Kindergarten Teachers' Use of Writing Scaffolds To Support Children's Developing

Orthographic Knowledge

A Capstone Project

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by

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EXECUTIVE SUMMARY

Orthographic knowledge is the component of writing that allows a child to spell out his message. Boosting orthographic knowledge during writing instruction could impact children's overall literacy skills (Rodgers, 2004). However, very little research has focused on the ways teachers can actively support the development of orthographic knowledge during writing. The purpose of this qualitative study was to examine: (1) the ways in which kindergarten teachers use verbal scaffolds to support children's orthographic development during writing instruction, and (2) how these verbal scaffolds differ according to teachers' perception of children's existing orthographic knowledge.

Methodology

This study was structured as a case study of four kindergarten teachers in a single rural school district in a mid-Atlantic state. Data was collected over a 4-week period in the fall of the academic year and included surveys, semi-structured interviews, observations, and the collection of artifacts. Data was analyzed in an iterative fashion involving data condensation, data display, and drawing and verifying conclusions. There was an intentional focus on ensuring trustworthiness through measures that ensured credibility, transferability, dependability, and confirmability.

Findings

Findings indicated that all four teachers regularly used a wide range of scaffolding strategies during writing instruction; however, teachers tended to use more high-support

scaffolds than low-support scaffolds. High-support scaffolds were ones in which the teachers provided a high level of support and the demand on the child was minimal (e.g., "Listen to the word /ppp/*pot*. I hear a /p/ so I will write a *p*."). Teachers tended to employ these scaffolds more often when children were writing independently than when children were in small or whole group settings. Moreover, they utilized scaffolds consistently across contexts with the exception of modeling. Although teachers recognized that adjustments in scaffolds are needed to support children at different levels of orthographic knowledge, they did not always accurately match their scaffolds to children's needs. They provided scaffolds more closely aligned to children's orthographic needs when students were beginning to use invented spelling; however, they were less successful with accurately matching scaffolds for the highest and lowest achieving groups in their class.

Implications and Recommendations

This study represents a first step in closely observing the verbal scaffolds kindergarten teachers use to build children's orthographic knowledge during writing instruction. Further research is needed to more fully understand how to help teachers build their knowledge and ability to scaffold writing in a way that boosts literacy skills. Based on the findings, I provided four recommendations for the four teachers in this study: (1) Teachers should participate in a professional development workshop focused on the range of scaffolds that are useful for kindergarten writers. (2) Teachers should explore the use of procedures and strategies that will teach children to be independent in

using available supports. They should also use strategies to encourage children to work together to provide support to classmates. (3) To build teachers' self-efficacy and improve teachers' knowledge of children's orthographic development, teachers should participate in training regarding the development of reading and spelling. (4) Teachers should receive on-going support regarding their efforts to provide appropriate scaffolds.

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APPROVAL OF THE CAPSTONE

This capstone, *Kindergarten Teachers' Use of Writing Scaffolds To Support Children's*

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Doctor of Education.

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DEDICATION PAGE

This capstone is dedicated to my children,
Macie, Madelyn, Anderson, and Juliet Copp.

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of you is that you will always know how much I love you and how proud I am to be your

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INTRODUCTION

Literacy is a powerful set of skills that allows us to fully function in society and opens the doors of opportunity. In her book, *Thank You, Mr. Falker,* children's author Patricia Polacco tells the story of how she went through elementary school unable to read until she met the teacher that changed the course of her life. As Patricia entered fifth grade unable to write most of her letters correctly, her teacher Mr. Falker worked diligently to help her learn to read and write. Through experiences that required Patricia to read and write words, Mr. Falker's efforts were successful. Patricia Polacco grew up to love reading and have a successful career as a writer. There are many similar stories of influential people who claim a combination of early reading and writing interventions changed the trajectory of their lives. Reading and writing are the key elements of literacy that exist in a reciprocal relationship and are influenced by the adults in a child's life.

Statement of the Problem

Reading and writing are both indispensable elements of literacy, but in the typical child's early school experience in the United States, they are not present to the same degree. Since the 2001 legislation of No Child Left Behind (NCLB; 2001), billions of dollars have been spent to enhance reading instruction. Programs such as Reading First (NCLB, 2001) have used monies for research-based professional development, instructional materials, and assessments. Although Reading First is no longer a funded program, it likely had an influence on early primary grade teachers' perceptions of what

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is important to improve children's literacy. Reading First focused on phonemic awareness, phonics, vocabulary, fluency, and comprehension; this program led to a shift in curricula to adhere to this focus. This heavy focus may have created a curriculum gap for students (Teale, Paciga, & Hoffman, 2007). A *curriculum gap* is the absence of certain important dimensions within a given curriculum; one of those key gaps is writing instruction (Teale et al., 2007). After the Reading First initiative, there was an increased period of accountability on education in the primary grades. This shift led to a much greater emphasis on literacy content than in previous decades and more teachers making writing part of their instruction; however, as of 2010, only around 50% of teachers reported having children participating in writing composition (Bassok, Lantham, & Rorem, 2016)

Some initiatives have been made to emphasize writing; however, writing is still not given appropriate attention. Over the last decade, the concern and focus on writing instruction has been seen through initiatives such as the National Commission on Writing (2003) and the prominence of writing in the Common Core State Standards Initiative (National Governors Association Center for Best Practices, 2010). These initiatives called for writing through the elementary school grades. The supporting research that undergirds these initiatives suggests that a minimum of 30 minutes a day should be spent on writing instruction in kindergarten (Graham, McKeown, Kiuhara, & Harris, 2012) and that writing instruction, as early as age 3, may impact the trajectory of children's later school success (Aram & Biron, 2004; Puranik & Lonigan, 2011). Despite those efforts, research on writing instruction in early childhood classrooms indicates it is often limited to less than ten minutes a day (Puranik, Al Otaiba, Sidler, & Gruelich, 2014). Although

writing instruction is given far less attention, it remains an important part of the literacy construct that provides children's an opportunity to actively build both writing and reading knowledge and allows them to participate in daily tasks and express their ideas (Fitzgerald & Shanahan, 2000). For these reasons, more research is needed to know what is happening during writing instruction to understand the extent to which its potential is maximized. In this study, I explored the ways kindergarten teachers use writing instructional time to bolster skills used in writing and reading.

The Power of Writing

At the most basic level, writing allows children to complete functional tasks such as signing names and writing other required information for completing forms. This functional task is required even at the onset of formal schooling as preschool teachers ask children to "sign up" for play centers or put their name on the top of their papers. Writing one's name is a motivating task because children see their name written on cubbies, coat hooks, desks, and folders and realize that labeling such things with their name is a useful strategy for claiming ownership (Clay, 1975). Children in preschool love to write their names and are typically very proud of their early attempts and eventual success. Across socioeconomic groups and cultures, children's names are often the first word that they write (Levin, Both-de Vries, Aram, & Bus, 2005). Children also rely on names to support other writing attempts. For example, Macie may write MCE and claim that the series of letters stands for the words *Happy Birthday*. Early attempts to spell words outside of the name, while they may look random, will often appear as a repeated string of letters that appear in children's own names. Researchers suggest that name writing is highly related to later reading development and specifically is related to

alphabet knowledge, print concepts, recognition of sight words, and the ability to correctly point to words while reading a memorized text (Adam, 1990; Bloodgood, 1999; Cabell, Justice, Zucker, & McGinty, 2009; Diamond, Gerde, & Powell, 2008; Puranik, Lonigan, & Kim, 2011; Welsch, Sullivan, & Justice, 2003).

Writing allows children to express their personal ideas about the world around them. Around two years old, children will grab a crayon and make scribbles on a paper, but those scribbles are little more than a visual and kinesthetic extension of self (Gibson & Levin, 1975); however, as children progress in their development, they begin to attach a meaning to their message (Clay, 1975). Interestingly, at this point, they will often first make a mark then ask the parent or teacher, "What did I write?" (Clay, 1975). They may recognize that print carries meaning, but they may not yet know that the meaning originates with them. Eventually, children realize that they control the message and from then on they can capitalize on writing to give them a voice. My daughter capitalized on this power at around four years old. One particularly cold afternoon, she was waiting on the porch as I grabbed the last of the groceries out of the car. As was typical for her, she had a pen and paper in hand. When I arrived on the porch, she flashed her writing to me: *ICD* (I am cold). Around one year old she had learned to express things she wanted verbally, but now she was able to express her needs in writing. We headed inside and got a warm blanket.

Not only does writing allow children to complete basic tasks like name writing and give them a voice to express their ideas in a new way, but it also empowers children to actively create their knowledge of how words work. They can integrate and apply seemingly isolated skills about meaning, speech sounds, and letters in a meaningful way.

For decades, the education field has known that children's writing is not strictly an important skill to develop after a child is reading, but it can be an entrée into reading (Chomsky, 1971). Research has shown that children may begin writing before they can read or even show an interest in reading (Bissex, 1985). In 1971, Carol Chomsky posited in her seminal piece *Write First, Read Later* that "children ought to learn how to read by creating their own spellings for familiar words as a beginning" (p. 296). Beginning with writing rather than waiting to begin writing until a child can read allows children to start reading a self-generated text that has personal meaning and belongs to them. They are integrating their awareness of speech sounds and alphabet knowledge in a context that is created by them as opposed to a text that is externally imposed upon them.

Very early in the process of literacy development, children begin to reread what they have written or what they have asked adults to write for them. Rereading these messages is a powerful instructional tool for facilitating spelling development, which is a component of writing (Labbo, Eakle, & Montero, 2002; Stauffer, 1970). After all, the process of spelling and reading are both very similar. When thinking about spelling, it is common to first think about of it as simply a visual representation of word on paper; however, Ehri (2000) argues that the processes of spelling mirror many of the same processes involved in reading—specifically, the coordination of pronunciations and meaning through the spelling system of a language. Developmental spelling research has demonstrated that children's invented spelling develops in synchrony with reading (Beers & Henderson, 1977; Henderson & Beers, 1980; Read, 1975). Further, evidence suggests that engaging in invented spelling has positive effects on reading skills (Ehri & Wilce,

1987; Uhry & Shepherd, 1993). In fact, recent research suggests that writing instruction focused on developing code-related skills has led to improvements in the skills needed for success in reading (Hertz & Heydenberk, 1997; Jones, Reutzel, & Fargo, 2010; Jones & Reutzel, 2015). Reading and spelling are very similar processes, particularly in the very beginning of literacy acquisition; therefore, growth in one impacts growth in the other.

Definition of Writing

Experts have a multidimensional view of writing that includes composition, handwriting, and orthographic knowledge (Berninger, 2000; Berninger & Winn, 2006; Kaderavek, Cabell, & Justice, 2009). It is important to note that these skills are closely related to each other. *Composition* refers to the ideas or meaning that the student represents through their written marks—their communicative intent. *Handwriting* refers to proper letter formation and includes the fine motor skills required to write letters on a page. *Orthographic knowledge* can be defined as all of the information that is needed to match the spoken word with its meaning in writing and this knowledge is observed through the spelling of words. Orthographic knowledge is the component of writing that allows the child to spell out his message. This component of writing is the focus of this study.

Orthographic Knowledge

Writers use orthographic knowledge to express ideas in print; it begins when children begin making marks to represent meaning. It develops slowly over time as children gradually learn the conventional spelling system of English. At first, typically around three to five years old, children become aware that written marks are different

from pictures and illustrations in books and carry meaning of the story beyond the pictures. When my daughter was three years old, she was drawing and writing with her 1-year-old brother. Both of them had scribbled with crayons. I asked her what her paper said and she announced, "My help comes from the Lord." I asked her what her brother's paper said and she remarked, "Oh, nothing. He is just scribbling." Someone who had not talked to or observed these two young children at work might think they were at the same level of development; however, my daughter had reached an important milestone in her writing development. At this point children typically begin to imitate the writing that they see around them (Clay, 1975); and through the scribbles, my daughter made her best efforts to recreate the print she had observed. Further, she recognized that, despite how they may appear, her writing carried meaning and the marks on her paper were not just random scribbles. She recognized that writing was more than marks on paper, but marks with the intention to communicate meaning. In short, her marks represented the beginnings of early writing. As orthographic knowledge becomes more sophisticated, the marks are letters of the alphabet that correspond to the sounds of spoken language.

Component skills of orthographic knowledge. To help the child move from scribbles to conventional spelling, the teacher must start by building the child's *alphabet knowledge*, or knowledge of the names and the sounds of the letters of the English alphabet (National Institutes of Child Health and Development, 2000). Knowledge of letters and sounds is highly connected because so many of the letter names contain their corresponding sounds (Piasta & Wagner, 2010; Share, 2004). For example, at the end of the letter name for M (em), the /m/ sound is present. Children learn letters that do not contain a sound cue through direct instruction or exposure during reading and writing.

In addition to learning the letters and sounds in isolation, the reader must learn to attend to the individual phonemes within a word at a metacognitive level (*phonemic awareness)*. This skill is mastered through a progression of skills called *phonological awareness*. Phonological awareness is the progressive awareness of the sounds within words starting from large chunks (rhyme, syllables) and moving to smaller parts of the words (phonemes), as well as the ability to detect, manipulate, or analyze a word (including rhyme, beginning sound isolation, and phonemic awareness), with phonemic awareness being the most sophisticated level of phonological awareness (National Early Literacy Panel, 2008).

