DEVELOPMENTALLY APPROPRIATE SPELLING AND PHONICS INSTRUCTION AND ITS IMPACT ON STUDENT LEVEL OF ORTHOGRAPHY, DECODING ABILITY, AND READING ACCURACY

by

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ABSTRACT

The purpose of this study was to examine how a students’ level of orthography, decoding ability, and reading accuracy change because of participating in developmentally appropriate spelling and phonics small group instruction. The intervention consisted of students being grouped based on the results of their Words Their Way Primary Spelling Inventory Feature Guide. Students would then work on specific phonics and spelling patterns during workshop time. The study was conducted in a first-grade classroom with 11 students. Data were collected from ten students and a quantitative method design was used. Measures included DRA2, Words Their Way Primary Spelling Inventory, and CORE Phonics Survey. Results indicated that there appears to be a relationship between small group instruction and the students’ ability to score higher on skills measuring orthography and decoding that they were exposed to during the intervention period. However, there does not seem to be a relationship between small group instruction and growth in reading accuracy.

Keywords: Consortium on Reading Excellence (CORE) Phonics Survey, DRA2 (Developmental Reading Assessment), Words Their WayPrimary Spelling Inventory
Phonics is one of the five essential components of an effective reading instruction program. “Phonics has been and still continues to be the most controversial issue in reading” (Cunningham, 2011, p. 199). There has been a debate between educators and parents about the role of phonics in the teaching of reading for many years. Skepticism grew because many phonics programs were thought to be the answer for all students’ reading problems (Cunningham, 2011). However, some children need more instruction than others. According to Vaughn and Linan-Thompson (2004), phonics might also be called the “letter-sound-correspondences, letter-sound relationships, and sound-symbol associations” (p. 30). Phonics instruction involves teaching students that the words they speak and read are represented by letters that are pronounced with different sounds. An example of this would be that the letter a has six different sounds; short /a/ in the word and; made has a long /a/ sound; agree is a schwa; the /a/ in art is r-controlled. There are no names for the sound /a/ represents in the words talk and care. There are still more words that contain the letter a that do not sound like any of those six common sounds. The words eat, coat, and legal fall into this category (Cunningham, 2011).

Phonics instruction is designed for children in primary grades or for struggling readers. While most basal reading series in classrooms today incorporate phonics lessons, many do not meet the needs of all students. This means that teachers need to
provide those students with intensive differentiated phonics instruction during a small
group work period in addition to the whole group lesson.

**Background**

The current study was conducted in an urban school district located in the
Midwestern United States. The elementary school is one of ten located within this
district. This school serves 428 students from kindergarten to sixth grade. Within this
school are three kindergarten teachers, three first-grade teachers, four second-grade
teachers, three third-grade teachers, three fourth-grade teachers, three fifth-grade
teachers, and two sixth-grade teachers. There are also three full-time intervention
specialists as well as six Title 1 Tutors. One hundred percent of the school population is
low income; therefore, those students qualify for free and reduced lunch. On the 2016-
2017 State School Report Card, this school did not meet the indicators for Reading
Achievement in third, fourth, fifth, or sixth grades; however, the school did meet the

The researcher graduated from Wright State University in 2009 with a Bachelor
of Arts Degree in Education. She obtained her 4th/5th grade endorsement from Wright
State University in 2010. The 2017-2018 school year was her eighth-year teaching in a
full-time position. The researcher has taught first grade for seven years. She completed
her third year as a first-grade teacher in this school in 2017-2018.

**Statement of the Problem**

While working with her first-grade class, the researcher observed that students
could earn a perfect score on weekly spelling tests that focused on a specific phonics
pattern. However, students were unable to recognize the same words and/or word
patterns in other contexts such as reading and writing. Students frequently misspelled unfamiliar words that followed the same pattern but were not on the list of studied words. The researcher had used the phonics program built into the basal reading series curriculum, *Journeys* (Baumann et al., 2011), but it did not meet the needs of the students and often progressed too quickly. There were no individualized phonics lessons, but rather there was a whole group lesson. All students were expected to do the same phonics instruction whether they were developmentally ready or not. There were many students without the proper phonics foundation, therefore their reading levels either grew very little or did not grow at all. The purpose of this study was to examine the effect of developmentally appropriate spelling and phonics small group instruction had on students’ reading level, decoding ability, and level of orthography.

**Significance of the Research**

The importance of meeting the needs of all students is at the forefront of education due to the increasing demands of standardized testing and varying abilities within each classroom. According to the International Reading Association and the National Association for the Education of Young Children (1998), “it is common to find within a kindergarten classroom a five-year range in children’s literacy-related skills and functioning” which means that some students will have “skills characteristic of the typical three-year-old, while others might be functioning at the level of the typical eight-year old” (p. 2). While there will be expected growth in kindergarten, there will still be students who are performing above and below grade level in first grade. This study will provide invaluable insight for the researcher and other educators on how to differentiate small group instruction of phonics and spelling and the impact it will have on students’
reading abilities. This study will have the most significance for the students involved and their ability to apply the knowledge gained to improve their decoding and their reading levels.

**Research Question**

Based on the need identified in the first-grade classroom, this research question was developed: How does a students’ level of orthography, decoding ability, and reading accuracy change because of participating in developmentally appropriate spelling and phonics small group instruction?

**Establishing the Study**

The focus of this study was to determine if developmentally appropriate spelling and phonics small group instruction would impact a student’s level of orthography, decoding ability, and reading accuracy. For this study the researcher, utilized change theory as the theoretical foundation for the study which means by changing her instruction of phonics and spelling, the intention of the researcher was to have a positive outcome in her students’ assessments (Fullen, 2006). The study was initiated by sending a permission slip (Appendix B) home to inform parents of the aspects of the study and to gain consent for their children to participate. The students were also given a statement of assent (Appendix C) if they were age seven or older. This form allowed the students to determine if they would like to participate in the study after the explanation of what the study would entail. The data measures collected were from a pre- and post-assessment from the *Words Their Way* Primary Spelling Inventory (Bear et. al., 2012) (Appendix D) followed by the *CORE Phonics Survey* (Diamond, 2008) (Appendix E). Lastly, the students had the DRA2 (Developmental Reading Assessment) (Beaver, 2006) (Appendix
F) administered to them. The researcher then conducted small group instruction for thirty minutes two times weekly. During this intervention time, the students worked on specific phonics and spelling patterns as determined by analyzing the *Words Their Way* Primary Spelling Inventory. At the end of this study, post-data was collected for the assessments mentioned previously from each student in an individual setting.

For this study to be implemented successfully, each student had to be instructed on their specific phonics needs in a small group setting. The students’ weekly spelling list mirrored this phonics pattern. The students were given small group instruction during the reading workshop block at least two times weekly. The researcher introduced the pattern and the group then worked on picture sorts that contained this same pattern. Then, the small group then worked on the spelling words paying close attention to the phonics pattern within each word.

**Limitations**

A limitation to utilizing the DRA post-assessment was that the pre-assessment data came from Spring 2017 and did not account for the loss some students experience over the summer. Another limitation to this assessment was that the researcher was not the one who assessed the students for the pre-assessment. The previous year’s teacher did this. In addition, the number of students within this study was such a small number that an accurate sampling of first grade students was not truly represented. Furthermore, there was no baseline measure before implementing the intervention which makes it difficult to know how each child progressed.
Definition of Terms

The researcher used the following terms consistently throughout this study.

- **Consortium on Reading Excellence (CORE) Phonics Survey**: An assessment created by CORE that measures a student’s phonics skills starting with letter names and sounds and ending with multisyllabic words (Diamond, 2008).

- **Decoding**: The process of reading letters or letter patterns in a word to determine the meaning of the word; for students, it is a strategy for reading unknown words (Vaughn & Linan-Thompson, 2004).

- **Decodable Text**: Books that allow students to practice new phonics skills comprised largely of words containing previously taught letter-sound relationships and gradually move to less controlled text as their ability and confidence grow. (Vaughn & Linan-Thompson, 2004).

- **Encoding**: to change a message into symbols, as encode oral language into writing (Harris & Hodges, 1995).

- **DRA2 (Developmental Reading Assessment)**: An assessment that is used to measure a child’s reading ability. It identifies reading level, accuracy, fluency, and comprehension (Beaver, 2006).

- **Orthography**: The writing system of a language—specifically, the correct sequence of letters, characters, or symbols (Bear et al., 2012, p. 311).

- **Reading Accuracy**: Also known as reading fluency, the ability to read most words in context quickly, accurately, and with appropriate expression (Cunningham, 2013, p. 75).
• **Spelling Pattern**: A letter sequence that functions as a unit to represent a sound (such as *ai* in *rain*, *pain*, and *train*) or a sequence of vowels and consonants, such as the consonant-vowel-consonant (CVC) pattern in a word such as *rag* or at a syllable juncture such as the VCCV pattern in *button* (Bear et al., 2012, p. 411).

• **Words Their Way Primary Spelling Inventory**: An assessment that measures a students’ ability to spell lists of words specially chosen to represent a variety of spelling features at increasing levels of difficulty (Bear et al., 2012).

• **Workshop**: An instructional model in which 60-90 minute blocks of instruction include interactive read aloud, a mini-lesson, small group guided reading instruction, and conferring, independent reading practice, and a short time for sharing what has been learned (Gehsmann & Templeton, 2011/2012).

**Summary**

The focus of this study was to determine if developmentally appropriate spelling and phonics small group instruction would change a student’s level of orthography, decoding ability, and reading accuracy as measured by the CORE Phonics Survey, the *Words Their Way* Spelling Inventory, and the Developmental Reading Assessment. The subsequent chapter reviews literature from the past and present relating to this study.
Chapter Two

Review of Literature

The review of the literature looked at topics related to teaching phonics in the classroom. These topics included the goals of phonics, the elements of phonics, methods of phonics instruction, effective phonics instruction, and developmentally appropriate spelling and phonics small group instruction.

Goals of Phonics

According to Vaughn and Linan-Thompson (2004), there are two basic processes necessary for students to be successful readers. These processes are “learning to convert letters into recognizable words and understand or comprehending the meaning of print” (Vaughn & Linan-Thompson, 2004, p. 31). Vaughn and Linan-Thompson (2004) went on to explain goals of phonics.

The goals of phonics and word study are to teach children that there are systematic relationships between letters and sounds, that written words are composed of letter patterns representing the sounds of spoken words, that recognizing words quickly and accurately is a way of obtaining meaning from them, and that they can blend sounds to read words and segment words into sounds to spell. (p. 31)

Furthermore, the authors stated that phonics instruction should begin in kindergarten or first grade because this is the time it is most effective (Vaughn and Linan-Thompson
The National Reading Panel Report (National Institute of Child Health and Human Development, 2000) explained that it is important for phonics instruction to happen in the early grades because students have not learned to read independently. Vaughn and Linan-Thompson (2004) also stressed the importance that phonics should not be the entire reading program and suggested incorporating story time, small group instruction, and language activities in addition to a phonics program.

**Elements of Phonics**

When students are presented with an unfamiliar word, they will use one or more elements of phonics to decode that word. “The elements of phonics and word study are: phonological and phonemic awareness, print awareness, alphabetic knowledge and alphabetic principle, decoding, reading practice with decodable text, irregular or high-frequency words, and reading fluency” (Vaughn & Linan-Thompson, 2004, p. 32). The authors had the opinion that there is no sequential order in which these elements must be taught (Vaughn & Linan-Thompson, 2004). However, the National Reading Report (NICHHD, 2000) stated that an effective phonics instruction program must begin with the foundational knowledge of letters and phonemic awareness.

First, children acquire an understanding of words and sounds in words. This ability refers to phonological and phonemic awareness. “Phonological awareness is an awareness of various speech sounds such as syllables, rhyme, and individual phonemes” (Bear, Invernizzi, Templeton, & Johnston, 2012, p. 412). Cunningham (2013) stated that “phonological awareness is developed through a series of stages during which children first become aware that language is made up of individual words, that words are made up of syllables, and that syllables are made up of phonemes” (p. 5). According to Bear et al.
(2012), the best place to begin with emergent learners is with “syllables, rhyme, and alliteration” (p. 126). It is important to point out that a five-year-old may not be able to tell someone that there are three syllables in the word *elephant*, but he or she can clap out the three beats in that word.

