intervention delivers to students and teachers.

Another implication of the study is that it is consistent with the theory about the importance of explicitly teaching phonemic awareness to low ability readers. As explained by Wilson and Colmar (2008), phonemic awareness “teaches children to manipulate sounds in spoken language by isolating individual sounds in a word, identifying phonemes, blending a sequence of separately spoken phonemes to form a word, identifying phonemes, segmenting a word into separate sounds, and adding, deleting or substituting phonemes in words to make new words. Research indicates that awareness of phonemes is necessary to master the alphabetic principle” (p. 93). As noted by Manyak (2008) “Phonemic awareness contributes centrally to children’s acquisition of the alphabetic principle –the understanding that the letters of the alphabet represent phonemes in speech. This understanding makes early phonics instruction

useful for children and facilitates children's ability to blend letter sounds while decoding words, to learn sight words reliably, and to spell phonetically" (p. 659). Both reading interventions, Foundations and SIPP, teach the understanding that letters of the alphabet represent phonemes which is the alphabetic principle and is imperative to help students to acquire phonemic awareness.

Threats to Validity

The study did contain some threats to validity that require discussion. There were multiple threats to external validity. One threat relates to the specific characteristics of the group of students that were given the intervention. The intervention was only given to a group of students that were reading below grade level. Consequently, it is not clear whether it would be effective or a valuable use of time for students reading at or above grade level.

Another threat to validity is the outside reading instruction that the students received in the classroom. Even though the students were in the reading intervention, they also received instruction on reading strategies during other parts of the day. The reading intervention took place during the word work time block in the schedule but reading instruction was also happening during the reading time block in the schedule. It is possible that there could have been multiple-treatment interference.

Another threat to external validity was the amount of time the intervention was in place prior to gathering dependent variable results. The curriculums are 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.

Another threat to external validity was that the students were assessed using only nonsense words. Although this eliminates the risk of students knowing a word as a sight word, it

also means that it is not clear whether similar results would be found with real words or words within meaningful context.

There were multiple threats to internal validity. The groups were taught by two different teachers in two different classrooms. The difference in teachers' skills and classroom characteristics could have also influenced the results of the research.

Another internal validity threat relates to instrumentation. The nonsense words were taken from the Foundations nonsense word list from units one through fourteen. None of the nonsense words were explicitly taught, however, it may have had a slight impact on the students' assessment.

Connections to Previous Studies/ Existing Literature

The results indicated that there was not any significant difference in the scores of students who were in the Foundations reading intervention versus the students who were in the SIPPS reading intervention. This could be because both interventions have very similar teaching strategies. Gates and Yale (2011) suggest that phonemic awareness is taught by teaching the letter-sound relationships as dissecting words that students use daily and analyzing the sounds of letters and the rules for the sounds. The five phonic generalizations include single short vowels, final single vowel consonant-e, vowel digraphs, single consonant sounds, and consonant digraphs. Automaticity refers to explicitly teaching emergent readers letter-sound relationships and having the students automatically read the short vowels in CVC (consonant, vowel, consonant) one-syllable words. As students become more proficient with this skill, teachers can add automaticity with CVCe (consonant, vowel consonant, silent e) words and CVCC (consonant, vowel, consonant, consonant) words. This is what both the Foundations and SIPPS interventions do in their instruction. Students are explicitly taught letter-sound relationships and

identify the consonants and vowels in words as well as the rules that follow with each word structure. The fact that the students improved in phonemic awareness skills after the Foundations and SIPPS interventions is consistent with the literature that discusses the methods of phonemic instruction.

Although there have not been any studies explicitly comparing the two reading intervention Foundations and SIPPS, there has been reports of their effectiveness. A report came out for the Foundations intervention that showed that “students in Grade K and 1 determined to be “at-risk” made great gains during the first year of implementation in DIBELS measures”. After three years of implementation there was significant improvement in student performance in Grade Three based on the 2008-2009 New York State ELA assessment” (Oglesbee, 2014, p.32). Although the current study did not specifically compare pre- and post- scores within an intervention, a qualitative review of the data indicates that students made improvements in phonemic awareness skills while participating in the Foundations program.

When looking at Pressley’s (2014) research study for the SIPPS intervention, she states that the students in her research group that were instructed with SIPPS out-performed those students who were not based on the Gates-MacGinitie Reading Test (GMRT). Although Pressley found that the SIPPS students outperformed controls in her study, the controls in her study were not using the Foundations program. Current findings, when viewed qualitatively, also suggest that the SIPPS program is effective.

Implications for Future Research

Researchers should continue to investigate the findings of the Foundations and SIPPS reading interventions and their impact on students’ phonemic awareness. Researchers should use

randomly assigned groups of students and study a variety of populations. It would be useful for researchers to try to identify if the interventions are differentially effective for different population groups.

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 was only shown after eight weeks of instruction. It would be beneficial to see if there is more of a difference in the scores over ten months of instruction with the intervention from the first unit to the last unit. This would allow the researcher to see whether the interventions are differently effective if they are implemented as intended by the curriculum designers.

It would be helpful to see how the students performed when using standard words read within a context as a formal verbal assessment rather than nonsense words. This strategy could have possibly been assessed by having the students read a reading passage that was timed. This would allow researchers to determine whether the intervention is effective in helping students in real world reading tasks.

Conclusions/ Summary

The study did not find that Foundations or SIPPS differed in effectiveness in helping below grade level second grade readers demonstrate phonemic awareness skills with nonsense words. However, every student under both conditions performed better on the post-test than on the pre-test. This suggests both strategies help students develop their phonemic awareness skills. Researchers should continue to study the effectiveness of reading interventions such as Foundations and SIPPS and their impact on students' phonemic awareness skills. It is important that students have phonemic awareness understanding in order to become strong readers. If educators are able to identify the below grade level reading students and can provide them with

one of these research-based interventions that will allow them to receive the intervention during classroom time, they should show gains on their phonemic awareness which in turn will make them better readers.

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