As children begin to integrate phonological awareness and alphabet knowledge, they begin grasping the *alphabetic principle,* or the understanding that letters and combinations of letters can represent sounds in spoken language (Adams, 1990). Children do not attain the alphabetic principle all at once, but as alphabet knowledge and phonological awareness are improved and integrated, children develop their understanding of the alphabetic principle. The advancement can be seen in their invented spellings as well as in their development of *concept of word in text* (COW-T), which is the ability to isolate and understand a word as a stable unit. When children have this understanding, they can track words through finger pointing as they recite a memorized text. COW-T does not come all at once. Instead, it develops from a rudimentary to a firm understanding and is highly tied to the development of orthographic knowledge (Morris, 2002). COW-T is dependent on being able to isolate the beginning sound in a word and develops in synchrony with the ability to spell a word with beginning and ending sounds (Morris, 2002). Further, the attainment of COW-T is a prelude to full

phoneme segmentation, or the ability to break apart each phoneme in a word, and rapid word recognition (Morris, 2002).   This event is a watershed event in literacy (Morris, 1993) and is highly important in the process of becoming a reader.

Teaching the child to link the sounds of speech (phonemes) and print (alphabet knowledge) is the main task for the teacher of the typically developing beginning kindergarten reader and writer (Liberman, 1971; Liberman & Shankweiler, 1985).   It is seen through the increasing use of the alphabetic principle in their spelling and reading, as well as through their development of COW-T. To read and write, children must understand that alphabet letters are related to spoken sounds within a word and these words are groups of letters offset by white space and used to express a meaning. The teacher can foster this development through writing practice.

Conceptual Framework

The graphic displayed in Figure 1 depicts the conceptual framework that guides the work of this study. As seen in the figure, Vygotsky's idea of the *Zone of Proximal Development* heavily influences the thinking in this study. Vygotsky (1978) coined the term Zone of Proximal Development (ZPD) to describe the place between what a student can do independently and what the student does with support. Within the ZPD, there is a continuum of interactions in which the adult provides varying levels of assistance, or *scaffolding*, regarding tasks for which the child is not yet independent. The ZPD ends when the child can perform a task independently. My assumption is that children will move along the spectrum of orthographic knowledge most successfully when they are provided with adequate amounts of scaffolding with an appropriate instructional focus. To this end, it is important to understand developmental progressions in writing and word

recognition that may occur over the kindergarten year. I do not intend for this figure to suggest that most students will start at the top left and move along the continuum in kindergarten; rather, students will enter kindergarten all along the entire continuum and move at various speeds.

Understanding Stages of Spelling Development

Orthographic development is showcased in young children's writing by their first marks connected with meaning, and researchers agree that there is a systematic process of learning about these patterns and evidence that spellings progressively move toward the representation of the sounds within the word and eventually transition to conventional spelling. Moving from scribbles to correct spelling is a process that occurs over time and relies on advancing knowledge of the orthographic system and repeated practice. Children's writing attempts provide a window into what children understand about how the spelling system works. Researchers of developmental spelling focus on the three layers of English orthography: alphabet/sound, pattern, and meaning. As children develop their orthographic knowledge, it is clear that although the layers may sometimes overlap, there is generally a predominant layer. This predominant layer has the greatest influence on the child's spelling, as well as reading, at that point in time. The layers of alphabet/sound and pattern are the predominant influence in kindergarten. A representation of this development is at the top of Figure 1.
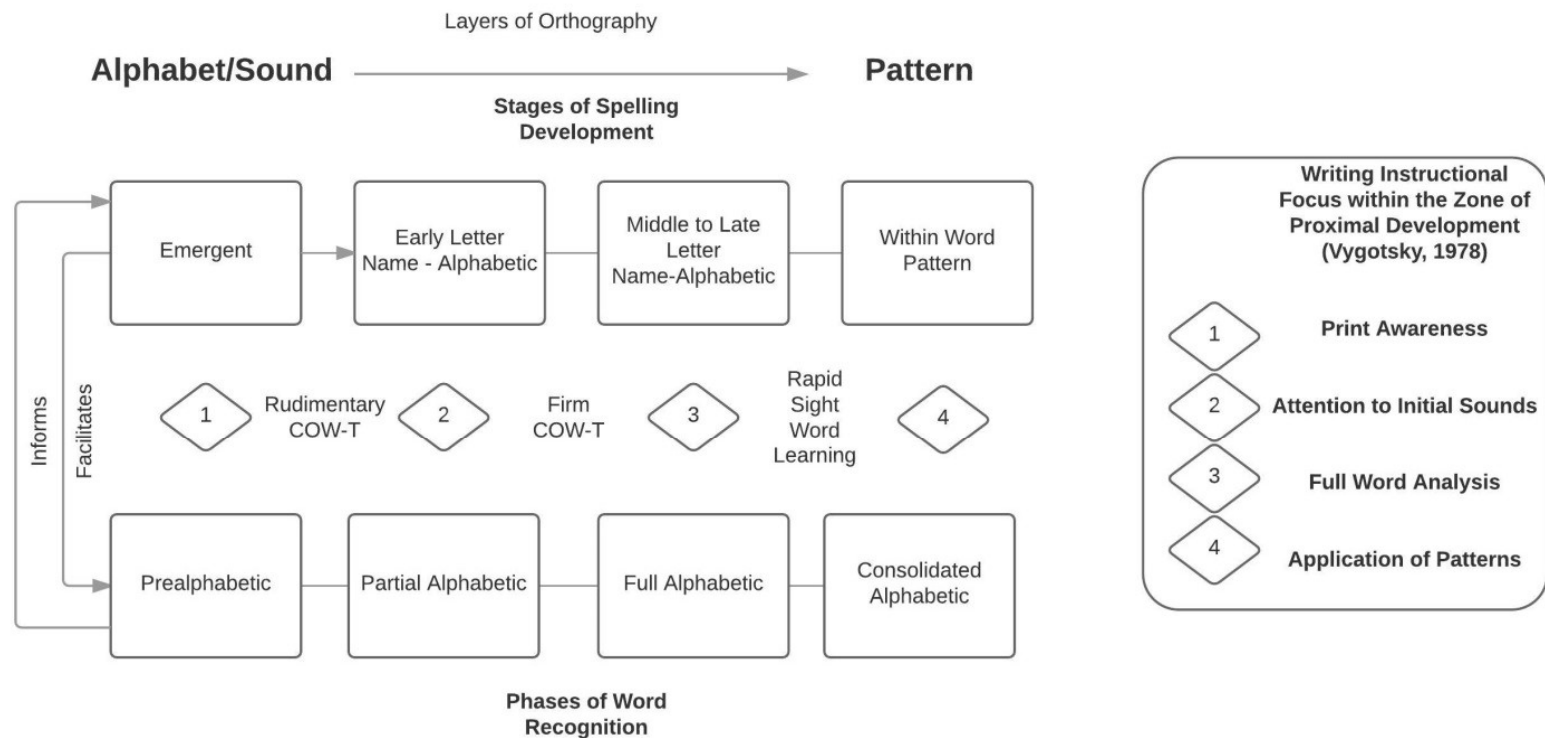
Layers of Orthography

Alphabet/Sound ⟶ Pattern

Stages of Spelling Development

| Emergent | Early Letter Name - Alphabetic | Middle to Late Letter Name-Alphabetic | Within Word Pattern |

◇1 Rudimentary COW-T ◇2 Firm COW-T ◇3 Rapid Sight Word Learning ◇4

| Prealphabetic | Partial Alphabetic | Full Alphabetic | Consolidated Alphabetic |

Informs / Facilitates

Phases of Word Recognition

Writing Instructional Focus within the Zone of Proximal Development (Vygotsky, 1978)

◇1 Print Awareness

◇2 Attention to Initial Sounds

◇3 Full Word Analysis

◇4 Application of Patterns

Spelling stages are from Bear, D. R., Invernizzi, M., Templeton, S., & Johnson, F. (2016). *Words their way. Words Study for phonics, vocabulary, and spelling instruction*. Upper Saddle River, NJ: Pearson.

Phases of Word Recognition are from Ehri, L. C. (2005). Learning to read words: Theory, findings, and issues. *Scientific Studies of reading*, 9(2), 167-188.

Figure 1. Conceptual framework. This figure illustrates the conceptual framework for the study.

Children progress over time through these layers. In the alphabet/sound layer, children have limited to no alphabet knowledge. When they do learn some of the letters, they rely literally on alphabet knowledge to spell words (Bear, Invernizzi, Templeton, & Johnson, 2016). It works well for letters like *b* that contain their letter name (*bee*); however, it works less well for letters like *w* that do not contain their letter sounds (*double you).* At the pattern layer, the writer moves beyond spelling words just as they sound because they have to be able to spell the 42 to 44 sounds in English with only 26 letters (Bear et al., 2016). For this reason, patterns or groups of letters are used to represent sounds (e.g., *ai* represents the long a). Finally, writers learn that a group of letters can directly represent meaning (e.g., *uni-* means one). Analysis of invented spellings demonstrates that children's knowledge of the structure of words progresses in layers. The development moves from a reliance on alphabet, then pattern, and finally meaning (Bear et al., 2016; Henderson & Templeton, 1986).

Researchers have studied children's invented spellings and discovered that they are not haphazard, but develop through a quasilinear sequence (Beers & Henderson, 1977; Clay, 1975; Hildreth, 1935; Ferreiro & Teberosky, 1982; Read, 1971). Bear, Invernizzi, Templeton, and Johnson (2016) refined an existing framework to represent five stages of development (i.e., emergent, letter name-alphabetic, within word pattern, syllables and affixes, and derivational relations). The top set of four boxes in Figure 1 shows this spelling progression.

To help practitioners understand the way spelling unfolds over time, Bear and colleagues (2016) modified a framework of spelling development originally conceptualized by Beers and Henderson (1977). Children begin development in the

emergent stage. In this stage, children are learning about print and their writing consists of scribbles, random letters, or symbols that look like letters. At the emergent stage, scribbles develop from a circular set of marks to lines that move from left to right and show children's understanding of directionality. In an effort to imitate the print that they see in their environments, children may make marks that look like letters but are not. They may put lines or dots after words or even start each word on a new line to represent that words need to be separated (Clay, 1975). The next of these stages is letter name-alphabetic, a name used to describe a stage in which children choose the letters based on the sound of the letter name itself rather than the sound the letter makes. I recall an example of my daughter depending on letter names to spell words. Around age 5, my daughter wrote IPYCRSN for I play with Carson. The *I* and *P* are a clear representation of the letter names being so closely associated with the initial sound of these words; however, the *Y* also illustrates the reliance on letter name knowledge. When trying to write the word with, she was able to isolate the /w/ but connected it with the /w/ heard at the beginning of the letter name *Y* (*wie)* and therefore, she wrote a *Y*. Her representation of so many letters within the name of Carson is likely because she had seen that name many times before and was able to remember some of the letters. As she progressed with her awareness of sounds, she began to represent initial and final consonants in words, for example writing HP for hop. As her understanding of orthographic knowledge grew, she began to represent the vowels within words, writing LUV for love. Although uncommon, some kindergarten children will begin to represent long vowels within words by the end of the kindergarten year. Beyond kindergarten, orthographic knowledge encompasses an

understanding of patterns that occur across words, as well as morphemes that symbolize word meanings, root words and affixes (Ehri, 2001).

Understanding Reading Development

Reading and attempting to read new words informs children's orthographic knowledge (Bear et al., 2016). Ehri (2005) describes reading development through the phases of word recognition: prealphabetic, partial alphabetic, full alphabetic, and consolidated alphabetic. These phases are illustrated in Figure 1 by the four boxes at the bottom of the figure. At the prealphabetic phase, children have a very limited ability to identify words. They may be able to recognize their name or the name of friends, but they may only recognize the name based on the presence of the first letter of that name (e.g., J for Juliet). They may also be able to identify signs in their environment, such as McDonald's. The "reading" of these signs will be dependent on visual cues such as the golden arches on the McDonald's sign. In the partial alphabetic phase, they can accurately point to words in a memorized text and make self-corrections if they get off track. This firm COW-T represents the transition to the full-alphabetic phase. At the full alphabetic phase, children rely on the full connection between letters and sounds to read.

Writing Instructional Focus Within the Zone of Proximal Development

In Figure 1, the diamonds represent the appropriate instructional focus to move children along the continuum. At the emergent stage, instruction is heavily focused on **print awareness**—they are learning how print works (e.g., directionality) and beginning to learn alphabet letters and the sounds they make. The watershed event that represents the move from this stage of spelling to the early letter-name alphabetic stage is a rudimentary COW-T, which is a culmination of the skills learned through reading and

writing practice (Morris, 1993). As partial alphabetic readers (Ehri, 2005), children have an incomplete alphabetic knowledge. The focus of instruction at this stage is on improving their **accuracy of representing beginning sounds**. As they gain a stronger phonological awareness and alphabet knowledge, they will combine these two skills to demonstrate firm COW-T. At this point, they can accurately track words and begin to build a store of words that they can recall by memory. Then, the focus of instruction is on **full-word analysis**—mastering full phonemic awareness. They begin in the middle letter-name alphabetic stage by working to represent initial and final consonants correctly and then move to full phoneme segmentation and representation of short vowels in simple words like *cat* or *pig*. When they have full phonemic awareness and can spell beginning, ending, and medial vowel sounds with fairly good accuracy, rapid sight word learning ensues, and children move to the consolidated alphabetic phase and focus on **applying patterns in words**.

Using Understanding of Development to Provide Scaffolds

Knowing the way children's spelling and reading typically unfolds allows the teacher to know what scaffold to provide to the child, thus helping a child further develop literacy skills. Early work surrounding scaffolds suggests that an ideal context for learning is one in which there are many opportunities for students to be challenged (Wong et al., 1994; Wood, Bruner, & Ross, 1976). When given opportunities to freely express their ideas in writing, children naturally encounter many words that they do not know how to spell and the teacher can capitalize on these challenges by providing scaffolds that help move children forward in their orthographic knowledge.