Second, to be successful at reading, children must recognize that “words are made up of a discrete set of sounds and to manipulate sounds” (Cunningham, 2013, p. 5). According to Cunningham and Gambrell (2011), “phonemic awareness is one of the best predictors of success in learning to read” (p. 200). Bear et al. (2012) described phonemic awareness as the ability to consciously manipulate individual phonemes in a spoken language (p. 412). Children need to realize that words can be changed by changing sounds. This is an aural ability. Children can hear that two words begin with the same letter, like *car* and *cat*. They can also hear when words rhyme such as *cat* and *hat*. The ability to hear and recognize sounds in words is also a part of phonemic awareness. It is important to allow children to use invented spelling as early as possible to develop a strong sense of phonemic awareness (Cunningham, 2013). Invented spelling, or spell as best as you can, allows children to write without the worry of making a mistake. Invented spelling also offers valuable information about what children know and what they need to learn (Bear et al, 2012). When children begin writing, they may only write one letter to represent a word, but later they will use more letters to form a word by saying the word and stretching it out, so they can distinguish the sound and letter to go with it.
Next, for students to attain the ability to read and write, they must develop the understanding of print awareness and the concepts of print (Cunningham, 2013). Vaughn and Linan-Thompson (2004) went on to define print awareness.

Print awareness is the ability to understand that written language is related to oral language and carries messages, that speech can be written down and read, what is written can be spoken, the length of a spoken word is usually related to the length of the written word, print is read from left to right, the structures of written language are different from those of spoken language, and that is a difference between words and nonwords. (p. 32)

Many children come to school knowing about these concepts by being read to at home. When someone reads to them, they can see how the eyes of the reader move across the words while the person is reading (Cunningham, 2013, p. 5). When children are exposed to concepts of print early on, they know what the teacher is talking about as they are given information. Examples of print concepts are letters, punctuation, space between words, and paragraphs as well as reading from left-to right, top to bottom, and from beginning of the book to the back (Cunningham, 2013).

For children to become successful readers, they must also develop alphabetic knowledge, that is, the ability to recognize upper and lower-case letters and their sounds. One of the first and best ways for children to recite the alphabet is through the Alphabet Song. “Alphabetic knowledge, also known as alphabetic recognition, involves knowing the shapes, names, and sounds of letters and progresses from letter names to shapes to sounds” (Vaughn & Linan-Thompson, 2004, p. 33). Activities to promote this ability should allow students to see, play with, and compare letters. These can also be learned
through songs and games. Children should be using the letters they learn in writing activities. To ensure children become successful readers, it is important to teach letter-sound relationships explicitly and in isolation. This element of phonics instruction is called the alphabetic principle, which means that “letters and letter combinations are used to represent phonemes in orthography” (Bear et al., 2012, p. 409). Orthography, simply put, is the writing system of a language or knowing how a word looks in print. Bear et al. (2012) go further to include the correct sequence of letters, characters, or symbols.

According to Bryant et al. (1997), “no one is properly literate unless he or she has a reasonable understanding of the orthographic patterns that are based on syntactic regularities” (p. 236). While there is no specific pace as to how fast or slow these letter-sound relationships should be taught, it is a good idea to follow the rate in which the students are mastering the concepts. They should be provided with daily use of these letters and sounds. While there are many differences between skilled and unskilled readers, research shows that “skilled readers rely much more heavily on direct connections between orthography and meaning than on context” (Byrnes & Wasik, 2009, p. 205). While spelling and reading are related, they are not a mirror image because the processes are different (Bear et al., 2012). Students are more likely to be able to recognize words in a reading passage but spell them incorrectly. Keeping this in mind, spelling helps educators measure what a child knows about words.

With the Common Core State Standards (Ohio Department of Education, 2018), emphasis is placed on the importance of differentiated instruction. While most commercial reading programs do not meet the needs of every student, teachers are tasked with the implementation of small group instruction to meet these needs. Small group
instruction is a good time for teachers to find the student’s areas of strength and build upon them. Students will become successful if they are taught at their instructional levels rather than frustration levels. It is extremely important for a teacher to know what to teach and how to teach it. One good way to implement small group instruction is with the Workshop Model. Within a reading and writing workshop, there is a 60-90-minute instructional block. During this time, there is an interactive read aloud, a mini-lesson, small group guided reading instruction and conferring, independent reading practice, and a short time for sharing what the students have learned (Gehsmann & Templeton, 2011, 2012). This allows for whole group instruction but with intentional, individualized small group instruction based on students’ needs.

Research on literacy development has shown that the way young children, older students, and adults spell words provide an invaluable insight to how they read words (Gehsmann, & Templeton, 2011/2012). There is a correlation between acquisition of word knowledge and access to and processing of written texts. The more a child understands about orthography, the more quickly they can identify words they read and generate words they write. The authors go on to explain that research has also shown parallels between spelling, reading, and writing development.

For example, children who spell the word *kitten* as KETN read “word by word”, identify few printed words out of context, is usually comfortable reading at a Guided Reading Level C (see Fountas and Pinnell, 1999), and writes words slowly—carefully matching letters to sounds. The learner who spells *wait* as WATE reads approximately 80-100 words per minute, can identify approximately
200 decontextualized words by sight, reads at Levels G or H, and sounds more “natural” when reading aloud. (Gehsmann, & Templeton, 2011/2012, p. 6)

If educators take the time to analyze spelling tests instead of giving a list of words for students to memorize, invaluable insight can be gained into their reading level as well.

Soon students progress to reading and sounding out, or decoding, words. Decoding has been described as the foundation on which all other reading instruction is built. “Decoding is the process of reading letters or letter patterns in a word to determine the meaning of the word; for students, it is a strategy for reading unknown words” ( Vaughn & Linan-Thompson, 2004, p. 34). The authors pointed out that once students can decode successfully, they will be able to concentrate on the meaning of what they are reading ( Vaughn & Linan-Thompson, 2004). Word families, spelling patterns, and onsets and rimes are the beginning points to this process. Using decodable text provides teachers the “opportunity to model how to blend and segment sounds, sound out unknown words, and use onset rimes or word chunks to decode words” ( Vaughn & Linan-Thompson, 2004, p. 34). As well as decoding the words in a text, students should be given the opportunity to discuss what they have read. Children who can do this will then understand that they not only read for pleasure, but the main purpose of reading is to get meaning (Cunningham, 2013). While some research supports the use of decodable texts to improve a student’s ability to decode words, the National Reading Panel stated that there is very little evidence to support the effectiveness of decodable texts in phonics instruction due to a limited amount of research (NICHHD, 2000).

Next, students will be exposed to words they will have problems decoding because they are not sounded out as the students have previously learned. “Irregular
words are words that cannot be read through decoding” (Vaughn & Linan-Thompson, 2004, p. 35). In these words, some or most of the letters do not represent the sound with which they are most commonly associated. Students will need to master these words by sight, and there are different types of lists used in classrooms. McKenna and Stahl (2009) stated that two of the most commonly used lists for primary teachers are Dolch and Fry. Words such as the and said are on both lists. The letters in these words do not make the sounds children are familiar with; therefore, these words cannot be sounded out. The only strategy for students to use to become successful readers is to know these words by sight. Many children struggle with learning and retaining these words because they have no meaning. For example, “are, is, and have are functional, connecting, abstract words for children but they cannot connect meaning to” (Cunningham, 2013, p. 89). They may know the words today and forget them tomorrow. Strategies for teaching these unfamiliar words can entail using pictures to associate a meaning and practice of that word. That does not mean just looking at the word and saying it. Chanting the spelling of words and writing them were suggested by Cunningham (2013). Cunningham (2013) pointed out that this will allow those students who learn kinesthetically to learn and retain these words. Building a word wall is another strategy to help children learn irregular words. If they are displayed in the room, children can use them as a resource when they are needed for reading and writing. Children should learn to read and write irregular words as early as possible.

Last, fluency is important for children to be able to comprehend what they read. “Fluency is the ability to read most words in context quickly, accurately, automatically, and with appropriate expression” (Cunningham, 2013, p. 75). When children spend too
much of their time trying to decode unfamiliar words, there is little attention left for the comprehension part of reading because their brains can only attend to a limited number of things at one time (Cunningham, 2013). Fluency is important for children to get pleasure from reading. According to Cunningham (2013), children who struggle to read will only read when they are asked to do so and will never understand that reading can be enjoyable. Many fluent readers spend most of their time reading material that is easy for them while struggling readers spend their time trying to read texts that are too hard for them. As a teacher, it is important to make sure that both groups spend time reading easy text. These should be texts in which they are interested, therefore, they will have some background knowledge and can recognize 98 to 99 percent of the words. It is also important for teachers to model fluency. Cunningham (2013) explained that for teachers to help children understand what fluent, expressive reading sounds like, they should be modeling this during a read aloud, echo reading, and choral reading. If children can hear this modeled correctly, they will learn to do the same when they read.

While the goal for students is to become successful readers, it is important that children have a solid foundation in phonics. Teachers should be aware of where their students fall in the progression of mastering the different elements of phonics. Educators must be aware of strengths and weaknesses of the students to design phonics instruction to meet the needs of all learners.

Methods of Phonics Instruction

There are various methods of phonics instruction. The four most common instructional methods are embedded, analogy, analytical, and synthetic. The National Reading Panel (NICHHD, 2000) found that systematic phonics instruction was more
effective than non-systematic or no phonics instruction at all. Through their findings, the National Reading Panel Report (2000) stated that there was no difference in the effectiveness of the different methods. Each method was proven effective when used through tutoring and small groups.

First, the embedded phonics approach is possibly the least effective of the four methods because there is only a small amount of letter-sound relationships taught, and phonics concepts are usually done during an interactive read aloud, for example (NICHHD, 2000). This approach is not systematic or explicit. It also focuses on reading for meaning first. The National Reading Panel stated that teaching students by embedded phonics instruction is a more implicit approach that relies to some extent on incidental learning.

Next, students can also be taught to read unfamiliar words by identifying parts that are similar. This process is called analogy phonics. Bear et al. (2012) described the analogy phonics approach as students being required to make connections between letter-sound patterns they are familiar with to decode new words. Children can use prior knowledge of the -ight rime to know that adding an m, r, or l to that word will only require adding an onset to the already known rime.

Finally, the two phonics programs that are opposite approaches are analytic and synthetic. With analytic phonics, the students do not sound out all parts of the word first. Once they recognize or the teacher pronounces the word, they analyze the sound-letter relations. Bear et al. (2012) defined analytic phonics as “the approach that uses known words and then examines their parts while synthetic phonics is the approach that expects students to sound out words phoneme by phoneme… Analytic phonics supports the
synthetic skill necessary to decode new words when reading and to encode words when writing” (p. 56). One disadvantage of analytic phonics is that children often guess as a first reading strategy which could mean that the child guesses the incorrect word yet keeps on reading. On the other-hand, there is no guessing involved with synthetic phonics because students are taught to blend phonemes to make a word as their first strategy. Teachers do not pronounce words for students, but rather they allow the students to blend and work the words out for themselves.

The National Reading Panel (NICHHD, 2000) explained that synthetic phonics produces two difficulties for children. First, there are many words containing stop consonants, which is the sound made by completely blocking the flow of air and then releasing it. The National Reading Panel (2000) went on to explain the struggle students have when sounding out letters to blend into words.

Blending words with stop consonants requires deleting ‘extra’ (schwa vowel) sounds produced when letters are pronounced separately, for example, blending ‘tuh-a-puh’ requires deleting the ‘uh’ sounds to produce the blend ‘tap’ or when the sounds to be blended exceed two or three, it becomes harder to remember and manage the ordering of all those sounds, for example, blending ‘s-tuh-r-ea-m’ to say ‘stream.’ (p. 2-104)

Both approaches have helped students be successful despite the ways in which they differ. There is no best approach to phonics. Teachers need to pick the approach that best meets the needs of the individual student.

For phonics instruction to be successful, it must provide students with the skills and knowledge necessary to begin reading. Vaughn and Linan-Thompson (2004) stated “an effective phonics program follows a defined sequence and includes direct teaching of
a set of letter-sound relationships” (p. 31). Instruction should include sound-spelling relationships of both consonants and vowels. The authors also pointed out that “sequencing helps students to learn the relationship between letters and sounds, and to use that knowledge to blend the sounds to read words, and to segregate the sounds to write words, even before they have learned all the letter-sound correspondences” (p. 31).

Vaughn and Linan-Thompson (2004) went on to explain that for phonics instruction to be effective, it should also include the use of decodable texts with words they can apply letter-sound relationships in decoding as well as many opportunities for children to spell and write stories of their own using letter-sound relationships.