Research has shown that scaffolding is used minimally during writing instruction in early childhood classrooms (Bingham, Quinn, & Gerde, 2017; Clements, 2010; Gerde, Bingham, & Pendergast, 2015; Henderson et al., 2002). When Gerde, Bingham, and Pendergast (2015) studied 68 teachers' classrooms using an assessment developed specifically to measure the environmental supports and teacher-child interaction that are hypothesized to be directly related to children's writing performance, they found that although 80% of teachers used at least one scaffolding strategy to support writing, they were typically characterized as low-level quality. Teachers varied in the number they provided, but on average, they were observed using about three scaffolding strategies during an observation with a range of 0-9.

Despite the lack of research on early writing scaffolds, researchers have seen evidence of the use of scaffolding to help children advance in their learning, through enhanced discussions and increased literacy outcomes and progress (Malcoh, 2002; Rodgers, 2004; Wong et al., 1994). Aside from these general findings, Piasta, Justice, McGinty, and Kadaverk (2012) conducted a longitudinal randomized control trial to specifically assess the impact of increasing preschoolers' attention to print using scaffolds during book reading. Results of this study demonstrated that children who received these scaffolds during book reading in preschool had higher word reading, spelling, and comprehension outcomes than children in regular reading comparison conditions at one and two years post intervention. These findings show promise for the use of scaffolds with young children and the potential of scaffolds to support literacy outcomes.

Rationale and Purpose

Reading and writing are important skills for success in our society. Although reading gets most of the attention from those who are concerned about the state of our country's education, the two are highly connected because both tasks require orthographic knowledge (Bissex, 1980; Hertz & Heydenberk, 1997). Research has demonstrated that orthographic knowledge is a major contributor to reading and spelling abilities (Castles & Coltheart, 2004; Cunningham, Perry, & Stanovich, 2001; Ouellette & Senechal, 2008; Walker & Haverwas, 2006), thus making writing a potential avenue to strengthening children's overall literacy skills because both processes require the same set of skills. Further, there is promise with strategies such as scaffolding to bolster literacy-related skills (Malcoh, 2002; Rodgers, 2004). Yet, little is known about the ways verbal scaffolds are used to support orthographic knowledge development. If teachers are not using writing time to bolster orthographic knowledge, a natural next step is an opportunity for district leaders and teacher trainers to provide guidance around how teachers can maximize writing instruction to boost children's literacy growth.

Writing involves composition, handwriting, and orthographic knowledge. All aspects of writing are necessary but none, alone, is sufficient. If teachers concentrate solely on composition skills to the exclusion of handwriting and orthographic knowledge, children will be unable to transcribe their ideas onto paper. Likewise, if teachers concentrate solely on developing orthographic knowledge and handwriting, children will be unable to communicate their ideas because they will not have appropriate knowledge of planning and organizing what it is they wish to communicate and what words they will

choose to do so. To truly qualify as writing, the marks that children make must serve a communicative intention. During this study, I focus on the teacher's efforts to help children utilize their orthographic knowledge to share their message. I chose not to focus on isolated handwriting practice because it is not directly tied to the problem I addressed: how teachers do or do not use writing time to grow children's orthographic knowledge.

The information we have about writing instruction in primary classrooms comes mostly from surveys rather than direct observation. The lack of direct observation is problematic because, on surveys, teachers tend to report on what they hope to accomplish rather than what is actually happening; therefore, researchers may not capture what is truly happening in the classroom (Dickinson & Tabors, 2001; Vander Hart, Fitzpatrick & Cortessa, 2010). Further, most of the studies that have addressed the use of scaffolding have focused on younger children (Gerde et al., 2015; Henderson et al., 2002) or only looked at one teacher's classroom (Clements, 2010). Moreover, there is limited research about the use of scaffolds and supports of orthographic development during writing, and there is scant research on the ways teachers adjust these supports based on the children's needs. This study extends existing research by exploring what writing instruction looks like in four kindergarten classrooms and the ways that teachers support children's development of orthographic knowledge. Knowing how teachers verbally scaffold writing attempts allows school leaders and those writing curricula or delivering professional development to create materials that can be used to support teachers in their efforts to develop orthographic knowledge during writing instructional time in kindergarten.

Key Terms

Within the context of this study, the following definitions were used:

Alphabet Knowledge includes knowing the names and the most commonly occurring sounds associated with the letters of the English alphabet.

Alphabetic Principle is the understanding that letters represent sounds of spoken language in a systematic fashion.

Composition refers to the ideas or meaning that the child represents through their written marks—their communicative intent.

Concept of word in text (COW-T) is the ability to track print and identify specific words in context and isolation and is a strong predictor of reading achievement in first grade. There are levels within this attainment of full COW. At the most sophisticated level, children can point without getting off track on two syllable words and are also able to identify specific words in context and isolation.

Handwriting refers to proper letter formation, including the fine-motor skills required to write letters on a page.

High-support scaffolding strategy is a scaffolding strategy that requires a high level of support for the children and low level of academic demand on the child.

Invented spelling is spelling produced by the child when he/she uses all their orthographic knowledge to attempt the traditional spelling of the word without really knowing the correct spelling of the word.

Low-support scaffolding strategy is a scaffolding strategy that requires minimal support from the teacher and a high level of academic demand on the child.

Middle-support scaffolding strategy is a scaffolding strategy that requires nearly the same demand from the child and the teacher.

Orthographic knowledge is a component of the construct of writing that allows the child to spell out his or her idea. Although I recognize that orthographic knowledge is also needed for reading, I often use the term spelling when talking about orthographic knowledge. Using these terms interchangeably is due to the belief that spelling is a direct window into a child's orthographic knowledge.

Phonological Awareness is the ability to detect, manipulate, or analyze the sound structure of spoken language.

Scaffolding is a technique that is employed by the teacher to give children appropriate support in the Zone of Proximal Development so that they can complete a task that they could not complete independently.

Verbal Scaffolds are scaffolds that are speech only and joint speech and gestures. Speech-only scaffolding includes a scaffold that consists only of speech. Joint speech and gesture scaffolding is a scaffold that includes speech and a gesture (e.g., pointing, writing, putting up a finger to count a word).

Writing is a multidimensional construct that is composed of composition, handwriting, and orthographic knowledge.

Zone of Proximal Development (ZPD) is a term used to describe a continuum of interactions in which the adult provides varying levels of assistance regarding tasks for which the child is not yet independent.

CHAPTER 2

LITERATURE REVIEW

In 2003, the National Commission on Writing called for an improvement in what they termed as the neglected "R" in schools—writing instruction (2003). They hoped for all high school graduates to be able to meet the writing demands of their workplace and be better prepared for college writing requirements. Further, they hoped for all students to be able to tackle the written language demands of all content areas. They also called for an improvement in writing instruction so Americans could have improved observation, thinking, and judgment skills to better participate in our democracy. This report is important because it helped draw attention to the need for improved writing instruction for children. As a follow-up to the report by the National Commission on Writing, in 2007, Graham and Perin produced *Writing Next,* which is a report that identified specific instructional practices that would improve writing instruction in Grades 4 to 12. Graham and Perin (2007) identified 11 effective elements to improving the writing achievement of adolescent learners; however, four years after the National Commission on Writing's report, the percentage of eighth graders demonstrating proficiency on national writing measures remained unchanged, at about 27% (NAEP, 2011).

Vellutino, Scanlon, and Tanzman (1999) found that most literacy deficits are related to limited pre-literacy experiences, inadequate instruction, or a combination of both; however, intervention in kindergarten can help offset these deficits. Most recently,

the call for writing instruction has moved from upper elementary, middle, and high schools to all grade levels. Most states have adopted the Common Core State Standards (CCSS) which prominently feature standards related to writing at all grade levels, including kindergarten. At the kindergarten level, standards include drawing, dictating, and writing a range of genres including opinion pieces, informative texts, research project, and narratives; further, kindergarteners are expected to use digital tools and peer and adult support to revise their work (CCSS, 2017). Despite the support of the inclusion of instructional writing time each day in elementary school classrooms (Graham, McKeown, Kiuhara, & Harris, 2012; Jones, 2015; Roth & Guinee, 2011), writing instruction is still limited in kindergarten classrooms (Puranik, Al Otaiba, Sidler, & Gruelich, 2014).

Writing is a multidimensional construct that is composed of composition, handwriting, and orthographic knowledge (Berninger, 2000; Berninger & Winn, 2006; Kaderavek, Cabell, & Justice, 2009). *Composition* refers to the ideas or meaning that the child represents through their written marks—their communicative intent. *Handwriting* refers to proper letter formation, including the fine motor skills required to write letters on a page. *Orthographic knowledge* is a component of writing that allows the child to spell out his or her idea. Orthographic knowledge is needed to spell, and spelling is needed for effective written expression. Since spelling showcases a child's developing orthographic knowledge, I use the terms spelling and orthographic knowledge interchangeably for the purposes of this study. (I fully understand, however, that the term orthographic knowledge applies to more than spelling, as it also encompasses other skills that are needed to read.)

Orthographic knowledge develops slowly over time as children learn more about the conventional spelling system of English. Researchers have demonstrated that orthographic knowledge is a major contributor to reading and writing abilities (Castles & Colthear, 2004; Ouellette & Senechal, 2008; Walker & Haverwas, 2006). When teachers use certain methods such as interactive writing and writers' workshop, children's acquisition of reading skills such as phonological awareness and alphabet knowledge are improved (Jones, Reutzel, & Fargo, 2014; Jones & Reutzel, 2015). Although research shows that code- or spelling-focused writing instruction has the potential to improve reading outcomes (Jones, Reutzel, &, Fargo, 2014; Jones & Reutzel, 2015), more research is needed on the specific ways in which writing instruction and teachers' interactions with children may boost children's orthographic knowledge in the early years. This study provides more information on if and how kindergarten teachers support the development of orthographic knowledge during the writing instructional time.

Conceptual Framework: Building Orthographic Knowledge in Kindergarten

The conceptual framework that guides this study is based on developmental spelling theory (Bear et al., 2016) and Ehri's (2005) developmental word reading theory. Figure 2 depicts the orthographic development that is typical in a kindergarten classroom. Along the top of the figure, the words alphabet/sound and pattern represent the layers of orthographic knowledge. The layers of orthography are depicted from easiest to hardest. I intentionally only included the layers that would be attended to by a typically developing kindergartener; therefore, the alphabet/sound and pattern layers are the only words used to represent the layers of orthography. Ehri's (2005) phases of word recognition are at the bottom of the figure and are included to illustrate the connection

between reading and writing and they provide insight into a child's overall orthographic development. Between the phases of word recognition and the stages of spelling development, there is the progression of concept of word in text, an indicator of the integration of phonological awareness and alphabet knowledge. *Concept of word in text (COW-T)* is the ability to track memorized print and identify specific words in context and isolation and is a strong predictor of reading achievement in first grade (Blackwell-Bullock, Invernizzi, Drake, & Howell, 2009). According to Blackwell-Bullock, Invernizzi, Drake, & Howell (2009), "achieving a solid concept of word in text is actually the culmination of a child's automatic knowledge of letter sounds, their ability to isolate beginning consonant sounds, and their ability to remember words in isolation that were viewed previously in text" (p. 30). COW-T provides a critical insight into children's orthographic development, so it is included in this figure. Because this study is focused on the teacher, under each stage and phase of development, I have included a description of the goals of instruction in diamonds. These are descriptions of the instruction that research suggests are needed to move children through the stages of spelling development. This framework has informed every aspect of my study including the research that was reviewed and reported, the data collection process, analysis, reported findings, and implications.
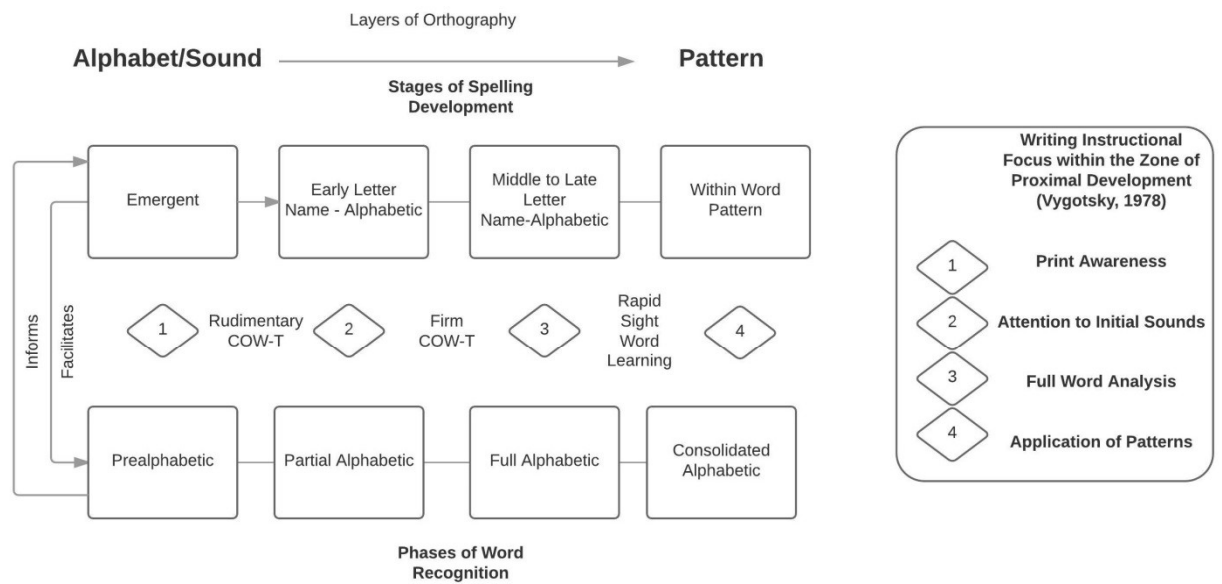
Layers of Orthography

Alphabet/Sound ——————→ Pattern

Stages of Spelling Development

| Emergent | Early Letter Name - Alphabetic | Middle to Late Letter Name-Alphabetic | Within Word Pattern |

Informs Facilitates

1 Rudimentary COW-T 2 Firm COW-T 3 Rapid Sight Word Learning 4

| Prealphabetic | Partial Alphabetic | Full Alphabetic | Consolidated Alphabetic |

Phases of Word Recognition

Writing Instructional Focus within the Zone of Proximal Development (Vygotsky, 1978)

1 Print Awareness
2 Attention to Initial Sounds
3 Full Word Analysis
4 Application of Patterns

Spelling stages are from Bear, D. R., Invernizzi, M., Templeton, S., & Johnson, F. (2016). *Words their way. Words Study for phonics, vocabulary, and spelling instruction.* Upper Saddle River, NJ: Pearson.

Phases of Word Recognition are from Ehri, L. C. (2005). Learning to read words: Theory, findings, and issues. *Scientific Studies of reading, 9*(2), 167-188.

Figure 2. Conceptual framework. This figure illustrates the conceptual framework for the study.

Given the importance of this conceptual framework, I use it to organize my literature review. In the sections that follow, first I detail how reading and writing are connected and why writing practice is an integral part of literacy instruction. Next, I discuss each level of orthographic knowledge in detail and how children's written representations change along the continuum of literacy development to provide an overview of the typical diversity of literacy that a kindergarten teacher may find in her classroom. Given that this study focuses on classroom teachers, I describe where the teacher needs to focus writing instruction during each stage of spelling/word reading development. Then, I discuss the research on the teacher's role in orthographic development and discuss the ways in which research suggests that she can influence

development. Lastly, by discussing the current research on writing in the kindergarten classroom, I discuss examples of these recommendations.

Writing to Read

Writing and reading are connected and writing instruction is one possible means to bolstering reading growth. The idea that writing instruction and practice might assist a child in learning to read emerged in the 1930's. Around this time in the United States, there was an increase in information about new instructional practices that focused on shifting from using published materials for reading instruction to using materials that the teacher and child wrote cooperatively (Smith, 1986). The *Language Experience Approach* (LEA; Stauffer, 1970) came to be known as the idea of having teachers lead children in recalling a common experience, the teacher recording the children's thoughts by writing them on chart paper, and finally using the material for rereading. Research later revealed that approaches like LEA provide a powerful entry into literacy (Labbo, Eakle, & Montero, 2002; Stauffer, 1970). The 1930's marked an important recognition that children's writing may be a valuable resource for teaching reading and has an important place in the early childhood classroom (Smith, 1986).

The idea that writing is a path to reading was established and supported by extensive evidence that children create invented spellings in relatively the same way and that writing develops in synchrony with reading (Beers & Henderson, 1977; Henderson & Beers, 1980; Read, 1975). In 1971, Carol Chomsky argued in her seminal piece *Read First, Write Later*:

> The composing of words according to their sounds….is the first step toward reading. Once a child has composed a word, he looks at it and tries to recognize it. The recognition is slow, for reading the words seems much harder than writing

it. Often the child works it out sound by sound, the reverse of the process by which he wrote it, and then recognition dawns all at once. (p. 296)

Chomsky (1971) was joined by many other researchers who supported the same idea that spelling was not a skill separate from literacy development but a critical part of the process and could be a route to improved literacy (Henderson & Templeton, 1986). Chomsky (1978) argues "the printed word 'belongs' to the spontaneous speller far more directly than to children who have experienced it ready-made, for once you have invented your own spelling system, dealing with the standard system comes easy" (p. 10). In other words, through the process of making hypotheses about how the spelling system works and testing those hypotheses, learning to spell comes much easier than when someone imposes the system upon you.

Chomsky's idea was supported in 1980, when Glenda Bissex published the first in-depth case study of a child's development of written language and intertwined reading development; this study showed that children can learn to write even before they can read suggesting that opportunities for writing are important for even the youngest children. Bissex's (1980) case study of her son through his early childhood years provided a detailed description of how his invented spellings and repeated developing and testing of hypotheses about spelling allowed him to create a system to represent words. *Invented spelling* is when the child uses his or her existing orthographic knowledge to attempt the traditional spelling of the word. Her work shows that this development is early and begins even before formal schooling. Bissex's case study is an example of a child who, given writing materials, tested out his own hypotheses and learned about the reading and writing system through parallel construction; therefore, an implication from her study is

that invented spelling has the potential to have positive effects on children's development of orthographic knowledge and should be encouraged.

Researchers continued to refine the idea that reading and writing draw on the same set of skills and entail very similar processes and that writing instruction can substantially impact the reading progress of beginning readers (Hertz & Heydenberk, 1997; Jones, 2015; Jones, Reutzel, & Fargo, 2010). Tierney and Pearson (1983) suggested that reading and writing are one and the same because both processes are intended to construct meaning. They later defined the three basic connections between reading and writing as rhetorical relations, procedural connections, and shared knowledge (Fitzgerald & Shanahan, 2000). *Rhetorical relations* refers to the idea that reading and writing are both communication systems and that one gains insight into the process of communication through reading and writing. *Procedural connection* is defined as how reading and writing share the same processes to complete tasks such as editing a term paper. *Shared knowledge* considers how reading and writing require the same set of knowledge (phonetic, orthographic, semantic, syntactic, and pragmatic). My research focuses on the shared knowledge and overlap of code-related skills in both reading and writing to include phonological awareness, alphabet knowledge, and print knowledge, as well as the integration of those skills as demonstrated in grasping the alphabetic principle and attaining a COW-T.

Building the Shared Knowledge of Reading and Writing

Research suggests that there is an important interaction between reading and writing. Research studies examining children's reading have identified phonological awareness and alphabet knowledge as critical skills for success in reading (NELP, 2008).

Furthermore, reading research suggests that these skills become increasingly integrated over time. This integration of skills is observed when children grasp the alphabetic principle and achieve COW-T (Morris, 2002). Both the alphabetic principle and a COW-T have been shown to be critical for early reading success. Next, I unpack the shared knowledge between reading and writing. I define phonological awareness, alphabet knowledge, alphabetic principle, and COW-T and discuss their important to literacy, then I address the related research of writing and reading development that demonstrates how writing instruction can positively impact the specific areas of phonological awareness, alphabet knowledge, the attainment of the alphabetic principle, and COW-T.

Phonological awareness. Phonological awareness is the progressive awareness of the speech sounds within words starting from large chunks (rhyme, syllables) and moving to smaller parts of the words (phonemes). Phonological awareness also encompasses the ability to detect, manipulate, or analyze a word (including rhyme, beginning sound isolation, and phonemic awareness) with phonemic awareness being the most sophisticated level of phonological awareness (NELP, 2008). At the simplest level, children rhyme. They identify that *dog* and *hog* rhyme, but also produce rhyming words when asked. For example, if I say *pot*, the child may reply *cot*. Then, they move to being able to segment, or break apart, a string of words in a sentence into the individual words. The next level of sound awareness includes breaking apart a word into syllables, then into the initial sound (onset) and the rest of the word (rime). Next, children can identify and manipulate the beginning sound of a word. For example, the child can say *bat* starts with /b/. At the most sophisticated level, children can isolate and manipulate the individual sounds, or phonemes, in a word. This level is considered phonemic awareness. It is

important to note that this development does not come all at once or develop in a lockstep fashion, rather the different levels of phonological sensitivity develop "quasi-parallel" rather than in a sequential, discrete way (Anthony & Lonigan, 2004). In fact, the type of phonological sensitivity appears to be less important than a general sensitivity to the sound structure of the English language (Anthony & Lonigan, 2004). To spell, children need to be able to attend to the sounds within spoken words.

There is a reciprocal relationship between phonological awareness and reading and writing success. In the meta-analysis conducted by the National Early Literacy Panel (NELP, 2008), evidence was clear that phonological awareness is a critical skill for reading development. During this meta-analysis, NELP examined 52 studies that tested phonological awareness interventions among children in preschool and kindergarten. They found large, statistically significant impacts of phonological awareness instruction on the acquisition of phonological awareness, as well as moderate, statistically significant impacts of phonological awareness instruction on reading and spelling.

Ehri and colleagues (2001) conducted an analysis of 52 studies from peer-reviewed journals all of which were included in the National Reading Panel's analysis and applied to all meta-analyses. Results of Ehri et al.'s study show that phonological awareness instruction has a moderate, statistically significant impact on reading and spelling, making it an important skill to master. They found that these effects were true for a variety of children: typically developing readers, at-risk readers, and preschoolers through first grade students. Further, these results were true for children of all socioeconomic groups. Research has confirmed that one common factor of most children with reading disabilities is that they have trouble with phonological awareness tasks

(Vellutino, Fletcher, Snowling, Scanlon, 2004), thus emphasizing the importance of instruction to support phonological awareness. Phonological awareness is a critical awareness for reading and spelling, and writing practice can help bolster phonological awareness skills (Ehri & Wilce 1987; Uhry & Shepherd 1993).

Alphabet knowledge. Alphabet Knowledge is the knowledge of all 26 letters and their sounds (e.g., b says /b/ as in bear) (NELP, 2009). Alphabet knowledge is considered one of the most reliable predictors of reading achievement (NELP, 2008; NIH, 2000; Whitehurst & Lonigan, 1998). Knowledge of the names of the alphabet letters is important because the letter names provide clues to the sounds the letters make (Share, 2004), making it easier for children to learn letter sounds (Huang, Tortorelli, & Invernizzi, 2014). For example, the letter name *d* contains the letter sound /d/ at the beginning. In the case of the letter name for *m* (em), the /m/ sound is at the end of the letter name. Further, the letter sound knowledge is critical for decoding, because to read the word, the child must recall the sounds associated with the letters and blend them together. Additionally, letter sounds knowledge is a critical skill for developing the alphabet principle, which is the understanding that letters represent sounds of spoken language.

Writing instruction is an ideal place to boost alphabet knowledge. In a meta-analysis of over 60 alphabet studies, Piasta and Wagner (2010) expanded the work done by NELP (2008) by extending the search through November 2006 (three years longer than the original study). Piasta and Wagner (2010) found that when adults taught children the alphabet in isolation there was a minimal transfer of alphabet learning to other literacy skills and the effects that did transfer were "washed out" after 2 to 12

months. This finding suggests that when teachers integrate alphabet knowledge

integrated into other learning opportunities, such as phonological awareness, children

may learn more. Similarly, Byrne and Fieldings-Barnsley (1989) found that explicit

linking of phonological awareness and alphabet skills were imperative for children to

fully integrate these skills; it is not sufficient to teach the skills in isolation. When

children invent spellings or use their existing orthographic knowledge to attempt to spell

a word, they use both phonological awareness and alphabet skills; therefore, it is not

surprising that when children are supported to invent phonetic spellings, there are

positive results on other literacy skills (Ehri & Wilce 1987; Uhry & Shepherd 1993).

These findings are of particular importance to the current study because it supports the

need for alphabet instruction to be embedded throughout the day in other areas of

instruction, such as writing (Ehri, 2001; NICHD, 2000). Further, researchers have found

that code-based writing instruction methods, such as interactive writing and writing

workshop, resulted in greater gains in alphabet knowledge than the control groups (Jones,

Reutzel, & Fargo, 2014; Jones & Reutzel, 2015). These findings provide support for the

connection between reading and writing and the positive impact writing can have on

reading abilities.

Alphabet knowledge and phonological awareness are two skills needed for

reading and writing; however, those skills must be integrated for reading and writing to

occur. Children's attainment of the alphabetic principle is one way to observe this

integration.

Alphabetic principle. Knowledge of the alphabetic principle - the understanding

that letters and combinations of letters can represent individual sounds in spoken

language - is a critical event in a child's literacy development (Adams, 1990). For children to map a series of letters from left to right with the corresponding sounds, children need to attain the alphabetic principle. While the phonological awareness allows children to attend, at a metalinguistic level, to the sounds within a word and alphabet knowledge allows the child to know the sound that relates to an individual letter, the alphabetic principle is necessary to combine this knowledge for inventing spelling and reading.

Attainment of the alphabetic principle does not come all at once. Ehri (2005) suggests at different levels of development there is a change in the child's understanding of the connection between the words and the knowledge they hold about how words work. According to Ehri (2005), in the beginning, a child looks at a word and may be able to remember it, but only based on the visual features of the word. For example, a child may remember the word *look* because they visualize the o's in the middle of the word as being two eyes looking at them. As the child begins to learn more about the alphabet and attains some levels of phonological awareness, the child begins to use the knowledge of the letters in the word and the sounds that those letters make. Initially, the connections are only partial and they may only rely on the initial or most salient, or pronounced, sound in the word. For example, the child may recall the word *cup* by cuing in on the *c* and *p* at the beginning and end of the word. This same application of knowledge is also seen in writing as they spell words with only the salient or beginning sound. As a child's knowledge of phonological awareness and alphabet knowledge is more fully merged, they "crack the code" of reading and writing. This watershed event is known as fully grasping the alphabetic principle. In this phase, the child can examine

each grapheme in the word and associate it with the proper phoneme and ultimately, the pronunciation of the word. For example, upon seeing the word *bag*, they can read /b/. Invented spellings provide an insight into a child's sense of the alphabetic principle.