**Developmentally Appropriate Spelling and Phonics Small Group Instruction**

With the ever-increasing demand for differentiation to meet the needs of all students, it is important to understand a student’s word knowledge and the strategies used to apply that knowledge in reading. This is an important first step when beginning the process of small group instruction regarding phonics and spelling. According to Templeton (2011), “most researchers concur that acquisition of spelling or orthographic knowledge follows a developmental continuum” (p. 247). It is important for teachers to assess their students to see where they fall along this developmental continuum. Templeton (2011) suggested using a spelling assessment to indicate how students think orthography represents language and what types of orthographic/spelling information they already have. The information obtained from this assessment will be beneficial for both encoding and decoding.

Another aspect concerning developmental appropriateness of spelling instruction is that orthographic development does not occur just by repetition and memorization
(Templeton, 2011, p. 249). According to Templeton (2011), for students to have memory of words and patterns, they must have the development of “underlying interrelationships among phonology, orthography, meaning, and morphology” (p. 249). One of the most effective ways to develop strength and depth of word knowledge is with word sorts. This strategy can be done through guided instruction as well as independently.

The popular belief is that there are three levels or developmental progressions among English learners. Developmental spelling researchers have examined the three levels which are, “alphabet to pattern to meaning” (Bear et al., 2012, p. 5). Each layer builds on the previous layer and eventually, there will be interaction among the layers.

The first layer is alphabetic. This is explained by the authors (Bear et al., 2012) as “a rudimentary knowledge of the alphabet and letter sounds” (p. 5). This knowledge is used quite literally, no matter the speller’s background. For example, Bee, Dee, eF, eS, and so forth. This strategy works well only when the letter sounds correspond with the names of the letters. However, with vowels, this creates a problem when the sound is /a/ short vowel sound and it does not say the letter name such as W: double you; Y: wie; and H: aitch (p.5).

The second layer is pattern. Bear et al. (2012) explained that the pattern layer overlies the alphabetic layer. Because there are 42 to 44 sounds in the English language, and only 26 letters in the alphabet, some single sounds are made up of more than one letter. For example, the word ape in cape: the silent /e/ at the end makes the a have the long vowel sound. The e does not make a sound itself, but its role is important in the word and affects the sound of the vowel. Students must be able to identify patterns within words.
The last layer is meaning. The authors (Bear et al., 2012) stated that this simply means that students must learn that groups of letters can represent meaning. Some examples would be prefixes, suffixes, and words with Greek and Latin roots (p. 6). For example, the Greek base photo- as in photograph, photographer, and photographic shows that the similar spellings in those words have meaning connections among the words (p. 6).

Doyle, Zhang, and Mattatall (2015) received surveys from 56 teachers detailing their beliefs, practices, and concerns regarding spelling instruction. First, the respondents believed that spelling instruction was important for their primary grade students because it would improve the readability of students’ writing and knowledge of spelling also supports their reading development. With regards to their own spelling instruction, they believed that it would be most effective if used following a systematic approach. Studies have shown that good readers rely on knowledge of the phonological-graphemic-morphological structure of words rather than primarily on context for accuracy (Doyle, Zhang, & Mattatall, 2015). Finally, teachers expressed concern over their ability to teach spelling and/or phonics because most curriculum or basal series do not meet the needs of all students. Resources are not made readily available, so it takes additional time to assess and design lesson to meet the individual needs of each student. A suggested approach to help teachers become more effective was to provide on-going support, time to plan collaboratively, and the assistance from school administrators and for school districts to provide professional development opportunities for teaching of spelling.
While many textbooks approach spelling as a whole group lesson using a predetermined list of words for all students, Doyle, Zhang, and Mattatall (2015) suggested that teachers should teach spelling based on words related to a topic of study, misspelled words, high frequency words, or words that children had an interest in learning. The authors go on to explain that invented spelling was an “appropriate instructional approach” that would allow children to write without having to worry about the accuracy of the words they were spelling (Doyle et al., 2015, p. 3). Children would use their knowledge about letters and sound relationships to express themselves.

McNeill and Kirk (2014) also surveyed teachers, focusing on their spelling assessment and instructional practices. Based on the responses of 405 New Zealand teachers, only 6% of teachers said they assigned the same spelling list to their whole class. A published spelling program was used by 70% of teachers while 18% used more than one spelling program within their classrooms. Also, the responses showed that 57% of teachers grouped their students based on spelling abilities. These groups were based on test results as well as gaps in spelling knowledge. Almost all teachers within this study agreed that “teaching of letter-sound knowledge, phonological awareness, spelling rules, and pattern recognition were important components of spelling instruction,” however, very few teachers reported teaching these fundamental skills (McNeill & Kirk, 2014, p. 544). Teachers (89%) also expressed that students should receive spelling lists based on students’ individual needs, however only 60% did this for their students. While over half of the surveyed teachers reported that their belief in writing a word several times was an effective way to learn to spell that word, very few (12%) implemented this strategy in their classroom. Teachers surveyed (77%) believed that grouping students
based on their spelling ability was important. Based on the teacher’s responses, the most common identified weakness was the lack of time to teach spelling (41%) which does not allow enough time to meet the needs of individual students.

The results of this survey (McNeill & Kirk, 2014) that focused on how teachers felt about their spelling instruction showed that teachers used formal assessment measures to plan their spelling instruction and used a published spelling program and had students grouped based on those results. However, teachers expressed concern over their inability to provide adequate instruction during these individualized group meetings. These inadequacies may be due to the lack of teacher training and ongoing professional development, crowded curriculum, and too many demands on teachers.

Suggestions were made by McNeill & Kirk (2014), to address instruction of spelling in the classroom are individualizing spelling lists, selecting words from student writing, self-selection of words by students, writing words multiple times, using a recognized spelling program, and grouping students by ability. The authors go further to explain that spelling should be taught as a linguistic ability “by directly facilitating key skills that underlie spelling development” (McNeill and Kirk, 2014, p. 536). Three skills that are important for spelling development are phonemic awareness, orthographic awareness, and alphabetic knowledge. Although teachers realize this, they are often unable to instruct this way due to their own linguistic knowledge. Professional development is important to help teachers put into practice what they know is best for their students instead of assigning their class the same spelling list. McNeil & Kirk (2014) found that teachers gave additional one-on-one help to struggling spellers as well as assigning advanced students the task of putting emphasis on meaning of the words or
giving those students challenging words. Although these approaches can be time-consuming, the needs of each student will more likely be met.

Treiman, Strothard, and Snowling (2013) compared the CVC abilities of 179 5- and 6-year-old students in England and the United States. The authors hypothesized that they would see differences in students’ spelling because individuals in England taught students the sounds of letters first, whereas in the United States students were taught letter names first. Results indicated that all groups of children performed better on short vowels than long vowels. The results also indicated that most spelling errors that children make on vowels are on substitutions or not using any vowels letter at all. For example, the English children omitted vowels an average of 22% of the time. The results also indicate that the “emphasis on letter sounds contributes to the large benefit in spelling accuracy that English children show for words with short vowels, such as bag, over words with long vowels, such as tame” (Treiman et al. 2013, p. 483). Both countries agree that spelling words with short vowels is a skill that students do more accurately than words with long vowels. However, Treiman et al. (2013), found that the children in England performed better on CVC words due to the emphasis on teaching young children the letter sounds rather than names. The way children use invented spelling can provide valuable information into their understandings of sounds and spellings.

Stages of spelling development are marked by the types of spelling errors students make as well as changes in the way they read words (Bear et al., 2012). Each stage is defined by three functional levels that allow teachers to know when it is best to teach what skills. The authors (Bear et al., 2012) defined the levels as:
Level 1. “What students do correctly—an independent or easy level;
Level 2. What students use but confuse—an instructional level at which instruction is most helpful;
Level 3. What is absent in students’ spelling—a frustration level in which spelling concepts are too difficult” (p. 9).

Once a teacher knows the level the students are on, instruction can be planned to best meet their needs.

The first stage of spelling development is the emergent stage. These students typically range from two to five years old, but this could also apply to anyone who is not reading conventionally. The spellings of these students range from random marks to legitimate letters that have a relationship to sound. Through this stage, students learn letters, such as the ones in their names, and begin to associate the sounds with those letters (Bear et al., 2012). At the end of this stage, some memorization of words is occurring, and the students can write the memorized words repeatedly.

The second stage of spelling development is the letter name-alphabetic spelling stage. This stage encompasses the period when students are formally taught to read which is in kindergarten and first grade and extending into second grade. The student’s dominant strategy in spelling during the early part of this stage is using letter names as cues for the sounds they make. As students progress, they will segment words and match appropriate letters or letter pairs to their sounds (Bear et al., 2012).

The within word pattern spelling stage is the third stage of spelling development. This level usually begins when students transition to independent reading. This usually occurs at the end of first grade. It will continue to grow through second and third grades,
and even into fourth. Students need to have the ability to “correctly spell most single-syllable short vowel words correctly, as well as consonant blends, digraphs, and preconsonantal nasals” (Bear et al., 2012, p. 13).

Syllables and affixes stage names the fourth stage of spelling development. This stage is achieved in the upper elementary and middle school grades. Students are expected to spell words with more than one syllable and syllable patterns. While studying affixes, the students are developing meaning to words which will build the foundation needed for the last stage of spelling development (Bear et al., 2012).

The final stage of spelling development is the derivational relations spelling stage. This stage usually is found in middle school, high school, and college. This stage focuses on the ability to examine how words may be derived from base words. This allows students to have an expanding vocabulary because they have the foundation of spelling-meaning connections between words (Bear et al., 2012). It is important for teachers to know what students know about words and what they are ready to learn in order to plan effective spelling and phonics instruction. Another important aspect of effective instruction is adjusting your teaching based upon evaluation results of the lessons taught to meet the needs of the students (Bear et al., 2012).

Summary

Due to reading achievement being such an important outcome for children, it is very important that the instruction provided meets the needs of all learners in the classroom. There are several effective phonics instructional approaches, as well as some that are less effective. There is no one program that meets the needs of all students, and phonics alone cannot make children successful readers. It must be used in conjunction
with other literacy activities. With reading being in the forefront among educators, researchers, and government officials, we know that reading at an early age can be indicative of the future academic journey of a child. Educators must be aware of their students’ strengths and weaknesses to design a phonics program to make every child a successful reader and writer. Chapter Three will discuss the methods used to investigate the impact of developmentally appropriate spelling and phonics instruction on students’ level of orthography, decoding ability, and reading accuracy in this study.
Chapter Three

Methodology

After observing a trend of students performing well on spelling tests that followed a given phonics pattern and their inability to recognize the same phonics pattern in reading, the researcher was curious as to why this happened. With so much at stake with standardized tests, the following research question was developed: How does a student’s level of orthography, decoding ability and reading accuracy change as a result of participating in developmentally appropriate spelling and phonics small group instruction? The purpose of this study was to determine if students’ reading accuracy and spelling ability (measured by the DRA2, Words Their Way Primary Spelling Inventory Feature Guide, and CORE Phonics Survey) would change when the implementation of differentiated spelling and phonics instruction in a small group setting occurred.

For this study, a quantitative research method was used. According to Mertler (2017), quantitative research is defined as “methodologies that require the collection of and analysis of numerical data; utilize a deductive approach to reasoning” (p. 320). This method was conducted by using charts and graphs which compared pre-and post-assessment data after the small group intervention to determine if the students’ reading decoding and spelling proficiency had increased based on the measurement of the Words Their Way Primary Spelling Inventory, CORE Phonics Survey and the DRA2.
Participants

The participants of this study were comprised of the researcher who was a participant observer and a class of 11 first grade students from her class. Although all students participated in the pre- and post-assessment as well as the differentiated spelling and phonics instruction groups, data were collected and analyzed for ten students. This decision was made because these ten students have been in the classroom since the start of the school year and have had differentiated groups since the beginning of the study. A summary of the participants can be found in Table 3.1.
Table 3.1

Participants of Study

<table>
<thead>
<tr>
<th>Students</th>
<th>Age</th>
<th>Sex</th>
<th>Race</th>
<th>Other Characteristics</th>
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<td>M</td>
<td>Hispanic</td>
<td>ELL RTI Process</td>
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<tr>
<td>B</td>
<td>6</td>
<td>F</td>
<td>African American</td>
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</tr>
<tr>
<td>C</td>
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<td>M</td>
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<td>IEP</td>
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<td>African American</td>
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<tr>
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<td>Caucasian</td>
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<tr>
<td>H</td>
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<td>F</td>
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<td>Repeated First Grade and attended Summer School</td>
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<td>6</td>
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</tr>
<tr>
<td>J</td>
<td>7</td>
<td>F</td>
<td>Hispanic</td>
<td>ELL</td>
</tr>
</tbody>
</table>

Note: ELL represents English language learner; RTI represents response to intervention; IEP represents individualized education program; M represents male; and F represents female.