   Concept of word in text. COW-T is a culmination of skills needed to read and write. To attain COW-T, a child must have some level of phonological awareness and alphabet knowledge; as a child develops COW-T, phonological awareness is strengthened to the point of phonemic awareness. Several studies have shown that there is a relationship between other reading skills (phonological awareness, alphabet knowledge, invented spelling) and COW-T (Morris, 1999; Ehri & Sweet; Uhry, 1999), but there is some difficulty making comparisons in the findings because of the task differences across the studies. The one constant across all three studies is that phoneme awareness precedes COW-T.   In 2001, Morris, Bloodgood, Lomax, and Perney (2003) gathered five points of longitudinal data on 102 children across their kindergarten and first grade years. The purpose of the study was to test a model that showed that phonological awareness develops in phases and that COW-T interacts with phonological awareness during the process of early reading. The data fit the model and showed that COW-T followed beginning consonant awareness and followed full phonemic awareness. This finding is critical because it suggests that COW-T is a watershed event that may play an important role in bridging phonological awareness from beginning consonant awareness to full phoneme segmentation.

   The work of teachers in kindergarten is focused on the sound layer of orthography and attaining COW-T is a pivotal phenomenon in a child's understanding of the sound layer of orthography. COW-T is highly related to phonological awareness and children's

spelling attempts reflect their understanding (Morris, 1981). Children demonstrate their understanding of how words are discrete units when they represent parts of the word (e.g., beginning sound, ending sound) with a letter. An important clue that a child has reached an understanding of the word as an individual unit is when they attend to the beginning and ending sounds of a word.

Further, a child's use of space between words can give an indication of their understanding of words as individual units within print. However, Clay (1975) and Temple, Nathan, and Burris (1982) caution that the lack of white space between written words does not always mean that the child does not have an understanding of where one word ends and another begins. It is often the case that the child's representation of the space between words is often a mixture of being able to segment the sentence, of knowing the purpose of the space between words, and having the mechanic skills and coordination to represent the appropriate space between words.

In 1999, Uhry investigated the relationship between invented spellings and COW-T among 109 kindergarteners using quantitative methods. Uhri measured children's finger-point reading of the text from a familiar book then measured other reading skills. Results of this study confirm research that shows alphabet knowledge and phonological awareness are related to the accuracy of finger-point reading (Morris, 1993; Ehri & Sweet, 1999); however, it also suggests that invented spelling is highly correlated to COW-T (Uhry, 1999). These results strengthen the argument for opportunities for teachers to support children's invented spelling in an effort to improve the skills of phonological awareness, alphabet knowledge, the grasping of the alphabetic principle, and the attainment of COW-T.

In this section, I presented the components of shared knowledge between reading and writing and the ways those connections are revealed in children's reading and writing. In the following section, I discuss writing practices that have shown promise in bolstering the shared knowledge between reading and writing.

Writing Practice Supports Reading Growth

Growing evidence has shown that writing with invented spellings has positive effects on children's reading skills (Chomsky, 1970; Bissex, 1985). Moreover, scaffolding children's attempts to write in invented spellings has been shown to improve phonological awareness, spelling abilities, and word-reading abilities of kindergarteners (Ehri & Wilce, 1987; Uhry & Shepherd, 1993). In 1987, Ehri and Wilce conducted a study with 24 kindergarteners over about a one month period. In this experimental study, one group was taught to spell a series of words and the control group was taught to match 10 letter sounds with the corresponding letter tiles. The process of teaching a child to spell words included the use of tiles and a process of the child using tiles to create a series of words. The experimenters did not directly teach the words, but encouraged the child to segment each sound of the words and match it with the corresponding letter tile. When the child made errors, the experimenter provided scaffolding (e.g., look for the sounds in the letter names or pay attention to what your mouth is doing) to support the child. Each child worked through errors until he or she could correctly spell the words. The purpose of the experiment was to determine if teaching a child to spell improved the child's ability to read words. The results of their study showed that in regards to word reading, children trained in spelling outperformed children who were not trained in spelling. This

study emphasizes the importance of allowing children to work through invented spellings and the role adults may play in supporting the development of reading and spelling.

Hertz and Heydenberk (1995) employed a mixed methods study with a classroom of 19 kindergarteners who were participating in process-writing activities over a five-month period. In this study, Hertz and Heydenberk measured children's spelling and composition performance pre- and post-intervention by using the Metropolitan Readiness Tests, which are intended to assess beginning reading, story comprehension, and quantitative concepts that are associated with readiness for reading and math. The children were part of a writer's workshop model (mini-lesson, writing time, and group sharing) of writing instruction that occurred for 45 minutes three times per week. Writer's workshop is a process-based writing approach. Children work independently on a piece of writing and progress through the stages of writing. The common components of writer's workshop are the mini-lesson, writing, conferring, and sharing (Calkins, 1994). The quantitative results of this study showed considerable gains in children's spelling and composition scores. Further analysis of the test results showed there was no statistically significant difference in scores between the experiment group and a comparison group of children taught by this same teacher a few years later using a skill-oriented language program. However, qualitative measures showed that during writing instruction, verbal comments and actions the teacher used to make clear connections between reading and writing were important for growth. For example, the teacher repeatedly read aloud children's invented spellings over their shoulders as they were writing to show them that their writing was readable and thereby encouraging them to continue with invented spelling.

Building on Hertz and Heydenberk's (1995) work and their previous findings (Jones, Reutzel, and Fargo, 2010), Jones and Reutzel (2015) experimentally examined the transfer of code-related skills taught during two of the most common writing instruction practices in kindergarten classrooms, interactive writing and writer's workshop (Graham, Harris, & Mason, 2005), to reading outcomes. Interactive writing is a group effort in which the children participate in a writing experience with their teacher. They are asked to help write some of the text while attending to letters, sounds, and words. Interactive writing and writer's workshop include teacher modeling of writing, child writing, and some element of rereading written work. They randomly assigned six teachers and 112 children within three assigned classrooms into three instructional groups: writing workshop, interactive writing, and a control group that engaged everyday practices. Children were randomly assigned one of the groups, and the children were assigned to work with a teacher that was randomly assigned their same instructional group. This process resulted in six instructional groups that met 15 minutes each day. All teachers across the schools had previously participated in the same extensive literacy training and conducted reading instruction that followed the same scope and sequence using the district-adopted core reading practice. Results of this study showed statistically significant gains for children in the writing workshop and interactive writing groups (as compared to the control) in the areas of phonological awareness, alphabet knowledge, and pseudoword reading. Again, the results of this study are important because they provide evidence that writing instruction is related to reading outcomes and improve some of those skills that are necessary for reading and writing.

Summary of Writing to Read

The skills required to read and write are the same; however, they do not follow the exact same processes (Adams, 1990). For reading, children need to decode the words; however, while writing, they encode to convey a message. They must think of the message they want to write. The next step is to think about the individual words within the sentence (sentence segmentation), once they decide on the word to write, they must think about the sounds within that word. Depending on their level of development, children break the word down to the smallest level that they are capable (beginning sound to full phonemic awareness). At that point, they isolate the sound or sounds within the word. Finally, they think of the alphabet letter that is associated with each sound (alphabet knowledge) and match the sounds and letters from left to right to transcribe the word (alphabetic principle). This process of inventing a spelling requires children to use all of these skills, which are also used in reading. The relationship is reciprocal because when children read, they gather more orthographic knowledge about spelling and when they spell they build orthographic knowledge that facilitates reading. Because these processes are related, it is no surprise that studies have shown the strong relationship between invented spelling and early reading skills, and further, that practice with writing appears to strengthen the connections among these necessary skills (Jones, Reutzel, & Fargo, 2014; Jones & Reutzel, 2015). This set of evidence suggests that writing in kindergarten may be a potentially fruitful avenue to bolster necessary reading skills. In the following sections, I discuss how these overlapping skills develop over the course of a child's orthographic development and how teachers can address individual children's needs within each stage to strengthen this development.

Research on Orthographic Development

In the late 1920's, Vygotsky was among the first psychologists to consider writing as an interest in the psychology field. In 1929, Vygotsky and his student, Luria, dictated a series of sentences to 3- to 5-year-old children then asked them to write what they had heard. Of course, the children did not spell the words correctly; however, Vygotsky and Luria noticed similarities in the marks that the children made when attempting to spell words (Tolchinsky, 2003). This attention to the similarities sparked interest in what those first marks may tell a teacher about children's knowledge of the written English language and also suggested that young children may develop ideas about reading and writing prior to formal schooling.

This line of research was extended during the 20th century. In 1936, Hildreth was the first researcher to embark on research examining children's name writing attempts. She collected data from 170 children ages 3 to 7 years. Her findings supported the notion that there are levels within writing development. Hildreth proposed seven levels of development that spanned the continuum from scribbling to letters and mock letters to finally arriving at correct spelling. Later research compared name writing attempts to other spelling attempts and found that the development of name writing was not completely in sync with other writing attempts and further that name writing improved with age more rapidly that other word writing (Levin, Aram, Both-deVries, & Bus, 2005); however, Hildreth's work was instrumental in beginning the elaboration of the developmental progress of written language.

The line of research regarding writing development was budding and the evolving understanding of the written English language would have a great impact on the future of

elementary writing instruction. With an increase in development within the field of descriptive linguistics, improvement in computer-based data processing, and a shifting view of "structured learning" (Hanna, Hanna, Hodges, & Rudorf, 1966), Hanna, Hanna, Hodges, and Rudorf (2006) further explored the idea of invented spelling being more than careless errors, but focused on how these errors could reveal the way children develop their understanding of the written English language. Their ability to use the new technology of computers to analyze letter patterns allowed them to conclude that the spelling of phonemes is more highly consistent than what researchers believed in the first half of the century. These findings were important because they were among the first steps in research that would provide more understanding about the way orthography is learned, used, and taught.

In 1975, Marie Clay reflected on her observations of 5-year-old children as they first entered kindergarten. She was originally exploring beginning reading behavior but took an interest in the writing that they produced. She recognized the wide range of differences among children in their early attempts at writing as well as emerging patterns within levels of development. She proposed key principles that guided children's written production. These principles ranged from the sign concept, an early and easy concept that begins when a child is first able to recognize that a sign carries a message. For example, when my daughter, Madelyn, was around four years old, she received a diary for a birthday present. She filled every page of the diary with the letter *M*. This was her letter and she was convinced that repeating the letter *M* carried an important message— she was less concerned about what that message might be. According to Clay, as children progress they realize that what they say can be written down and instead of

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making a series of *M*s and not reporting a message, they will share a message that they

claim is represnted by the letters.   Letter formation advances through the Copying,

Flexibility, Inventory, Recurring, and Generating Principles. The generating principle is

the "ability to construct many words out of 26 letters, and many sentences out of a

limited vocabulary" (Clay, 1975, p. 28). The generating principle is seen when the child

uses what he knows about all of the principles to invent a spelling. An example of one

child's early writing attempts shows several of these principles in his attempt to write The

Secret Life of Pets (see Figure 3). He started out writing the first two letters of his name

a, n, then evidence of the recurring principle is seen as he repeats the *n*s and *s*s. As he

got to the end of the word, he began looking around the room. Showing his use of the

copying principle, he saw a book nearby with the word *READ* in large print. He copied

the E and A and without enough room to write the *D*, he went back to the left, above the

A, and wrote his attempt of the *D*. Clay's (1975) principles extend to ideas about general

print conventions such as directionality, space between words, page and book

arrangement, and finally abbreviations. The abbreviation principle is used to describe

when children represent a word with only one consonant that may correspond to a sound

within that word.

Figure 3. Anderson's early writing. This figure illustrates Clay's (1975) principles.

While Clay's work evolved more organically out of her observations of

kindergarten reading, Ferreiro and Teberoksy's (1982) took a more structured approach.

Over two years, the researchers explored the writing of Spanish-speaking preschool children in Buenos Aires, Argentina. Ferreiro and Teberosky asked children to complete six tasks: write their own name, write the name of a friend or family member, contrast drawing and writing situations, write words that are typically taught in the early part of school, write words that the researchers guessed would not have been taught, and write a dictated sentence. The results of their study allowed them to propose five levels of development that focused on the marks children make as they progress from distinguishing drawing from writing, to scribbling, to a gradual representation of their name, then finally correctly writing their names. Included in their leveling were indicators of how name writing and name reading were aligned. This work is another example of how researchers were beginning to recognize that reading and writing is a developmental process—children are developing a set of skills for reading and writing over time. They asserted that complete understanding of the way the spelling system works is not required for beginning writing instruction; in fact, they suggested that spelling is an easier way to learn about the systems that govern reading and writing. Ferreiro and Teberosky were not alone in their assertion that it may be acceptable, if not ideal, for writing to precede reading.

In 1971, Charles Read examined the natural writing of preschool children in a Montessori setting. The results of this study showed that children's attempts were not random or often even a result of instruction, but did follow a progression of development. He looked closely at the errors that children were making and found that within the lowest level of spelling development, the errors were largely around short vowels and consonants that represented one sound (e.g., FES for fish, CATZ for cats). As children

progressed, the vowels continue to be an issue, but they were at a higher level (e.g., SOPE for soap). Further, Read's research showed that early writing is the best window into children's orthographic knowledge. Over the next 45 years, other researchers have corroborated Read's finding and shown that invented spellings provide valuable information about a child's literacy development (Bear et al., 2016; Bissex, 1980; Ganske, 2000; Henderson, Estes, Stonecash, 1971; Invernizzi & Hayes, 2004).