Student A had experienced reading difficulties since Kindergarten. The Response to Intervention process was started in October 2017 due to persistent academic concerns by the teacher. Student C was diagnosed over the summer of 2017 as being on the Autism Spectrum. An IEP was written in October 2017. All students in this study, except Student B, Student E, and Student F, were serviced four times per week by Title I
reading tutors who used the Fountas and Pinnell Leveled Literacy Intervention curriculum (Fountas & Pinnell, 2014).

**Setting**

This study took place in an elementary school in an urban school district in Ohio. Within this elementary school, 100% of the students qualify for free or reduced lunch. At the time of this study, the classroom configuration consisted of groups of desks. There were six groups of three desks arranged in a pod. Two desks faced each other while one was facing both of those desks. This arrangement was to encourage group interaction during small group instruction. It was also a way to limit the number of students on the floor at the same time during transitions or to gather needed supplies. These pods were arranged so that no student had their back to the front of the room which is where the SMART Board was mounted, and the Elmo Document camera was located that the teacher uses for instruction. At the front of the room, under the SMART Board, there was a large carpet for the students to sit on for whole group instruction. There were leveled books which are clearly marked for the students to use. The teacher’s desk was located at the back of the room. Around the room there were two tables that contain six desktop computers for students’ use. In addition to those tables, there were four tables set up for use during Workshop time. One of those tables was a kidney-shaped table that the teacher used for small group instruction. On the walls were the alphabet, number line, anchor charts, Word Wall, “I Can” statements, spelling words, and high frequency words to name a few.
**Intervention**

Students were grouped based on the results of their *Words Their Way* Primary Spelling Inventory Feature Guide. Appendix I displays the members of the four intervention groups, the spelling features, and the spelling lists for the nine weeks of the intervention.

During the intervention period, a typical week would include meeting at least two times per week with the researcher in a small group setting. On the first day, each group would be introduced to its specific spelling feature. This was done by discussions, word searches, and making word lists on chart paper. On the next day, the group would be given a picture/word sort to complete in their notebook. On the third day, students would be given a new picture/word sort to complete individually. If there were any misconceptions, they were addressed on the fourth day. Students were assessed on the fifth day by taking a spelling test based on the specific spelling feature.

One activity the students participated in was a game called “Show Me” (Bear et al., 2012, p. 190). This was an activity in which the students were given a pre-made tri-fold booklet that contained note cards with consonants and vowels written on them. Students were given the word family that the group would work on for the week, and consonants to manipulate the initial, final, or vowels sound of words. The researcher would ask students to spell out a word using the note cards after “tapping” (using their fingers to tap each sound and then sweeping the word to blend these sounds) out the sounds. The researcher would then ask them to build the next word that she said in which she had manipulated the beginning, final, or vowel sound to form a new word. For example, one week the word family was -an. The researcher would ask students to build...
the word *man*. After each student built the word, they would show her their answers when they heard the phrase “Show Me.” Next, the researcher would ask them to take the word *man* and change it to the word *can*. Once again, they would show her their answers when they heard the phrase “Show Me.” The researcher chose this activity because it emphasized the practice of making words instead of competition between the students. This activity was also chosen because it required students to listen as the word was said and identify the individual sounds in those words.

The next activity that the researcher chose for the students to participate in was called “Riddles” and was suggested by Cunningham (2013) to have students provide answers to riddles using words from a word family (Appendix H). This activity was another small group activity during intervention and workshop time. On chart paper, the researcher had written sentences that were like riddles. The students had to fill in the missing word with a word from the sounds the group had previously worked on during the week. The group read the sentences together and each student was given a turn to fill in the blank with the appropriate word. The goal of this activity was to give them more opportunities to manipulate the initial, final, and vowel sound in words.

At the end of this day’s lesson, the students would do a Word Sort from *Words Their Way* (Bear et al., 2012), in their phonics notebook (Appendix I). These sorts ranged from sound sorts to words which helped to differentiate for each student no matter the skill they are working on. For example, the students who needed work with initial sounds, their Word Sort would have four letters. The students would cut and glue these letters at the top of their notebook page. They would then cut and glue the pictures under the correct letter that corresponded with the initial sound of that picture. The researcher
chose this activity because it was one the students could do independently since the sorts were comprised of pictures. The researcher could easily assess the students’ ability to identify beginning sounds of words. This was her way of assessing their knowledge informally in order to appropriately plan for the next week’s lessons.

At the end of this intervention, students were given post-assessments using *Words Their Way* Primary Spelling Inventory (Appendix D), CORE Phonics Survey, (Appendix E) and the DRA2 (Appendix F). These assessments were given to each student individually. A timeline of events (Appendix G) and dates with each spelling feature are broken down by weeks.

**Data Collection**

Within this study, the researcher collected quantitative data from a total of three different data collection measures. The following are the measures used: The *Words Their Way* Primary Spelling Inventory (Appendix D), CORE Phonics Survey (Appendix E), and the DRA2 (Appendix F). All assessments were given one-on-one and the questions were read aloud to each student.

*Words Their Way Primary Spelling Inventory.* The *Words Their Way* Primary Spelling Inventory (Bear et al., 2012, p. 316) was used as a pre- and post-assessment to measure the orthographic development of the students. This assessment had 26 words to spell but the researcher only gave the first ten of those words to the students at the beginning of the year. The students’ spelling was then analyzed using the Feature Guide. Students were given points for spelling words correctly and for identifying correct sounds even if the word was spelled incorrectly. After the scores had been tabulated for each
student, the class was ranked by score and the researcher formed groups based on the spelling features.

**CORE Phonics Survey.** The CORE Phonics Survey (Diamond, 2008) was used as a pre-and post-assessment to assess phonics knowledge and decoding skills. This survey was used to provide, “data about growth and mastery at the end of an instructional period,” and to “track progress,” (CORE, 2008, p. 41). There were 12 different parts within this assessment. This assessment consisted of two sections, *Alphabet Skills and Letter Sounds* and *Reading and Decoding Skills*. The section *Alphabet Skills and Letter Sounds* assessed the letter names of both upper and lowercase letters, consonant sounds, as well as long and short vowel sounds. It contained the first four subtests of the assessment. The second section, *Reading and Decoding Skills*, assessed short vowels in CVC words, consonant blends with short vowels, digraphs, -tch tri-graph, r-controlled vowels, long vowel spellings, variant vowels, low frequency vowel and consonant spellings, and multisyllabic words. This part contained subtests five through 12. Subtests E through K each contained 15 words, ten real words and five pseudowords that required students to sound out nonsense words. All parts of this assessment were not given at the beginning of the year because most students were unable to proceed past the short vowels within CVC words (i.e., subtest F). Within the directions of the administering of this assessment, it stated that if a child missed two or more words in each line, to not go to the list of nonsense words. At the beginning of the year, the students had little to no idea how to read the words contained in the rest of the assessment. Therefore, the researcher stopped the assessment to limit frustration for the
During these pre-and post-assessments, students were shown the Student Material pages while the researcher recorded their responses on the record form.

**Developmental Reading Assessment (DRA).** The DRA2 (Beaver, 2006) assessment was given as a post-assessment to provide data on students’ word recognition and decoding skills. The school district does not administer this assessment in the fall which is when the researcher began this study, so the scores from spring 2017 were used as a pre-assessment. This assessment was given by the researcher to each student individually. The first part of the assessment is reading engagement. Students were asked to name people that read to them or that they read to at home. They were then asked about their preference of reading to someone or having someone read to them and then explaining their choice. The last question in that section asked them to talk about their favorite book. Next, students were given a book one level higher than they had previously passed. Students were asked to take a picture walk. While they were doing this, their answers were being recorded. Then, students were asked to read the book while a running record was being taken. The administrator of the test then counted errors and if the student fell within the range of passing that was pre-determined on the assessment, they would be asked to shut the book and retell the story from beginning to end. At this time, their responses were being checked off on a list of responses pre-written on the test. A rubric was included on each assessment to determine if the student had passed the level. According to Beaver (2006), students in kindergarten should read at level 1 in January and level 3 by May/June to be considered on benchmark level. For first grade, students should read at level 3-6 in September and level 16-18 by May/June to
be on benchmark level. If the student passed, they were given the next level book and the process continues until the student did not pass according to the rubric.

**Data Analysis**

To answer the research question investigated, the data collected were analyzed using descriptive strategies. The category that was used to analyze the data collected was a measure of central tendency. According to Mertler (2017), this is defined as “statistical procedures that indicate, with a single score, what is typically or standard about a group of individuals (p. 179). All the students’ raw scores for pre-and post-assessments were added together to find the sum. Once the sum was calculated, it was divided by the number of students to get the mean set of scores. Then the researcher compared the growth from the pre-to post-assessment as well as the end of year assessment.

**Procedures**

After obtaining permission from the Institutional Review Board (IRB) (Appendix A), a parental consent form was sent home on September 27, 2017. This letter (Appendix B) was to inform parents of who the researcher was and what the study was about. All permissions given by the Institutional Review Board at Wittenberg University were followed. It also gave parents the choice of allowing their child to participate in the study or not. All students that were age seven or older also had to complete a Child Assent Form as required by the researcher’s school district (Appendix C). The researcher met with the students individually and explained the study to them. The students then had the form read to them and were asked if they would like to work with the researcher in the study. Of the 11 students who were given the letter for permission to participate, one was never returned. This student’s data is not included within this study.
Once permission by the parents was granted, the study was initiated by collecting the DRA2 scores from spring 2017. These scores are kept in the records room in the school. Each child is given a DRA folder that contains previous assessments and scores. The researcher grouped the students by like levels for Guided Reading. Next, on August 28, 2017, each student was given the *Words Their Way* Primary Spelling Inventory (Appendix D) individually. Each word was pronounced, and the students were to write the words on lined paper to the best of their ability. The final pre-assessment each child, individually, was given was *The CORE Phonics Survey* (Appendix E).

Once all the pre-assessments had taken place, the differentiated spelling and phonics instruction began. The interventions used in this study were found in *Words Their Way* (Bear et al., 2012). The 10 students met with the researcher on an average of twice per week for 30 minutes during the scheduled intervention block from 8:38-9:18 and then again during workshop time from 10:00-10:30.

Each intervention period began with children identifying their student ID numbers listed under the correct group heading and going to the table that was set up with the appropriate workshop activity. After the groups had their directions, the researcher would call each group back to the kidney-shaped table, one group at a time to work on specific skills. At the end of the initial intervention period, the students were given a post-assessment in November. Small group instruction continued throughout the school year and an end-of-year assessment was administered in May.

**Summary**

This chapter provided an overview of the study conducted that explored the use of differentiated spelling and phonics instruction in a small group setting and its impact on
students’ orthographic knowledge, reading accuracy, and decoding ability. The researcher gathered data using *Words Their Way* Primary Spelling Inventory, the CORE *Phonics Survey*, and DRA2. Data collected from these measures will be presented in Chapter Four.
Chapter Four

Findings

Based on the researcher’s observations of the students within her classroom and the review of the relevant literature, the researcher developed one question that formed the basis for the study conducted. The following question was developed: How does a student’s level of orthography, decoding ability, and reading accuracy change as a result of participating in developmentally appropriate spelling and phonics small group instruction? The researcher collected data using Words Their Way Primary Spelling Inventory, the CORE Phonics Survey, and DRA2. In this chapter, the findings of this study will be presented and analyzed. Although one research question was developed, each part of the question will have the results reported separately.

How does a student’s level of orthography change because of participating in developmentally appropriate spelling and phonics small group instruction?

The researcher collected data to identify the impact of developmentally appropriate spelling and phonics small group instruction on students’ level of orthography. In order to collect quantitative data, the researcher used The Words Their Way Primary Spelling Inventory (Bear et al., 2012, p. 316). The first set of data was collected from the pre-assessment in which the students were asked to spell words in a spelling test-type format. The pre-assessment was administered on August 28, 2017, the post-assessment was administered on November 21, 2017, and the End of Year (EOY)
assessment was administered on May 2, 2018. Table 4.1 displays the pre-and post-assessment as well as the end of year scores. The period of time between the pre- and post-assessments was approximately 12 weeks during which the students received eight weeks of small group instruction, and the period between the post-assessment and the EOY testing represents approximately 19 weeks of continued small group instruction. Within the time period from post-assessment to EOY testing, students A and H were not available for testing.
Table 4.1
Scores of Spelling Features on Primary Spelling Inventory

<table>
<thead>
<tr>
<th>Student</th>
<th>Initial Consonant</th>
<th>Final Consonant</th>
<th>Short Vowels</th>
<th>Digraphs</th>
<th>Blends</th>
<th>Common Long Vowels</th>
<th>Other Vowels</th>
<th>Inflected Endings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre  Post  Eoy</td>
<td>Pre  Post  Eoy</td>
<td>Pre  Post  Eoy</td>
<td>Pre  Post  Eoy</td>
<td>Pre  Post  Eoy</td>
<td>Pre  Post  Eoy</td>
<td>Pre  Post  Eoy</td>
<td>Pre  Post  Eoy</td>
</tr>
<tr>
<td>A</td>
<td>0     0     --</td>
<td>0     0     --</td>
<td>0     0     --</td>
<td>0     0     --</td>
<td>0     0     --</td>
<td>0     0     --</td>
<td>0     0     --</td>
<td>0     0     --</td>
</tr>
<tr>
<td>B</td>
<td>7     7     7</td>
<td>7     7     7</td>
<td>7     7     7</td>
<td>0     7     7</td>
<td>2     5     7</td>
<td>0     0     3</td>
<td>0     0     4</td>
<td>0     1     4</td>
</tr>
<tr>
<td>C</td>
<td>7     5     7</td>
<td>6     5     7</td>
<td>2     4     7</td>
<td>0     0     4</td>
<td>0     0     0</td>
<td>0     0     0</td>
<td>0     0     0</td>
<td>0     0     0</td>
</tr>
<tr>
<td>D</td>
<td>6     7     7</td>
<td>7     7     7</td>
<td>1     4     7</td>
<td>0     0     7</td>
<td>0     0     7</td>
<td>0     0     2</td>
<td>0     0     2</td>
<td>0     0     1</td>
</tr>
<tr>
<td>E</td>
<td>7     7     7</td>
<td>4     5     7</td>
<td>5     0     7</td>
<td>1     0     7</td>
<td>0     2     6</td>
<td>0     0     0</td>
<td>0     0     3</td>
<td>0     0     1</td>
</tr>
<tr>
<td>F</td>
<td>6     7     7</td>
<td>6     7     7</td>
<td>5     5     7</td>
<td>0     0     4</td>
<td>0     1     7</td>
<td>0     0     0</td>
<td>0     0     1</td>
<td>0     0     0</td>
</tr>
<tr>
<td>G</td>
<td>6     7     7</td>
<td>4     6     7</td>
<td>3     3     7</td>
<td>0     0     5</td>
<td>0     1     4</td>
<td>0     0     0</td>
<td>0     0     0</td>
<td>0     0     0</td>
</tr>
<tr>
<td>H</td>
<td>7     7     --</td>
<td>7     7     --</td>
<td>5     7     --</td>
<td>0     0     --</td>
<td>1     2     --</td>
<td>0     0     --</td>
<td>0     0     --</td>
<td>0     0     --</td>
</tr>
<tr>
<td>I</td>
<td>0     5     6</td>
<td>1     6     7</td>
<td>0     3     5</td>
<td>0     0     0</td>
<td>0     0     1</td>
<td>0     0     0</td>
<td>0     0     0</td>
<td>0     0     0</td>
</tr>
<tr>
<td>J</td>
<td>7     4     7</td>
<td>3     4     7</td>
<td>1     2     7</td>
<td>0     0     7</td>
<td>1     1     6</td>
<td>0     0     0</td>
<td>0     0     1</td>
<td>0     0     2</td>
</tr>
</tbody>
</table>

Note: all numbers represent number correct out of seven; EOY represents “end of year”
Table 4.1 indicates that after the initial intervention period of eight weeks, six of the ten students assessed had mastered the area of initial consonants and received the maximum score of seven points. While Students C and I did not master, they received five out of the seven maximum points. Four of the ten students assessed mastered the area of final consonants and received the maximum seven points. Students G and Student I were close to mastery receiving six of the maximum seven points. Students B and H were the only students of the ten assessed that mastered the area of short vowels and received the maximum number of seven points. In the area of digraphs, Student B was the only student out of the ten assessed to receive the maximum number of seven points. The remaining students remained at a zero. There were no students who mastered the area of blends, however, Student B scored five of the seven maximum points. No student had the ability to score in the areas of common long vowels, other vowels, or inflected endings during the period following the initial intervention implementation. The pre- and post-assessment were given in August and November respectively; therefore, it is not uncommon at this point in the year for students to have not gained this knowledge. Long vowels are usually taught much later in the year once students master short vowels. It is important to note that students’ scores stayed the same in some areas because they had received the maximum number of points on the pre- and post-assessment. For example, many students had already mastered identifying initial consonants; therefore, they received a score of seven on the pre-assessment. Their scores stayed the same on the post-assessment. Even though their scores did not increase, they had already mastered that skill.
After the initial intervention of eight weeks, the researcher continued with the small group instruction and administered an end of year assessment in May, and Table 4.1 indicates that seven of the eight students assessed received the maximum score of seven points in the area of initial consonants, and one student did not master, they did increase their score by six points. In the area of final consonants, all eight students tested received the maximum score of seven points, which indicates mastery of this skill. In the area of short vowels, seven of the eight students tested received the maximum score of seven points while the remaining student increased their score to five points. In the area of digraphs, four of the students tested, mastered the skill by receiving the maximum score of seven points. While Students C, F, and G did not master, they did increase their score, and Student I remained the same at zero. In the area of blends, seven of the students tested increased their score while Student C remained the same at zero. In the area of common long vowels, Students B and D increased their scores while the rest remained at a zero. In the area of other vowels, Students B, D, E, and F increased their score while three remained the same at zero. In the area of inflected endings, Students B, D, and E increased their scores while the other four students assessed remained the same at zero. In the areas of common long vowels, other vowels, and inflected endings, the data indicates that Students B, D, E, and J increased their scores from zero, which shows growth after the small groups instruction.
Table 4.2

*Primary Spelling Inventory Pre-, Post-and EOY Assessment Mean Scores*

<table>
<thead>
<tr>
<th></th>
<th>Pre-Assessment</th>
<th>Post-Assessment</th>
<th>EOY Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Consonants</td>
<td>5.3</td>
<td>5.6</td>
<td>6.9</td>
</tr>
<tr>
<td>Final Consonants</td>
<td>4.5</td>
<td>5.4</td>
<td>7</td>
</tr>
<tr>
<td>Short Vowels</td>
<td>2.9</td>
<td>3.5</td>
<td>6.8</td>
</tr>
<tr>
<td>Digraphs</td>
<td>.1</td>
<td>.7</td>
<td>5.1</td>
</tr>
<tr>
<td>Blends</td>
<td>.4</td>
<td>1.1</td>
<td>4.5</td>
</tr>
<tr>
<td>Common Long Vowels</td>
<td>0</td>
<td>0</td>
<td>.6</td>
</tr>
<tr>
<td>Other Vowels</td>
<td>0</td>
<td>0</td>
<td>1.4</td>
</tr>
<tr>
<td>Inflected Endings</td>
<td>0</td>
<td>.1</td>
<td>.9</td>
</tr>
</tbody>
</table>

*Note:* all numbers represent number correct out of seven; EOY represents “end of year”

The mean was the measure of central tendency addressed. According to Bui (2014), the mean is important because when the average is known, a general sense of how the participants fared can be determined. Mean spelling scores on the post-assessment in Table 4.2 indicate that students showed improvement in initial and final consonants, short vowels, digraphs, and blends from the beginning of the year with the greatest increase in short vowels. End-of-year assessment scores showed continued growth in those spelling features, and students were progressing into common long vowels, other vowels, and inflected endings. From the pre-assessment to the end-of-year assessment, the largest increase in mean scores was in digraphs (5.0), blends (4.1), and short vowels (3.9). Students were at mastery or near mastery (i.e., 7) in the initial consonants (6.8), final consonants (7), and short vowels (6.8) spelling features.
How does a student’s decoding ability change because of participating in developmentally appropriate spelling and phonics small group instruction?

The researcher collected data to identify the impact of developmentally appropriate spelling and phonics small group instruction on students’ decoding ability. This data were collected in a one-on-one setting in which students were shown the Student Material pages while the researcher recorded their answers on the record form. Within this assessment, there were 12 different components that were under the two sections Alphabet Skills and Letter Sounds and Decoding Skills. Students were asked to identify letter names of upper and lowercase letters, consonant sounds, as well as long and short vowel sounds within the first section. Within the first section, the uppercase and lowercase letters section had a possible score of 26 points, the consonant sounds section had a possible score of 21 points, and long and short vowel sections had a possible five points to indicate mastery. In the second section, students were asked to blend words with short vowels in CVC words, consonant blends with short vowels, digraphs, -tch, tri-graph, and r-controlled vowels. Each of the categories within this section had a possible 15 points to indicate mastery.
Figure 4.1. CORE Phonics Survey scores of student A.

Figure 4.1. CORE Phonics Survey scores of student B.
Figure 4.1. CORE Phonics Survey scores of student C.

Figure 4.1. CORE Phonics Survey scores of student D.
Figure 4.1. CORE Phonics Survey scores of student E.

Figure 4.2. CORE Phonics Survey scores of student F.
Figure 4.1. CORE Phonics Survey scores of student G.

Figure 4.1. CORE Phonics Survey scores of student H.
Figures 4.1 through 4.10 indicate that after the initial intervention period of eight weeks a post-assessment was administered to the students. All students tested mastered the skill of identifying uppercase and lowercase letters and received the maximum number of 26 points except two students. In the area of consonant sounds, all
students tested received the maximum number of 21 points except two students. In the area of long vowel sounds, all students tested received the maximum number of five points except three students. In the area of short vowel sounds, all students tested except three received the maximum number of five points. In the area of short vowel sounds in CVC words, two students were able to increase their score on the post-assessment while six students were not able to be tested in this area due to the instructions stating that if a student cannot read two or more words in any section, they should not be tested further. In the area of consonant blends with short vowels, the one student who continued the assessment increased their score by thirteen points. None of the students advanced far enough in the assessment to be tested on short vowels, digraphs, and -tch trigraph or r-controlled vowels, due to the fact they were unable to read two or more words correctly in a previous section.
Table 4.3

CORE Phonics Survey Pre-, Post-and EOY Assessment Mean Scores

<table>
<thead>
<tr>
<th>Subtest (number of items)</th>
<th>Pre-Assessment</th>
<th>Post-Assessment</th>
<th>EOY Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uppercase Letters (26)</td>
<td>22.8</td>
<td>23.5</td>
<td>26</td>
</tr>
<tr>
<td>Lowercase Letters (26)</td>
<td>22.4</td>
<td>23.1</td>
<td>26</td>
</tr>
<tr>
<td>Consonant Sounds (21)</td>
<td>15.1</td>
<td>17.3</td>
<td>20.5</td>
</tr>
<tr>
<td>Long Vowel Sounds (5)</td>
<td>1.9</td>
<td>3.5</td>
<td>5</td>
</tr>
<tr>
<td>Short Vowels Sounds (5)</td>
<td>3.1</td>
<td>3.9</td>
<td>5</td>
</tr>
<tr>
<td>Short Vowels in CVC Words (15)</td>
<td>n/a</td>
<td>1.6</td>
<td>14.9</td>
</tr>
<tr>
<td>Consonant Blends with Short Vowels (15)</td>
<td>n/a</td>
<td>1.3</td>
<td>6.1</td>
</tr>
<tr>
<td>Short Vowels, Digraphs and tch, Tri-graph (15)</td>
<td>n/a</td>
<td>n/a</td>
<td>1.8</td>
</tr>
<tr>
<td>R-Controlled Vowels (15)</td>
<td>n/a</td>
<td>n/a</td>
<td>1.1</td>
</tr>
</tbody>
</table>

The mean was the measure of central tendency. When comparing the pre-and post-assessment data, mean scores on the post-assessment in Table 4.3 indicate that students showed improvement in uppercase and lowercase letters, consonant sounds, long and short vowel sounds, short vowel sounds in CVC words and consonant blends with short vowels from the beginning of the year with the greatest increase in consonant blends with short vowels. End-of-year assessment scores showed continued growth in those categories, and students were progressing into short vowels, digraphs and tch, trigraph and r-controlled vowels. From the pre-assessment to the end-of-year assessment, the largest increase in mean scores was in short vowels in CVC words (13.3) and
consonant blends with short vowels (4.8). Students were at mastery or near mastery in uppercase and lowercase letters, consonant sounds, long and short vowels, and short vowels in CVC words.

At the end of the study, all students who were tested mastered the areas of uppercase letters, lowercase letters, long vowels and short vowels. Mastering these skills was evident in the students’ ability to decode words in the area of short vowels in CVC words.