Henderson and colleagues pressed forward with developmental spelling research. They followed up with Read's research by analyzing the spelling errors within groups that were older, yet similar in development to Read's participants (Beers & Henderson, 1977; Henderson, 1981). Beers and Henderson (1977) studied the writing samples of 25 first grade students to consider how these samples worked with earlier findings about spelling development. They confirmed that children have a good amount of orthographic knowledge that they pick up from literacy experiences and they use this knowledge to invent spellings. They noticed that within these invented spellings, children relied on the point of articulation for the representation of the initial sound, omitted vowels, and confused long and short vowels. They referred to this strategy as the letter name strategy. They noticed there was a clear progression from this early stage as children learned more about English orthography and eventually they begin to apply features like silent letters to create long vowels. Henderson and colleagues extended this research and developed a framework to describe how children's spellings logically develop over time (Henderson, 1990; Templeton & Bear, 1992; Templeton, 2011). Henderson (1990) defined the stages of spelling development as preliterate, letter name, within word pattern, syllable juncture, and derivational constancy. These stages fall under the three governing tiers of order for

the English language: alphabet/sound, pattern, and meaning. Since that time,

Henderson's original stages have been refined and the stages that I will describe are the

most recent refinements by Bear and colleagues (2016). These stages are emergent, letter

name-alphabetic, within word pattern, syllables and affixes, and derivational relations.

Figure 4 shows the connection between the layers of orthography and the stages of

spelling development. Bear and colleagues (2016) suggest that the typical spelling stages

of kindergarteners are emergent through letter name-alphabetic. I extend my exploration

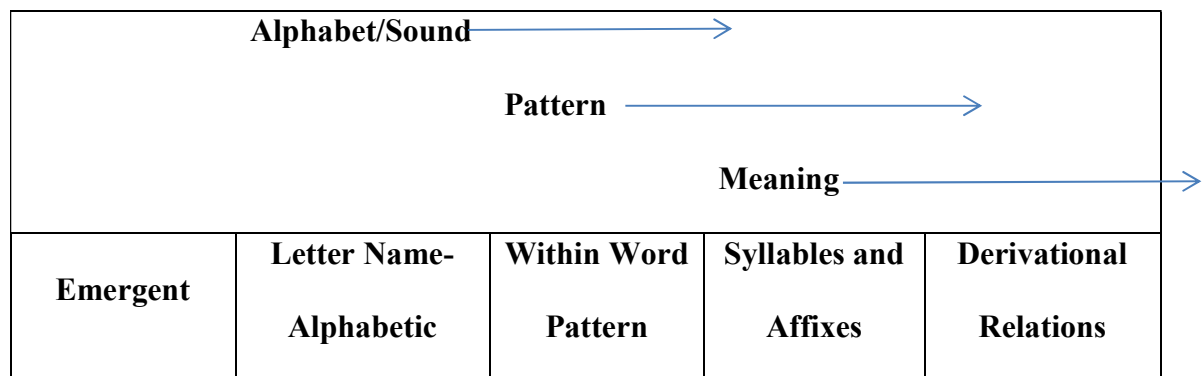to the within-word pattern level because there were a few children at this level in my

study.

	Alphabet/Sound —————————→			
		Pattern ———————→		
			Meaning —————————————————→
Emergent	Letter Name- Alphabetic	Within Word Pattern	Syllables and Affixes	Derivational Relations

Figure 4. Layers of orthography and spelling stages. This figure shows the connection

between layers of orthography and spelling stages.

All of these theories include phases of development; however, it is important to

distinguish that these phases are not a hierarchical progression that simply develops in

this order. Instead, the phases of development are "characterized by a speller's use of a

particular spelling feature more frequently during one phase of development than

another" (Sharp, Sinatra, & Reynolds, 2008, p. 207). In contrast to the popular stage

theory of the 70s and 80s, more recently, the *overlapping-wave perspective* has been

accepted. The overlapping-wave perspective suggests that spelling growth occurs as children oscillate between choices of strategies to use for spelling. Children progress in their spelling performance as they practice and choose the correct strategy more often than less effective strategies. Sharp, Sinatra, and Reynolds (2008) conducted a study with 31 struggling first grade readers to determine if the overlapping-wave perspective is useful for characterizing spelling development, specifically, if it was consistent with the hallmarks of the overlapping-wave model: variability, adaptability, and gradual growth. They used a microgentic method to study children's thinking about their spelling and found that in this study there was evidence of all three characteristics of the model. Interestingly, regarding adaptability, children's use of strategies fluctuated with the type of word they were asked to spell. Children used fewer strategies when they were asked to spell a word outside of their ZPD and more strategies when the correct spelling was within their reach. Further, they found that children used more strategies as their orthographic knowledge increased. Variability was apparent as children used a variety of strategies all along the continuum of development. There was evidence of gradual growth as children grew at different rates and at a fairly steady rate of 0.25 words every three to four weeks.   This study is important because it builds the case that spelling development is more complex than simply moving from stage to stage. For this reason, it should be noted that as stages, levels, or phases are discussed in this review, my intention is to represent a quasilinear progression in which children may move between stages of development within periods of time.

If a beginning reader does not know how to completely spell a given word, then they rely on their orthographic knowledge to help them create an invented spelling. The

orthographic knowledge can include the knowledge that letters represent speech sounds (alphabet), how phonemes and graphemes go beyond a one-to-one correspondence to represent patterns (pattern; e.g., ai represents long a), and how the meaning of words, in addition to their sounds, affect their spellings (meaning; e.g., photograph). Over the 20th century, researchers used these invented spellings to understand how writing develops over time. They represented this quasilinear development through frameworks that were developed to create a greater understanding of development among practitioners. In the sections that follow, I discuss the spelling framework of Bear and colleagues (2016) and within that discussion, I explain how writers are integrating their skills and how this integration may appear in their writing. Cabell, Tortorelli, & Gerde (2013) developed a framework to describe how writing unfolds within the earlier stages of spelling development. Table 1 shows how the concordance of the spelling stages of Bear and colleagues (2016) and the framework for writing as described by Cabell et al. (2013). Note that Cabell and colleagues (2013) only described early writing, so the concordance between these two descriptions of spelling and writing does not extend to the pattern level/within word pattern stage. I use Cabell and colleagues' (2013) framework to describe how writing unfolds. Within this section, I also discuss the ways that teachers may support orthographic development of these young writers.

Table 1

Concordance of Spelling and Writing Stages

Spelling Stages (Bear et al., 2016)	Early Writing Developmental Levels (Cabell et al., 2013)
Emergent	Drawing & scribbling
	Letters & letter like symbols
Early letter name-alphabetic	Salient & beginning sounds
Middle to late letter name-alphabetic	Beginning & ending sounds

Emergent Stage

The emergent stage is the period of literacy development from birth to beginning reading. Writing begins when a child can connect the components of composition and transcription (handwriting comes later). Writing must convey a message or idea (composition) and must refer speech in some way while at the same time "looking" like writing (transcription). We can gain an insight into children's orthographic knowledge through the ways children interact with print and scribbles and marks they make on paper. The major descriptor of writers at this stage is that there is little to no connection between their marks on the page and individual speech sounds, but they will connect the marks to a message (Bear et al., 2016).

The writing at the emergent stage comes in many different forms. The Early Writing Framework (Cabell et al., 2013) provides four developmental levels and the first two levels of this framework allow a closer look at how the emergent phase unfolds. The first level Cabell and colleagues define within Bear and colleague's (2016) emergent stage is drawing and scribbling level. At this point, children do not use letters in their writing (Henderson, 1985). By kindergarten, children in this stage will likely distinguish their writing from their drawings. When they do so, they may include circular scribbles or linear scribbles (Clay, 1975). The direction of their scribbles can provide some insight into their understandings about print, such as directionality. For example, as children learn that writing moves from left to right when reading, they may begin to scribble from left to right. Four examples of this level can be seen in the Figure 5. First, there is a random scribble. The child that produced this message said the message was "I go to cheerleading with my sister." The writer knew the message, but there is no clear

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connection with the mark and the message. Later, it is likely that she would not remember what message she produced (Clay, 1975). The second image is linear scribbles and means "I love you" to this writer. Again, aside from the writer, the message would not be known by anyone else. She did write from left to right. Correct directionality is often inconsistent at this stage (Clay, 1975). Children may make marks from left to right but at the end of the line start again and move from right to left. They are exploring with print and do not yet understand all of the rules that accompany the English language—their orthography is still growing.

As children progress through the emergent stage of orthographic development, Cabell and colleagues (2013) describe their writing as consisting of letters and letter-like forms. In Figure 5, the third image looks like a series of *p*s. As the child was writing this message, she was saying "circle and a stick" while she was making the letters. This self-dialogue was in keeping with what the teacher had taught her about letter formation. When asked about the message, she reported that it said, "I went to the beach." At this stage, the child will begin using their letter knowledge in writing, but she has not yet made the connection between the letters and the sounds within her message. This writing sample is an example of Clay's (1975) recurring principle. A child who only knows a few letters will take a short cut to writing the long statement by repeating the same letter over and over again. This process provides a sense of accomplishment for children (Clay, 1975). The final sample is done by Macie. Macie had an elaborate story that matched the long string of m-a's that she wrote; however, the story was not about Mama. She was using the first two letters of her name to write a message and again providing an example of Clay's (1975) recurring principle. Both of these letter and letter-like form

samples provides a window into the child's orthographic development and we can see that she has some letter knowledge, but it is not yet connected with the sounds in the words she is writing (Clay, 1975).
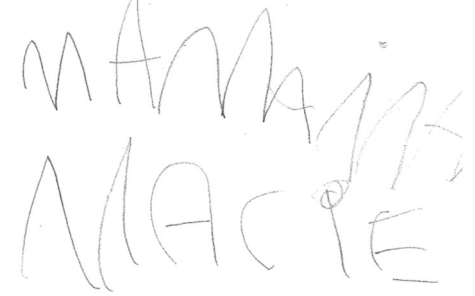
Drawing and Scribbling	Letters and Letter Like Forms

Figure 5. Writing in the emergent stage. This figure includes a range of writing samples within the emergent stage.

Integration of phonological awareness and alphabet knowledge. In the emergent stage of spelling, phonological awareness and alphabet knowledge is only budding and consequently children's orthographic knowledge is limited. Children are not yet integrating their developing phonological awareness and alphabet knowledge at this stage. In regards to the understanding of COW-T, it is lacking at this point and this lack of understanding is seen in their writing as any space put between the marks on their paper is unintended. The watershed event that moves them from the emergent to the

early letter name stage is that they begin to grasp the alphabetic principle, which is evidenced in their rudimentary COW-T (Morris, 2003). Toward the end of the emergent stage, writing begins to include some of the salient sounds in the word or repeatedly write a memorized word such as *dad*.

Early Letter Name

In early letter name stage of development, children are increasing their orthographic knowledge. The writing at this stage of development is hard to read because it typically lacks spaces between the words and the spellings are incomplete (Bear et al., 2016). Children may attempt to separate words by dashes or lines between the words (Clay, 1975). The sound layer of orthographic knowledge is predominately influencing the way children spell and read; however, at this level, children have an incomplete knowledge of the alphabetic system (Ehri, 2000). They lack a full grasp on all of the letter sounds (specifically short vowels and consonants that do not include the sound in their letter names) and only have partial phonological awareness, so at this level their reading and spellings will be focused on only some of the sounds (Beers & Henderson, 1977). At the early letter name stage of spelling development, students rely on either a good letter-name-to-sound match (e.g., N for in) or they choose letters based on the sounds in the words (e.g., *B* for *bear*) (Beers & Henderson, 1977; Henderson, 1985; Temple, Nathan, & Temple, 2012). They may find matches between the sounds and the letters based on where the sound is articulated in the mouth (Beers & Henderson, 1977). For example, /b/ and /p/ sounds are both made when your lips are put together, therefore, children at this stage will frequently confuse the sounds. Also, as the name of the stage suggests, children rely on the letter name rather than the sound to determine the

spelling. For example, a child may use the *Y* to represent the /w/ because the letter name *Y* begins with the /w/ sound. Children's invented spellings typically start by representing a word by the initial or salient sound in the word (Beers & Henderson, 1977; Henderson, 1985; Temple, Nathan, & Temple, 2012).

Cabell and colleagues (2013) describe the level of writing development at this stage as salient and beginning sounds. At this point in development, children rely only on direct letter-to-sound matches (Henderson, 1985). They often omit short vowels and ambiguous consonants (Beers & Henderson, 1977; Henderson, 1985). An example of writing at this stage can be seen in Figure 6. For example, a child may write *I P Y CRSN* when inventing a spelling for *I play with Carson*. The child wrote the initial sounds for *I* and *play,* but substituted *y* for *with* because she had not fully mastered that /w/ is the sound made by the letter *w*. Instead, she hear /w/ and associated it with the letter name *Y* (why). In this case, Carson is a close relative so she had seen his name represented many times and likely remembered some of the letters that are in his name (Ferreiro & Teberosky, 1982). At this stage, unlike the last, they will generally be able to read what they have written, even days after it is written (Temple, Nathan, & Burris, 1982).

Figure 6. Writing in the early letter name-alphabetic stage. This figure is an example of writing at the early letter name-alphabetic stage.

Integration of phonological awareness and alphabet knowledge. At this stage, the integration of phonological awareness and alphabet knowledge is coming together. This initial integration is the watershed event leading into the stage of development and it is solidified as children move forward through the letter name stage (Morris, 2003). They now have partial phonemic awareness and use most of the letters of the alphabet in their invented spellings; however, at the early letter name stage, they only apply the alphabetic principle to the initial or salient sound in a word (Beers & Henderson, 1977). Their COW-T can be described as rudimentary as they enter this stage. When rereading a familiar text, they may be able to track most words but when they encounter multisyllabic words, they may get off track (Morris, 1981). They are remembering these words on the basis of the letters within the boundaries of the words. For example when reading *Six Little Ducks* from memory, they may consistently point to *ducks;* however, they are likely only remembering it based on a few letters from the words (e.g., d, d-k, or d-s). If they are shown the word *ducks* out of this context, they will likely not remember it. As children move out of the early letter name-alphabetic stage, they firm up their COW-T and begin to correctly spell beginning and ending sounds (Morris, 2003).

Middle to Late Letter Name-Alphabetic Stage

As described by Morris and colleagues (2003), COW-T and spelling with beginning and ending sounds emerge together in the early letter name stage, and this leads to the ability to fully segment each sound in a consonant-vowel-consonant word. The distinguishing feature of spelling at this level of development is the consistent use of vowels (Henderson, 1985). In the middle letter name stage, they will have partial phonemic awareness and spell with beginning and ending consonants plus many

frequently occurring short vowel words (e.g., hot, pat) (Beers & Henderson, 1977). By the late letter name stage, children will spell short vowels and most consonant blends and digraphs correctly (Henderson, 1985). They have learned that multiple letters represent a single sound such as the /ch/ in Chad. They also spell high frequency words with long vowels correctly (like, love) but silent letters such as the silent e in less frequently spelled words such as *fame* will not be represented (Henderson, 1985). At the end of this stage, children have a full understanding of phonological awareness and can fully segment words into individual phonemes.

As children move through the middle letter name stage of development, Cabell et al. (2013) describe children as writing with beginning and ending consonants. Figure 7 illustrates this level. The first example shows the child's correct usage of the beginning and ending consonants for *hop* and *bat* as HP and BT and a clear understanding of word boundaries. In the second example, we can see more letters being represented as the child's phonemic awareness is developing. She spells *sorry* as SRE. Although the word is not spelled correctly, this example illustrates that the child is attending to more sounds within the word. In the next example, even more sounds are represented in *Merry Christmas*. The child substitutes short *A* for short *e* in *Merry* because these two sounds are at the same point of articulation in the mouth. She also uses an E for the *y* at the end of the word because she is still relying on the letter names to help her produce and invented spelling. In the final example, the child writes *snails lay eggs*. It is clear in this example that the child has full phonemic awareness because she represents every phoneme in the words; however, she is not yet correctly representing the long vowels.
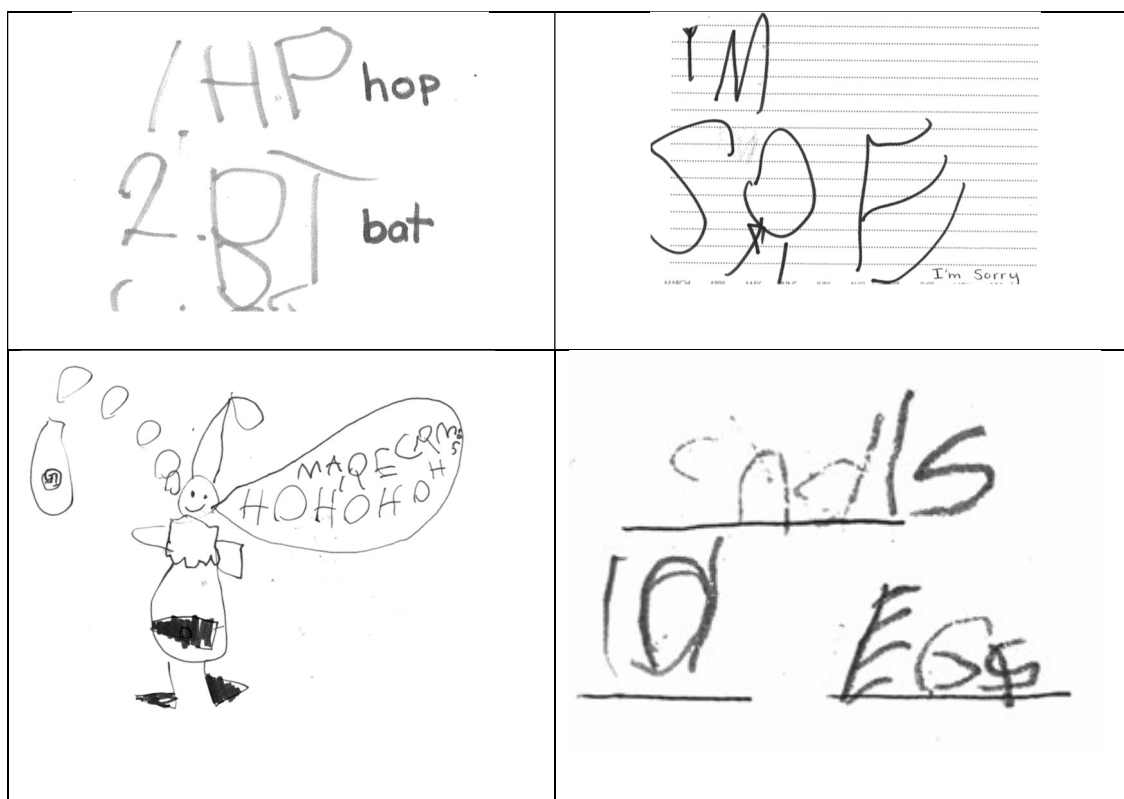
Figure 7. Writing in the middle to late letter name-alphabetic stage. This figure includes a range of writing samples within the middle to late letter name-alphabetic stage.

Integration of phonological awareness and alphabet knowledge. At this stage, children have fully grasped the alphabetic principle and are able to fully manipulate the alphabet system for reading and spelling words (Ehri, 2000). By the late letter name stage, they are armed with full phonological awareness at the phoneme level (i.e., phonemic awareness). Additionally, they are reading short books with easy to decode words and sight words. They can process the spelling of simple words and when they arrive at unknown words, they are able to use simple decoding strategies to generate reasonable pronunciations of the words (Ehri, 2000). At this level, they have some words stored in memory so they are now able to employ analogy to read an unknown word (Ehri, 2000). Moving forward from this level, they have an explosion of rapid sight word

learning and are relying on the words rather than pictures to guide their reading (Morris, 2003).

Within Word Pattern

The within word pattern stage includes children who can read and spell many words correctly. Their movement into the within word pattern stage comes with a marked increase in attainment of sight words (Henderson, 1985). Because the children now have a larger store of sight words, they begin to reread their spellings and notice they do not "look right" and this noticing leads them to consider patterns that govern the English language. Given their rapidly developing bank of words known by sight, they are spelling many words correctly, as well as consistently spelling consonant, blends, digraphs, preconsonantal nasals (e.g., *nk* in *pink*), short vowels, and r controlled vowels (e.g., *ar* in *farm*) (Henderson, 1985). Relatively few kindergarteners are in within word pattern stage even at the end of kindergarten; however, some do attain this level of knowledge.

The writing of a child at the early within word pattern stage will be much easier to read than in previous stages. At this point, most short vowel words will be spelled correctly, including blends and digraphs (Beers & Henderson, 1977). Children no longer omit the *m* and *n* before the final consonant (Henderson, 1985). The shift in this stage of development is that children now must move beyond focusing on solely isolating the phoneme and matching the letter to a sound, but now they must navigate their way through words that have silent letters (fam**e,** co**a**t) and special consonant patterns (li**ght**) (Henderson, 1985). This stage is marked by experimenting with silent letters that mark long vowels (Beers & Henderson, 1977; Henderson, 1985). At this stage, the children are

looking at vowel patterns within single syllable words. Children at this stage of development begin discovering patterns within words and using these, at first, common long vowel patterns (e.g., CVCe, CVVC) to help them read and spell words.

As children move through the within word pattern stage of development, they have mastered spelling short consonant, vowel, consonant words and many high frequency words (Bear et al., 2016). The example in Figure 8 shows the child's correct spelling of high frequency words *I, at,* and *the*. Although the example shows the child has control over some long vowel patterns (consonant, vowel, consonant, e) as seen in her correct spelling of *lake*, she is overgeneralizing that principle to the spelling of all long vowels words (e.g., *flote* for *float).*
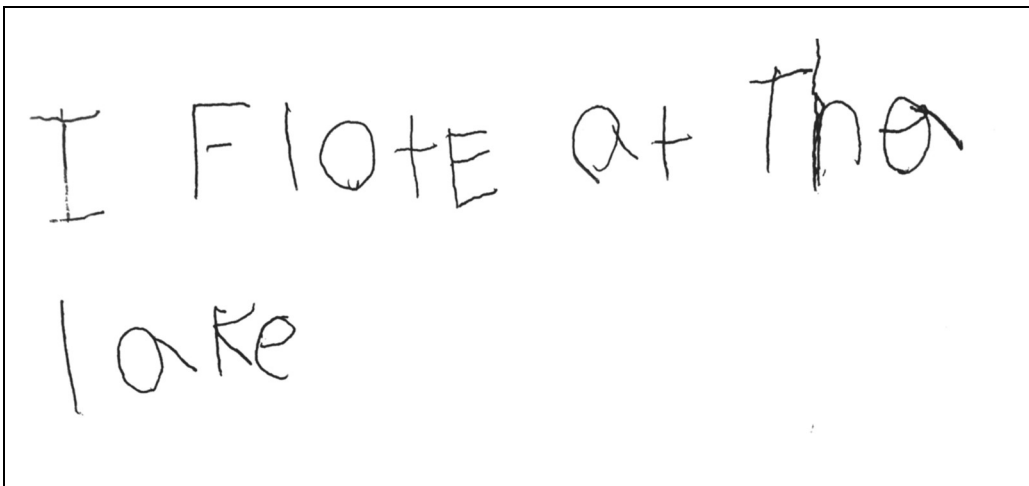

Figure 8. Writing in the within word pattern stage. This figure is an example of writing at the within word pattern stage.

This stage of learning is common among typically developing students at the end of first grade; however, this stage can occur before first grade or last into adulthood for a low-skilled adult reader. At this stage of development, the children have moved into focusing on the pattern layer of spelling. They can spell many single syllable words

correctly; include those with blends, digraphs, and preconsonantal nasals (Bear et al, 2012); but also make good invented spelling attempts with multisyllabic words. They are moving beyond the direct one-on-one correspondence between letters and sounds and are beginning to chunk sounds and look at patterns of letter sequences.

Integration of phonological awareness and alphabet knowledge. At this stage of development, children have fully integrated their phonological awareness and alphabet knowledge. Children at this stage are reading up to three-syllable words when there is contextual support (Bear et al., 2012). They have moved onto the consolidated alphabetic phase (Ehri, 2000) and are beginning to use patterns and chunks within words to decode and spell multisyllabic words. Now that they are able to work with chunks of letters, their decoding and invented spellings are much more accurate and fluid than before. Additionally, they now have an easier time making connections between letters and sounds and therefore, they are able to retain many more specific words in their memory (Ehri, 2000). At the beginning of this phase of word recognition, they are moving from reading aloud to silent reading.

Summary of Research on Orthographic Development

Research during the 20th century revealed that children's invented spelling and attempts were not haphazard, but followed a distinct pattern. Researchers built on the work of researchers who came before them to refine a framework for understanding the development of spelling. Bear and colleagues (2016) propose five stages of spelling development: emergent, letter name-alphabetic, within word pattern, syllables and affixes, and derivational relations. Children enter kindergarten along this continuum but most fall within the emergent to letter name-alphabetic stage. As students' spelling

develops, their spelling attempts reveal what they understand about English orthography. Their advancement in spelling also influences their reading progress. Knowing how children develop their orthographic knowledge allows teachers to see that there is a need for a range of instructional approaches that match the range of students. In the following section, I discuss the teacher's role during writing in the kindergarten classroom. Specifically, I explore research regarding the knowledge that teachers need for providing appropriate support, what decisions teachers make regarding time spent on writing, instructional strategies, and instructional scaffolds.

Scaffolding Children's Early Writing Skills

It is established that orthographic knowledge develops along a continuum with kindergarten children moving at their own speed on this continuum (Beers & Henderson, 1977; Clay, 1975; Ferreiro & Teberosky, 1982; Read, 1971). Further, it is widely accepted that children should receive instruction at their optimal level, or the level where they can perform just beyond what they might be able to do independently, with support (Maloch, 2002; Rodgers, 2004). Even as early as kindergarten, children come to school with varying levels of knowledge and skills needed to begin reading (Chatterji, 2006); therefore, instruction pacing should be differentiated based on children's needs. Teachers must attempt to teach children at a point where their learning will be maximized, not too simplistic and not too difficult. Gentry and Henderson (1980) suggested three steps for teaching beginning readers to spell: (1) encourage creative writing, (2) deemphasize standard spelling, and (3) respond appropriately to nonstandard spelling. For the teacher to meet the diverse needs within a kindergarten classroom, she must provide writing opportunities; then to respond appropriately to the invented, or nonstandard, spellings by

making systematic decisions about what instruction to provide. Vygotsky (1978)

described this point at which appropriate instruction and support is given as the *zone of*

proximal development (ZPD).

Vygotsky's (1978) theory of instruction guides this idea that instruction should be

delivered at a level appropriate to the child's abilities, or the ZPD. The ZPD is the

difference between a child's actual and potential ability; in other words, the place

between where they can function independently and where work is not too frustrating for

them. The ZPD has three major implications for the teacher. According to Bodrova and

Leong (2007), the teacher must know (1) how to help a child who is completing a task,

(2) how to assess the child, and (3) how to determine the appropriate instruction for the

child. It is assumed in this study that the teacher can assist a child who is completing a

task and is accurate in her assessment of the child's abilities. One of the major questions

of this study is if these teachers can determine the appropriate scaffold within the child's

ZPD.