**How does a student’s reading accuracy change because of participating in developmentally appropriate spelling and phonics small group instruction?**

The researcher collected data to identify the impact of developmentally appropriate spelling and phonics small group instruction on students’ reading accuracy. This assessment was used to provide data about a student’s word recognition and decoding skills. Students were assessed individually by the researcher.

**Table 4.4**

**DRA Scores**

<table>
<thead>
<tr>
<th>Student</th>
<th>Spring 2017</th>
<th>Winter 2017</th>
<th>Spring 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>Accuracy</td>
<td>Level</td>
</tr>
<tr>
<td>A</td>
<td>999</td>
<td>0</td>
<td>999</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>100</td>
<td>10</td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td>94</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>3</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>G</td>
<td>2</td>
<td>94</td>
<td>3</td>
</tr>
<tr>
<td>H</td>
<td>4</td>
<td>96</td>
<td>6</td>
</tr>
<tr>
<td>I</td>
<td>999</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>J</td>
<td>2</td>
<td>94</td>
<td>3</td>
</tr>
</tbody>
</table>

*Note:* Accuracy numbers represent out of 100 percent.
When comparing the Spring and Winter 2017 scores, eight students’ reading accuracy was well within the independent level range (i.e., Students B, J, E, and I). Even though the level of book was more difficult than the student had previously passed, they had the ability to read with accuracy. According to Beaver (2006), six of the students were performing on grade level at the end of kindergarten in spring 2017. Student B was performing one level above and Students A and I were not performing on grade level on the Spring 2017 assessment. After the Winter 2017 assessment, only Student B was performing on grade level for midpoint of the year while nine students were performing below. After the Spring 2018 assessment, Student B was performing on grade level for the end of first grade and seven were performing below grade level. Although student B, student D, and student E had an accuracy percentage in the independent range, they were unable to increase their levels due to the inability to answer the comprehension part of the DRA2, and five students were unable to increase their level due to the number of miscues on the next level. As for the students who failed to pass to the next level due to comprehension, this indicates that while these students were able to read the words, they did not have the ability to understand what they had read. The researcher was recently made aware that the only six out of 66 students in all first-grade classes were reading on grade level at the beginning of the school year. Although all students finishing the study made growth, seven of the eight were still performing below grade-level.

Summary

Chapter Four contains results of data that were collected after the initial eight-week intervention and at the end of the year. Most students’ scores increased on all assessments except for a few. These findings helped the researcher further analyze the
data gathered and draw conclusions from the data collected. These conclusions will be further explained in Chapter Five.
Chapter Five

Discussion

This chapter presents conclusions from the study that investigated developmentally appropriate spelling and phonics instruction and its impact on student level of orthography, decoding ability, and reading accuracy. The researcher collected data using *Words Their Way* Primary Spelling Inventory the CORE *Phonics Survey*, and DRA2. The results of this study along with the researcher’s conclusions and recommendations for further research on this topic will be included within this chapter.

**How does a student’s level of orthography change because of participating in developmentally appropriate spelling and phonics small group instruction?**

When the researcher analyzed the trend of the students’ post-assessment data gathered by spelling features spelled correctly on the *Words Their Way* Primary Spelling Inventory (Bear et al., 2012, p. 316), overall, the students scored higher on skills they were exposed to during the intervention time. There were a few exceptions, however. Student C and student J’s scores decreased in the area of initial consonants, and student C’s score decreased in the area of final consonants which indicates the possibility that they did not retain the knowledge previously gained when exposed to new skills during the intervention time. For most students, it appears that there is a relationship between small group instruction and the students’ ability to score higher on skills they were exposed to during the intervention period.
When analyzing the EOY assessment, all eight students tested mastered initial consonants, final consonants and short vowels except student I. Once students mastered these areas, they were ready to move to the next testing components because it was developmentally appropriate for them to do so. These findings support the suggestions made by McNeill and Kirk (2013), to address instruction of spelling in the classroom are individualizing spelling lists, selecting words from student writing, self-selection of words by students, writing words multiple times, using a recognized spelling program, and grouping students by ability. Not all students progressed at the same time, which is why it was important to know what skills they had mastered before moving onto the next component. It is important to note that students who made little to no progress from pre-to post-assessment, demonstrated more growth over time with larger growth increases at the end of the study. These findings are supported by the work of Vaughn and Linan-Thompson (2004), who once again stated the importance of incorporating story time, small group instruction, and language activities in addition to a phonics program. Therefore, there appears to be a relationship between the skills covered in small group instruction and the skills the students showed growth in on the assessments.

**How does a student’s decoding ability change because of participating in developmentally appropriate spelling and phonics small group instruction?**

To determine if a student’s decoding ability would change because of participating in developmentally appropriate spelling and phonics small group instruction, the CORE Phonics Survey (Diamond, 2008) was administered before and after the intervention.
According to the collected data, there was an increase in all areas from the pre-assessment to the post-assessment. While the expectation was that the scores would increase, many students had already obtained the maximum score on the pre-assessment therefore, it does not appear that there was much growth in any areas. This is especially clear on the uppercase and lowercase letter identification.

Another aspect that needs to be considered is that all students had not been exposed to long vowels or blends during the intervention. The only student who scored in this area on the post-assessment was the one who was instructed on this skill during the differentiated small-groups, student B.

Overall, all eight students tested increased their scores in all areas when looking at the individual components of the assessment on the EOY test. There appears to be a relationship between the small group instruction and decoding ability because seven of the students tested could read short vowels in CVC words and one student did not master the skill with the maximum points of 15 however, they scored 14 points. When comparing the pre-assessment, in which no student obtained a score on this component, and on the post-assessment, with only two students scoring on this component, there was a large increase in the score. After gaining the knowledge of consonant sounds, as well as long and short vowel sounds, all students had the ability to decode words. There was also an increase in the scores when it came to consonant blends with short vowels for six of the students. These were also the students that had mastered the short vowels in CVC words. This indicates that once students master the skill of identifying letters and the sounds they make, students can then use this knowledge to blend those sounds into words. These results support Vaughn and Linan-Thompson (2004) explanation that
“sequencing helps students to learn the relationship between letters and sounds, and to use that knowledge to blend the sounds to read words, and to segregate the sounds to write words, even before they have learned all the letter-sound correspondences” (p. 31). There appears to be a relationship between small group instruction and the assessment since students were able to use their knowledge of letter-sound relationships to decode real words as well as pseudo words.

**How does a students’ reading accuracy change because of participating in developmentally appropriate spelling and phonics small group instruction?**

The Developmental Reading Assessment (DRA2) (Beaver, 2006) was administered to determine if a students’ reading accuracy changed because of participating in developmentally appropriate spelling and phonics small group instruction. Beaver (2006) emphasized that students learn to read and develop as readers at different times. The DRA is used to monitor change over time which supports these findings. According to the collected data, all students’ scores increased by at least one level except for student A. While six of the students increased by one level, and student I increased by two levels, there was significant growth for student B with an increase of five levels. Although most students’ scores increased, only student B was on grade-level for midpoint of first grade. While the level the student attains is important, it is just as important to take into consideration the students’ accuracy level as well. It is important to note that even when students were increasing their level of reading, they were maintaining an independent level of reading. The importance of students reading at an independent level is that they do not have to stop and decode words frequently. When students read at an independent level, they can read 95% of words accurately with
minimal difficulty, which will help with their fluency. Students will then be able to comprehend what they read with more ease because they are not constantly stopping to sound out unfamiliar words. With their ability to decode words, they were reading accurately. However, seven students out of the eight tested, were not on grade-level by the end of the year. It appears that there was no relationship between the small group instruction and growth in reading accuracy.

While there is a scope and sequence given to teach the students, there is no curriculum. The researcher was given the task to create reading lessons based on the scope and sequence with no resources. While comprehension skills were taught within reading lessons, the students had little opportunity to engage in reading texts on their own and applying those skills. The students were often given a book that was printed from the computer. These books were not aesthetically pleasing because they were black and white. A good reading program implemented by the school system could give students the opportunity to read stories that are engaging, and each student would have access to a text.

**Reflections**

Based on the assessments given, it appeared that differentiated instruction met the needs of students in the area of spelling and phonics because lessons were designed focusing on the needs of individual students as gathered by the data from the assessments. The design of the research was very structured and was implemented with fidelity. The researcher noted that building upon the students’ basic knowledge of letter identification and sounds led them to the ability to decode words. The previously used basic curriculum was not meeting the needs because it was taught whole group, and
everyone was taught the same skill. The researcher will continue to implement small
group instruction of differentiated spelling and phonics in the reading schedule. The use
of the word sorts during phonics instruction was one of the things that was successful in
small group instruction. The students enjoyed them and were eager to complete their
assignment. Not only were the students able to identify sound patterns, they were able to
visualize a picture with the word or sound being studied. The researcher learned that all
students can be successful if strengths and weaknesses are identified. Then, the students’
strengths can be built upon at a developmentally appropriate level. This is true of all
students. Each student will have their own level of success. With the ever-increasing
demand of differentiation, this is one area that the researcher felt the students did well.

The researcher reflected on what could have been done differently throughout the
study. Rather than using the DRA data from spring the previous year, the researcher
would have administered the DRA test to the students in the fall to account for any
summer loss. Many students did not appear to have much growth from pre-assessment to
post-assessment because the students had not been tested in the fall so there was not
accurate data to indicate what level they were on. The researcher would also wait a few
weeks into the school year before administering the CORE Phonics Survey and the
Words Their Way Primary Spelling Inventory to give the students time to review skills
they may have lost over the summer.

As the researcher reflected on the study, the implications for the school and
district are very important. Lack of resources have been reported by other teachers as
well (Doyle, Zhang, & Mattatall, 2015). Since the school district has no scripted
curriculum, teachers are given the opportunity to plan and implement lessons on their
own. It is important that all students are not taught the same thing at the same time if they are not developmentally ready. This study will provide data that indicates students had achievement when developmentally appropriate instruction is implemented. All students, no matter their personal limitations, improved their skills and the data indicates this. However, further research should be conducted to meet the needs of students in reading accuracy, and retelling. A book study on this subject would be a good place to start, providing on-going professional development for practicing teachers would be beneficial as well. This is consistent with recommendations made by other researchers (Doyle, Zhang, & Mattatall, 2015; McNeil & Kirk, 2014). The district is forming a curriculum committee currently to purchase a new reading program. Once that is purchased, the researcher will continue to differentiate small groups phonics and spelling instruction based on students’ development. The main concern for students leaving first grade is to be able to read and comprehend. The small group instruction appeared to have built a good foundation in phonics. Educators can look at this study and research provided to implement within their own classrooms and have the expectation of desired student growth.

**Summary**

The purpose of this study was to determine if a students’ level of orthography, decoding ability, and reading accuracy would change because of participating in developmentally appropriate spelling and phonics small group instruction. The researcher found supporting literature on this topic and the findings provided support that developmentally appropriate spelling and phonics small group instruction was an effective strategy to implement in the classroom. These findings were supported by the
works of the International Reading Association and the National Association for the Education of Young Children (1998) once again stating, “it is common to find within a kindergarten classroom a five-year range in children’s literacy-related skills and functioning” which means that some students will have “skills characteristic of the typical three-year-old, while others might be functioning at the level of the typical eight-year old” (p. 2). No student learns the same or at the same time as others. Therefore, it is so important to differentiate to meet the needs of all students.
References


Appendix A

IRB Approval Form
To: Carla Patrick (McGuffey)

From: Dr. Darby Hiller, Assistant Provost Academic Affairs and Institutional Research

Date: 09/07/2017

Re: IRB 002-201718

Wittenberg's Institutional Review Board has reviewed your proposal for the project titled IMPACT OF DEVELOPMENTALLY APPROPRIATE SPELLING AND PHONICS SMALL GROUP INSTRUCTION ON STUDENT READING LEVEL. The IRB reviewer was able to expedite your proposal. The informed consent documents and survey instruments, and debriefing forms were also reviewed. The reviewer has no further questions or modifications.

Your project is approved by the Wittenberg IRB through expedited review. This approval will expire on 09/07/2018, at which time you will need to submit an update on your research for continued approval, as needed.

Please contact me with any questions regarding this document.

Darby L. Hiller

Dr. Darby Hiller,
Chairperson IRB
hillerd@wittenberg.edu
937 501 1024
Appendix B

Parental Permission Letter
Dear Parents and/or Guardians,

My name is Carla Patrick and I am a graduate student at Wittenberg University. I am investigating the impact of developmentally appropriate spelling and phonics small group instruction on student reading level as measured by the DRA II assessment. Your child’s participation is an integral part of my research. I am asking you to allow your child to participate in small group intervention sessions led by me during Guided Reading time already allotted in the daily schedule.

I am hopeful that you will allow your child to participate in my study. The study will be anonymous, meaning that your child’s name will appear nowhere in the final thesis. The children will be assigned numbers and all of their data will correlate to that number, insuring your child’s confidentiality.

I greatly appreciate your permission for your child to participate in this research. You can contact me at patrickcj@scsdoh.org or the chairperson of my Master’s Thesis: Dr. Amy McGuffey (amcguffey@wittenberg.edu) at any time.

Thank you so much for your involvement!

Carla Patrick

The study will consist of meeting with your child during Guided Reading small group time for 30 minutes twice a week for approximately 8 weeks. The intervention will focus on differentiated spelling and phonics instruction using researched based practices as presented in the book Words Their Way. At the end of the intervention, their reading level will be tested through DRA and the Words Their Way Spelling Inventory. This data is already going to be obtained by the school as part of classroom intervention to determine a students’ needs therefore; there is nothing extra that they must do. I want to see if their reading scores increase after the intervention. I do not foresee any reasonable risks or discomforts to the students. If differentiated spelling and phonics increases their reading level according to the assessments given, this would benefit the student.

Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which your student is otherwise entitled, and your child may discontinue participation at any time without penalty or loss of benefits, to which the subject is otherwise entitled.
When the final paper is published, I can give you a copy of the abstract. I can also give you a final copy of the thesis. Both things will be given to you at your request.

By checking “Yes” and signing this waiver, you are giving your child permission to participate in this study. If, however, you do not wish your child to participate in, please check “No” and sign below and send this back with your child. I encourage you to call me before you decide not to let your child participate with any questions you may have about the study and am ready and willing to answer them. Please contact me at (937) 505-4260 or email me at patrickcj@sesdoh.org.

For questions regarding your rights as a participant in this research or IRB approval, contact Dr. Darby Hiller, Assistant Provost for Academic Affairs and Institutional Research, IRB Chair, at 937-591-1024, or by email at hillerd@wittenberg.edu.

Thank you for your time,

Carla Patrick

-------------------------------------------------------------------------------------------------------------------------

PLEASE RETURN AS SOON AS POSSIBLE

☐ Yes, I give ______________________ permission to participate in this study
   (student’s name)

☐ No, I do not give ______________________ permission to participate in this study.
   (student’s name)

______________________________   ________________
Parent/Guardian Signature      Date
Appendix C

Child Assent Form
CHILD ASSENT FORM (AGES 7 AND UP)
I am Carla Patrick and I am a graduate student at Wittenberg University. I am doing a study to figure out if differentiated spelling and phonics lessons during Guided Reading time will help you become a better reader. I am asking you to be a part of this study to help me see if the instruction I planned for you improved your reading score on DRA.

For this research, we will meet during Guided Reading groups for 30 minutes twice per week. We will be doing activities from Words Their Way. I will keep all your answers private. I will not use your name, I will only use your numbers and will not show them to anyone at our school. Only people from Wittenberg University will see your work and then they will only see your number, not your name.

I don’t think that any big problems will happen to you as part of this study, but you might feel sad or frustrated as the groups change. You also might be upset if other kids see your answers, but I will try to keep other kids from seeing what you write.

You can feel good about helping me plan instruction based on your needs. This study will also allow me to share my results with the other first grade teachers, so they can try this in their room as well.

You should know that:

- You do not have to be in this study if you do not want to. You won’t get into any trouble with anyone if you say no.
- You may stop being in the study at any time. If you have concerns, you can talk to me at any time.
- Your parent(s)/guardian(s) were asked if it is OK for you to be in this study. Even if they say it’s OK, it is still your choice whether or not to take part.
- You can ask any questions you have, now or later. If you think of a question later, you or your parents can contact me at patrickcj@scsdoh.org or at 505-4260.
Sign this form only if you:

- have understood what you will be doing for this study,
- have had all your questions answered,
- have talked to your parent(s)/legal guardian about this project, and
- agree to take part in this research

____________________________________
Your Signature                Printed Name              Date

____________________________________
Name of Parent(s) or Legal Guardian(s)

____________________________________
Researcher explaining study
Signature                  Printed Name
Appendix D

*Words Their Way* Primary Spelling Inventory Feature Guide
Appendix E

CORE Phonics Survey
Alphabet Skills and Letter Sounds

PART A  Letter names—uppercase
Say to the student: Can you tell me the names of these letters? If the student cannot name three or more consecutive letters, say: Look at all of the letters and tell me which ones you do know.

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

PART B  Letter names—lowercase
Say to the student: Can you tell me the names of these letters? If the student cannot name three or more consecutive letters, say: Look at all of the letters and tell me which ones you do know.

d a n s x z j l h
t y e c o m r p w
k u g b f q v i

PART C  Consonant sounds
Say to the student: Look at these letters, Can you tell me the sound each letter makes? Be sure to ask if he or she knows another sound for the letters g and k. If the sound given is correct, do not mark the Record Form. If it is incorrect, write the sound the student gives above each letter. If no sound is given, circle the letter. If the student cannot say the sound for three or more consecutive letters, say: Look at all of the letters and tell me which sounds you do know.

d l n s x z j
t y p c h m r
k w g b f q v

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45
PART D Vowel sounds

Ask the student: Can you tell me the sounds of each letter? If the student names the letters correctly, say long at the long vowel sound. Then ask: Can you tell me another sound for the letter? The student should name the short vowel sound.

\[
\begin{array}{ccc}
\text{a} & \text{i} & \text{o} & \text{u} \\
\text{I} & \text{s} & \text{I} & \text{s} \\
\text{long sound} & \text{short sound} & \text{short sound} & \text{short sound}
\end{array}
\]

Record 'I' on the first line for the long sound letter name and 's' for the short sound on the second line. If the student makes an error, record the error over the letter.

Long vowel sounds (count the number of 'I's above)

Short vowel sounds (count the number of 's's above)

Reading and Decoding

For Parts E through K students must read both real and pseudowords (made-up words). For the real word lines, tell the student: I want you to read each line of words aloud. If the student cannot read two or more of the real words in each line, do not administer the line of pseudowords; go to the next set of items. Before asking the student to read the line of pseudowords, say: Now I want you to read some made-up words. Do not try to make them sound like real words. When using this assessment as a specific skills test or screening measure, do not discontinue testing if a student does not do well on one of the items in Parts F through K. Instead, move to the next item and continue testing.

PART E Short vowels in CVC words

<table>
<thead>
<tr>
<th>3</th>
<th>sip</th>
<th>met</th>
<th>let</th>
<th>bun</th>
<th>hog (real)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>not</td>
<td>sit</td>
<td>hat</td>
<td>set</td>
<td>cat (real)</td>
</tr>
<tr>
<td>3</td>
<td>hop</td>
<td>sat</td>
<td>dit</td>
<td>pat</td>
<td>tap (pseudo)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>stop</th>
<th>trap</th>
<th>quit</th>
<th>spell</th>
<th>plan (real)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>slip</td>
<td>fat</td>
<td>tank</td>
<td>lump</td>
<td>held (real)</td>
</tr>
<tr>
<td>3</td>
<td>mask</td>
<td>dit</td>
<td>quad</td>
<td>damp</td>
<td>(pseudo)</td>
</tr>
</tbody>
</table>

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PART G  Short vowels, digraphs, and -tch trigraphs

/v/  when  then  thin  shut  wick  (real)
/wh/  what  while  when  much  (real)
/æ/  child  short  that  phial  litch  (pseudo)

PART H  Re-controlled vowels

/æ/  hamn  dirt  form  farm  surf  (real)
/æ/  worm  pert  bank  turn  bird  (real)
/æ/  mem  sit  girt  world  arm  (pseudo)

PART I  Long vowel spellings

/æ/  rape  bay  toe  paid  feet  (real)
/æ/  seep  beat  die  toy  blow  (pseudo)
/æ/  toe  hine  deep  farm  soot  (pseudo)

PART J  Variant vowels

/æ/  few  down  moon  hawk  coin  (real)
/æ/  cue  loud  cool  haunt  toy  (real)
/æ/  root  new  stout  zay  bawk  (pseudo)

PART K  Low frequency vowel and consonant spellings

/æ/  alone  cent  type  ghost  wrist  (real)
/æ/  giant  sweat  great  bomb  sigh  (real)
/æ/  bite  bread  climb  tight  weep  (pseudo)
PART I  Multisyllabic words

To administer, say to the student: I want you to read aloud from the first column of words. Each of the real words in this column has two syllables. Point to the first column, if the student can read at least five out of eight of the words in this column, point to the second column and say: Now I want you to read aloud the next column of words. If the student can read at least five of the words in the second column, point to the third column and say: Now I want you to read some made-up words. Do not try to make them sound like real words.

<table>
<thead>
<tr>
<th></th>
<th>Closed</th>
<th>closed</th>
<th>unless</th>
<th>consent</th>
<th>timbrel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Closed</td>
<td>silent e</td>
<td>compere</td>
<td>admire</td>
<td>compute</td>
</tr>
<tr>
<td></td>
<td>Opened</td>
<td>closed</td>
<td>depend</td>
<td>radiate</td>
<td>podate</td>
</tr>
<tr>
<td></td>
<td>Opened</td>
<td>closed</td>
<td>zero</td>
<td>menu</td>
<td>granule</td>
</tr>
<tr>
<td></td>
<td>Silent e</td>
<td>locate</td>
<td>intuited</td>
<td>pantela</td>
<td></td>
</tr>
<tr>
<td></td>
<td>component</td>
<td>stable</td>
<td>climate</td>
<td>marble</td>
<td></td>
</tr>
<tr>
<td></td>
<td>r-Controlled</td>
<td>further</td>
<td>bordered</td>
<td>envior</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vowel team</td>
<td>railways</td>
<td>roaring</td>
<td>fountain</td>
<td></td>
</tr>
</tbody>
</table>

* The first syllable of these words can be either open or a closed (long or short vowel sound, respectively); the second syllable of podated can be either a closed (short vowel sound) or a silent -e (long vowel sound) syllable, due to the rules for adding -ed.*

---

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CORE Phonics Survey—Student Material
Alphabet and Letter Sounds

PART A

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

PART B

d  a  n  s  x  z  j  l  h
T  Y  E  C  O  M  R  P  W
K  U  G  B  F  Q  V  I

PART C

D  l  n  s  x  z  j
T  Y  P  C  H  M  R
K  W  G  B  F  Q  V

PART D

E  I  A  O  U

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### PART E

<table>
<thead>
<tr>
<th>sip</th>
<th>mat</th>
<th>let</th>
<th>hun</th>
<th>hog</th>
</tr>
</thead>
<tbody>
<tr>
<td>rut</td>
<td>fit</td>
<td>bat</td>
<td>hot</td>
<td>set</td>
</tr>
<tr>
<td>nop</td>
<td>sut</td>
<td>dit</td>
<td>pem</td>
<td>fap</td>
</tr>
</tbody>
</table>

### PART F

<table>
<thead>
<tr>
<th>stop</th>
<th>trap</th>
<th>quit</th>
<th>spell</th>
<th>plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>silk</td>
<td>fast</td>
<td>sank</td>
<td>lump</td>
<td>held</td>
</tr>
<tr>
<td>mask</td>
<td>dilt</td>
<td>quek</td>
<td>Camb</td>
<td>dran</td>
</tr>
</tbody>
</table>

### PART G

<table>
<thead>
<tr>
<th>when</th>
<th>chop</th>
<th>thin</th>
<th>shut</th>
<th>wick</th>
</tr>
</thead>
<tbody>
<tr>
<td>dodge</td>
<td>rash</td>
<td>ring</td>
<td>then</td>
<td>match</td>
</tr>
<tr>
<td>chid</td>
<td>shom</td>
<td>dath</td>
<td>phid</td>
<td>futch</td>
</tr>
</tbody>
</table>
### PART H
<table>
<thead>
<tr>
<th>harm</th>
<th>dirt</th>
<th>form</th>
<th>fern</th>
<th>surf</th>
</tr>
</thead>
<tbody>
<tr>
<td>worn</td>
<td>pert</td>
<td>bark</td>
<td>turn</td>
<td>bird</td>
</tr>
<tr>
<td>nerm</td>
<td>sirt</td>
<td>gorf</td>
<td>murd</td>
<td>carn</td>
</tr>
</tbody>
</table>

### PART I
<table>
<thead>
<tr>
<th>tape</th>
<th>key</th>
<th>toe</th>
<th>paid</th>
<th>feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>leap</td>
<td>boat</td>
<td>tie</td>
<td>ray</td>
<td>blow</td>
</tr>
<tr>
<td>loe</td>
<td>hine</td>
<td>beap</td>
<td>falm</td>
<td>soat</td>
</tr>
</tbody>
</table>

### PART J
<table>
<thead>
<tr>
<th>few</th>
<th>down</th>
<th>moon</th>
<th>hawk</th>
<th>coin</th>
</tr>
</thead>
<tbody>
<tr>
<td>cue</td>
<td>loud</td>
<td>cook</td>
<td>haunt</td>
<td>toy</td>
</tr>
<tr>
<td>voot</td>
<td>rew</td>
<td>fout</td>
<td>zoy</td>
<td>bawk</td>
</tr>
</tbody>
</table>

### PART K
<table>
<thead>
<tr>
<th>kneel</th>
<th>cent</th>
<th>type</th>
<th>ghost</th>
<th>wrist</th>
</tr>
</thead>
<tbody>
<tr>
<td>giant</td>
<td>sweat</td>
<td>gnat</td>
<td>bomb</td>
<td>sigh</td>
</tr>
<tr>
<td>blice</td>
<td>knod</td>
<td>dimb</td>
<td>tigh</td>
<td>wrep</td>
</tr>
</tbody>
</table>

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Appendix F

DRA
1. READING ENGAGEMENT

(If the student has recently answered these questions, skip this section.)

E: Who reads with you or to you at home?

F: Would you rather listen to a story or read a story to someone?

Why?

G: Tell me about one of your favorite books.

2. ORAL READING FLUENCY

INTRODUCTION AND PREVIEW

E: In this story, Where Is My Hat?, a little boy named Ben doesn't know where his hat is. Look at all of the pictures, and tell me what is happening in this story.

Note the student's use of connecting words (e.g., and, then, but) and vocabulary relevant to the text. You may use general prompts, such as "Now what is happening?" or "Turn the page," but do not ask specific questions. Tally the number of times you prompt.

RECORD OF ORAL READING

Record the student's oral reading behaviors on the Record of Oral Reading below and on the following page.

E: Where is My Hat? Now, read to find out where Ben and his room look for his hat.

Page 2

"Where is my hat?" said Ben.

Page 3

Ben looked under his bed.

"It is not here," he said.
Mom looked in the closet.  
"It is not here," she said.

Ban looked in his key box.  
"It is not here," he said.
He looked and looked.

Mom looked behind the chair.

"Here it is!" she said.

**DRAAL RESULTS: PERCENT OF ACCURACY**

Count the number of miscues that are not self-corrected. Circle the percent of accuracy based on the number of miscues.

<table>
<thead>
<tr>
<th>Number of Miscues</th>
<th>5 or More</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Accuracy</td>
<td>91 or Less</td>
<td>91</td>
<td>91</td>
<td>90</td>
<td>80</td>
<td>0</td>
</tr>
</tbody>
</table>

* If the student's score falls in a shaded area, STOP! Reassess with a lower-level text.
* If the student is reading below the grade-level benchmark, administer DRA A Word Analysis, beginning with Task 8, at another time.
3. COMPREHENSION

RETELLING

As the student retells, underline and record on the Story Overview the information included in
the student’s retelling. Please note the student does not need to use the exact words.

1. Close the book, and then say: Start at the beginning, and tell me what happened in this story.

Story Overview

Beginning

1. Ben said, “Where is my hat?”

Middle

2. He looks under the bed, and says, “It is not here.”

3. Mum looks in the closet and says, “It is not here.”

4. Ben looks in his toy box and says, “It is not here.”

5. Mum looks behind a chair and...

End

6. Mum finds the hat behind a chair with the dog lying on it.

7. Mum says, “Here it is!” and puts the hat on Ben.

If the retelling is limited, use one or more of the following prompts to gain further information.
Place a checkmark by a prompt each time it is used.

☐ Tell me more.

☐ What happened at the beginning?

☐ What happened before/after ___________________ (an event mentioned by the student)?

☐ Who else was in the story?

☐ How did the story end?

REFLECTION

Record the student’s responses to the prompts and questions below.

F. What part did you like best in this story? Tell me why you liked that part.

MAKING CONNECTIONS

Note if the student makes a text-to-self connection in his or her response to the above prompt,
skip the following question.

G. What did this story make you think of? Or What connections did you make while reading this story?
Appendix G

Timeline of Events
### Timeline of Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 28, 2017</td>
<td>Pre-assessment <em>Words Their Way</em> Primary Spelling Inventory Feature Guide</td>
</tr>
<tr>
<td>August 30, 2017</td>
<td>Pre-assessment CORE <em>Phonics Survey</em></td>
</tr>
<tr>
<td>September 26, 2017</td>
<td>Child Assent Form was signed by students</td>
</tr>
<tr>
<td>September 27, 2017</td>
<td>Parent Permission letter sent home</td>
</tr>
</tbody>
</table>
| September 25th-29th | Intervention Week 1  
Group 1 –an  
Group 2 -an  
Group 3 –an  
Group 4-initial blend st |
| October 2nd-6th     | Intervention Week 2  
Group 1 –it  
Group 2 -it  
Group 3 –it  
Group 4-final blend st |
| October 9th-13th    | Intervention Week 3  
Group 1 –ad  
Group 2 -ad  
Group 3 –ad  
Group 4-initial and final blend st |
| October 16th-20th   | Intervention Week 4  
Group 1 –ot  
Group 2 –initial consonants b, m, r, s  
Group 3 –short vowels a and i  
Group 4-digraph ch |
| October 23rd-27th   | Intervention Week 5  
Group 1 –ig  
Group 2 -initial consonants c, h, f, d  
Group 3- short vowels a, o, i, u  
Group 4-digraph th |
<table>
<thead>
<tr>
<th>Date Range</th>
<th>Intervention Week</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 30th-November 3rd</td>
<td>6</td>
<td>ob</td>
<td>t, g, n, p</td>
<td>e, i, o, u</td>
<td>sh</td>
</tr>
<tr>
<td>November 6th-10th</td>
<td>7</td>
<td>un</td>
<td>l, k, j, w</td>
<td>a, i, o</td>
<td>wh</td>
</tr>
<tr>
<td>November 13th-17th</td>
<td>8</td>
<td>et/ed</td>
<td>y, z, w</td>
<td>a, o</td>
<td>sh, ch, wh, th</td>
</tr>
<tr>
<td>November 20th</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>November 21st</td>
<td></td>
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<tr>
<td>December 4th and 5th</td>
<td></td>
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<td></td>
<td>Winter 2017 DRA</td>
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<tr>
<td>April 23rd and 25th</td>
<td></td>
<td></td>
<td></td>
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<td>Spring 2018 DRA</td>
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<tr>
<td>May 2, 2018</td>
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<td>EOY assessment Words Their Way</td>
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<td></td>
<td>Primary Spelling Inventory Feature Guide</td>
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<td></td>
<td></td>
<td></td>
<td>EOY CORE Phonics Survey</td>
</tr>
</tbody>
</table>
Appendix H

Riddles Activity

I hit the ball with a bat.
Templeton is a rat.
The cat drinks milk.
I sat in my chair.
I wipe my feet on a mat.
The elephant is fat.
I have a hat on my head.

hat
sat
rat
fat
pat
at
Appendix I

Picture/Word Sorts
Sort #1

Bb  Mm  Pr  Ss

- Bag
- Card
- Stick
- Schoolhouse
- Bed
- Monster
- Book
- Sun
- Box
- Child
- Bones
- Number 6
- Bee
- Mermaid
- Woman
- Man
- Scissors
- Bat
- Cupcake
- Star

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Appendix J

Intervention Groups
### Intervention Group 1 (Students E, G, and J)

<table>
<thead>
<tr>
<th>Intervention Week</th>
<th>Phonics Skill</th>
<th>Spelling Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Final consonants -an word family</td>
<td>man, can, pan, ran, fan</td>
</tr>
<tr>
<td>2</td>
<td>Final consonants -it word family</td>
<td>sit, bit, hit, kit, fit</td>
</tr>
<tr>
<td>3</td>
<td>Final consonants -ad word family</td>
<td>dad, sad, mad, pad, bad</td>
</tr>
<tr>
<td>4</td>
<td>Final consonants --ot word family</td>
<td>not, got, hot, pot, dot</td>
</tr>
<tr>
<td>5</td>
<td>Final consonants -ig word family</td>
<td>pig, wig, big, dig, fig</td>
</tr>
<tr>
<td>6</td>
<td>Final consonants -ob word family</td>
<td>job, rob, cob, mob, sob</td>
</tr>
<tr>
<td>7</td>
<td>Final consonants -et and -ed</td>
<td>gun, sun, run, bun, fun</td>
</tr>
<tr>
<td>8</td>
<td>Final consonants -at, -ot, -it</td>
<td>bat, jet, hit, pot, rug</td>
</tr>
</tbody>
</table>
### Intervention Group 2 (Students A, and I)

<table>
<thead>
<tr>
<th>Intervention Week</th>
<th>Phonics Skill</th>
<th>Spelling Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Initial sounds -an word family</td>
<td>man, can, pan, ran, fan</td>
</tr>
<tr>
<td>2</td>
<td>Initial sounds -it word family</td>
<td>sit, bit, hit, kit, fit</td>
</tr>
<tr>
<td>3</td>
<td>Initial sounds -ad word family</td>
<td>dad, sad, mad, pad, bad</td>
</tr>
<tr>
<td>4</td>
<td>Initial sounds b, m, r, s sounds</td>
<td>not, got, hot, pot, dot</td>
</tr>
<tr>
<td>5</td>
<td>Initial sounds c, h, f, d sounds</td>
<td>pig, wig, big, dig, fig</td>
</tr>
<tr>
<td>6</td>
<td>Initial sounds t, g, n, p</td>
<td>job, rob, cob, mob, sob</td>
</tr>
<tr>
<td>7</td>
<td>Initial sounds l, k, j, w</td>
<td>gun, sun, run, bun, fun</td>
</tr>
<tr>
<td>8</td>
<td>Initial sounds y, z, w</td>
<td>bat, jet, hit, pot, rug</td>
</tr>
</tbody>
</table>
**Intervention Group 3 (Students D, C, F, and H)**

<table>
<thead>
<tr>
<th>Intervention Week</th>
<th>Phonics Skill</th>
<th>Spelling Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Short vowels -an word family</td>
<td>man, can, pan, ran, fan</td>
</tr>
<tr>
<td>2</td>
<td>Short vowels -it word family</td>
<td>sit, bit, hit, kit, fit</td>
</tr>
<tr>
<td>3</td>
<td>Short vowels -ad word family</td>
<td>dad, sad, mad, pad, bad</td>
</tr>
<tr>
<td>4</td>
<td>Short vowels a, i</td>
<td>not, got, hot, pot, dot</td>
</tr>
<tr>
<td>5</td>
<td>Short vowels a, o, i, u</td>
<td>pig, wig, big, dig, fig</td>
</tr>
<tr>
<td>6</td>
<td>Short vowels e, i, o, u</td>
<td>job, rob, cob, mob, sob</td>
</tr>
<tr>
<td>7</td>
<td>Short vowels a, i, o</td>
<td>gun, sun, run, bun, fun, run</td>
</tr>
<tr>
<td>8</td>
<td>Short vowels a, o</td>
<td>bat, jet, hit, pot, rug</td>
</tr>
<tr>
<td>Intervention Week</td>
<td>Phonics Skill</td>
<td>Spelling Words</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>St blend (initial sound)</td>
<td>star, stir, stamp, stump, stick</td>
</tr>
<tr>
<td>2</td>
<td>St blend (final sound)</td>
<td>past, cast, last, fast, mast</td>
</tr>
<tr>
<td>3</td>
<td>St blend (initial and final sound)</td>
<td>first, stop, must, rust, most</td>
</tr>
<tr>
<td>4</td>
<td>Digraph ch</td>
<td>chip, chop, chat, such, rich</td>
</tr>
<tr>
<td>5</td>
<td>Digraph th</td>
<td>teeth, bath, cloth, thorn, thumb</td>
</tr>
<tr>
<td>6</td>
<td>Digraph sh</td>
<td>shut, shop, rush, fish, ship</td>
</tr>
<tr>
<td>7</td>
<td>Digraph wh</td>
<td>when, whale, white, what, why</td>
</tr>
<tr>
<td>8</td>
<td>Digraphs sh, ch, wh, th</td>
<td>such, rush, white, with, chop</td>
</tr>
</tbody>
</table>

*Intervention Group 4 (Students B)*