Although Vygotsky did not directly use the term *scaffold*, the concept is derived

from his work. The term, scaffold, was actually introduced in the work by Wood,

Bruner, and Ross (1976). Wood and colleagues (1976) define scaffolding as:

> the process that enables a child or novice to solve a problem, carry out a task or
> achieve a goal which would be beyond his unassisted efforts. Scaffolding
> consists essentially of the adult 'controlling' those elements of the task that are
> initially beyond the learner's capacity, thus permitting him to concentrate upon
> and complete only those elements that are within his range of competence (p.90).

Scaffolding definitions commonly includes three types of scaffolding modalities:

speech-only scaffolding, joint speech and gesture scaffolding, and nonverbal scaffolds

(Wang, Bernas, & Eberhard, 2001). Speech only scaffolding includes a scaffold that

consists only of speech. For example, "what is the first sound you hear in a word?"

Joint-speech and gesture scaffolding includes a scaffold that involves speech and a

gesture (e.g., pointing, writing, putting up a finger to count a word). For example, the

teacher may say "The dog is black." She says each word as she writes it. In other cases,

she may model writing for the child to copy. Then she touches each word as she rereads

it. She may say, "I am going to write the word upon. I am going to show you. U-P-O-N.

Now you write upon." In this study, I refer to verbal scaffolds as those scaffolds that are

speech only and speech with gestures. A nonverbal scaffold can include gestures only,

expectant or quizzical looks, delays, presentation of specific materials, choices, or

environmental arrangements. Given the constraints of resources, this research focuses on

the verbal scaffolding strategies that teachers use.

Scaffolding requires the teacher to take action and give children appropriate

support in the ZPD, so that they can complete a task that they could not complete

independently. Wood et al. (1976) explored scaffolding of preschool children by their

mothers while engaging in a task of building a pyramid from wooden blocks. They

identified the key actions for the person providing the scaffolds as (1) getting the child

interested in the activity, (2) adjusting the task so it was doable for the child, (3)

providing motivation, (4) identifying what actions within the task are critical, (5)

monitoring and controlling the frustration of the child, and (6) modeling the task when

necessary. In the 40 years since Wood and colleagues (1976) introduced the term

scaffolding, much has been learned about how scaffolding works, including an

understanding that scaffolding is a very complex process.

Wong and colleagues (1994) explored the role of scaffolding, but with older children and in a different context than Wood et al. (1976). Wong and colleagues' (1994) study took a close look at the interaction of five Reading Recovery teachers and their first grade students. They looked specifically for five distinct scaffolding environments: telling, modeling, prompting, coaching, and discussing. The results of their study revealed that these scaffolds do not occur in isolation, meaning, rarely did the teacher provide a single scaffold. Instead the researchers witnessed the teachers attempting multiple scaffolds until they were able to find the one that provided the best support for the children. They also found evidence showing that teachers often adjust the level of scaffold based on the child's need. In Wood and colleagues' study, the scaffolds were adjusted based on whether the child had previously read the book. This finding is important because it shows that teachers do not just use general scaffolds, but make an attempt to effectively use the scaffolds to move children forward in their learning. This idea was corroborated by other researchers in different contexts.

Maloch (2002) had similar findings in her 5-month qualitative study of the interactions between one teacher and her third grade students during literature discussions. Maloch (2002) found many of the same scaffolding techniques observed by Wood et al. (1976) were also observed with these third grade children participating in discussions about literature, which required much more complex thinking than the building of a wooden pyramid. Malcoh (2002) asserted that the teacher needed knowledge of scaffolds before she could use more low support strategies. This idea of the teacher needing knowledge to effectively scaffold was seen in all three of the studies that have been discussed. Further, Maloch (2002) found that when the teacher was

implementing scaffolds to help move the conversation from teacher to student led, the goal was accomplished—there was in increase in discussion during the conversations around literature. The idea that scaffolding not only supports learning in accomplishing an individual task, but can impact overall learning outcomes, was critical in boosting the importance of appropriate scaffolding during instruction.

Although Rodgers (2004) does not claim that progress was made solely based on the scaffolds children received, the children in her study did make considerable progress with a teacher who provided scaffolds for their literacy instruction. Over a 12-week period, Rodgers (2004) observed two literacy teachers and their four first grade students in a one-on-one setting. Based on these observations, she found that there were certain elements of effective scaffolding among those students who made considerable progress. She found the teachers of children who made considerable progress provided opportunities for errors and differentiated the support they provided. It is essential to provide opportunities for challenge and result in errors so there is a task to be scaffolded. This is a corroboration of the same finding of Wood and colleagues (1976). Further, these findings were in keeping with other research that showed that teachers vary the type and amount of support within an interaction and across time. The teacher must decide in the moment what to attend to and the best support to provide. This research shows that scaffolding is both complex and challenging for the teacher.

A limitation of two of these scaffolding studies is that they are in a one-on-one setting. Although the Maloch (2002) study is with a small group, it is with an older group of students than the other two. This research does suggest that teachers use scaffolds and they show the potential for scaffolds as a positive influence on learning

outcomes; however, less is known about how and what types of scaffolds are used in kindergarten classrooms. There is not currently a framework to describe the types of scaffolds used with children during writing, so for this study, I will use the scaffolding framework developed for effective shared book reading and general literacy instruction. This scaffolding framework has been used within the curricular supplement *Read It Again* (Justice & McGinty, 2013) and *Ladders to Literacy* (O'Conner et al., 2005).

Types of Scaffolding Strategies

O'Conner's framework includes six levels of scaffolding strategies used during read aloud (i.e., open-ended questioning, providing feedback, cognitive structuring, holding in memory, task regulation, instruction; see O'Conner et al. in *Ladders to Literacy,* Paul H. Brookes Publishing, Baltimore, MD, 2005). These strategies include high, low, and medium-support scaffolding strategies.

High support scaffolds. High-support scaffolding strategies are strategies for children who are far from completing the task independently. High-support scaffolding strategies are those that require a high level of support and a low level of effort for the child. According to O'Conner et al. (2005), high-support scaffolds include *instructing* and *task regulation*. *Instructing* describes scaffolds in which the teachers provides direct assistance in a highly-structured manner (i.e., modeling, asking direct questions, orienting the child to a support, prompting elicitations, and co-participating), and *task regulation* are scaffolds in which the teachers modified certain aspects of the task to simplify or clarify (i.e., making the task more concrete, reducing choices, matching interests and experiences, and rearranging elements of the task).

Low-support scaffolds. In contrast, low-support strategies are strategies for students who need minimal support to complete the task independently. Low support strategies are strategies in which the task requires a high level of demand for the child and the support is low. O'Connor and colleagues (2005) identified open-ended questioning and providing feedback as the two types of low-support scaffolding strategies that early childhood teachers sometimes use to support children. Within these two categories, they identified sub-categories of each. *Open-ended questioning* includes asking for descriptions, asking children to predict and plan for the next steps, asking for explanations, and using question to relate to the child's experience. *Providing feedback* includes providing encouragements, acknowledging the child's efforts and providing information to enhance learning, evaluations, thinking aloud, and requesting clarification from the child.

Medium-support scaffolds. Medium-support scaffolding strategies are those that require a medium level of demand for the child and a medium level of support from the teacher. O'Connor and colleagues (2005) use holding in memory and task regulation to describe the two categories of medium-support scaffolding strategies. For *holding in memory*, the teacher and child share the responsibility of the memory demands to stay on task through a range of techniques (i.e., restating goals, providing summaries and reminders). During *cognitive structuring*, the teacher provides structure for thinking and facilitates logical reasoning by pointing out explicit rules and logical relationships, using sequencing as a support, and pointing out contradictions.

Scaffolding has been shown to be effective in other areas of language and literacy and with younger children. In 2010, Pentimonti and Justice examined the use of

scaffolding during book reading in preschool classrooms. They looked closely at a read aloud of five preschool teachers and looked specifically for the six types of scaffolding strategies. They looked for these scaffolds in videotaped classroom observations for five preschool teachers who were conducting whole group read alouds in their classrooms. The videos were coded using systematic observations procedures. Results of their studies showed that teachers showed a preference for using three of the scaffolds most often-generalizing, reasoning, and predicting (open-ended questioning). Teachers used low-support scaffolds with higher frequency (96%) than high support scaffolds. In fact, the teachers only used about one high support scaffolding strategy per observation session. Interestingly, by survey, the teachers reported that they used an equal number of high- and low-support scaffolds. The discrepancy between teachers' report of used scaffolds and their actual use was statistically significant.

It is important to consider that one scaffold will not work for all children nor for the same child every time. A relationship exists between the child's level of development and the learning so that as one is changing, so is the other (Bodrova & Leong, 2007). It is necessary for the teacher to modify their methods and accommodate the teaching for the children within the classroom. In the following sections, I discuss scaffolds that are related to children's performance and instructional targets at each level of spelling development.

Scaffolds at the emergent stage. To orient children to the way print works, it is necessary to spend time reading and writing with the child individually, as well as in whole and small groups (Temple et al., 1982). One way of accomplishing the goal of this stage is by modeling writing through group dictations. Creating group experience

stories through LEA, helps develop COW-T (Stauffer, 1970; Temple et al., 1982). While writing, teachers may model thinking aloud to the children and use phrases that model page orientation such as "I am going to start here because I start at the top of the page when I write." At this stage, teachers may also model using her phonological awareness (beginning sounds) and alphabet knowledge while connecting the sound to a letter by saying "I hear a /k/ at the beginning of *kite* so I will write a *k*. Look at my alphabet chart. Which one of these letters is the *k*?" They also encourage children to interact and ask questions that elicit them to think about print direction and the individual words in a sentence (COW-T) such as "Where do we begin writing?", "How many words are there in our sentences", or "What word are we writing next?" (Button, Johnson, & Furgerson, 1996, p. 447). Teachers can employ a low-level scaffolding strategy with these questions by asking children how they knew the answers to these questions. Rereading the written material is also critical to drawing children's attention to the way print works and specifically that print is composed of words and words are composed of letters (Temple et al., 1982). Teachers may point to the words as they reread the text and use phrases such as "Would you point and read what we have written so far? (Button et al., 1996, p. 447). At this stage, children will need a high level of support to reread and point correctly, so teachers will model reading and pointing to the words or allow the children to attempt the rereading and provide hand over hand support so the children can correctly point to the words. This modeled and interactive writing exchange may happen in whole or small group. Other examples of teacher talk for scaffolding emergent learners can be found in Table 2. In the first row of the table there are examples for instructing, second

row for task regulation, third row for holding in memory, fourth row for cognitive

structuring, and the fifth row for providing feedback.

Teachers may use similar prompts to teach about the way print works when taking

individual dictations. During individual writing, teachers may be overheard saying "Tell

me about your picture" (Cabell et al., 2013). They will then write the words exactly as

the child speaks. After writing, she will point to each word as she reads it (Cabell et al.,

2013). By prompting the child to tell her about the picture, the teacher is helping the

child learn that we can use words to express our ideas. She is modeling the writing of

words and drawing attention to the words by pointing. She may also encourage the child

to write their name during individual conferences. Names are very important to the

emergent writer, so the teacher can use the name to help support the child's learning

about print. She may also encourage the individual to write his/her name as well as

friends and family names on their work (Temple et al., 1982). Writing names will help

solidify the idea of a word being composed of letters.

The second goal of this stage is to begin using letters within their words and begin

invented spellings that are connected to the sounds in the word. Research supports the

idea that invented spelling is useful in advancing code related literacy skills (Uhry, 1999).

For this reason, developing a willingness to take risks is critical for meeting the goals of

this stage (Temple et al., 1982). Temple and colleagues (1982) suggest that in order for

children to be willing to invent spellings, they need to be willing to take risks. They

identify a number of ways that teachers can help children gain self-confidence and take

risks: (1) provide writing opportunities that are low risk, (2) talk to the child and praise

him/her for what they know about writing, (3) support and encourage invented spelling,

as well as educate parents on the value of invented spelling. Teachers of an emergent writer will provide opportunities for the child to explore independently with a variety of writing materials. They may praise students for what they know about writing by saying phrases such as "You did a nice job writing letters." "I like that you wrote your words from left to right." Or "Nice job! You drew a picture here and you added words." Lastly, there may be evidence of the teacher supporting invented spelling by displaying students' work that includes scribbling or letters and letter like symbols.

Table 2

Scaffolding Strategies and Examples for Each Level of Spelling Development

Instructing	
Modeling *Teacher provides the model answer for the child.*	**Emergent:** "I am going to start here because I start at the top of the page when I write."
	Early Letter Name: "Listen to the word /ppp/*pot*. I hear a /p/ so I will write a *p*. /ppp/*pot*"
	Late Letter Name: "Listen to the word /p/ /ot/. Listen for all of the sounds you hear in *pot*. I hear /p/ so I will write a p, then I hear /ot/ so I will write ot."
	Within Word Pattern: "Listen to the word *stove*. I am going to write all of the sounds I hear. I wrote stov. What word does that make? Stov? That doesn't sound right. I need to add an e so the o makes the long o sound."
Task Regulation **Reducing choices** *The teacher offers two or three options for the child to consider.*	**Emergent:** "I hear a /b/ at the beginning of *bear* so I will write a b. Look at my alphabet chart. Which one of these letters is the b?"
	Early Letter Name: "Which sound do you hear at the beginning of *bear*? Is it /b/ or /s/?"
	Late Letter Name: "What sound do you hear at the end of *bear*? Is it a /r/ or /m/?"
	Within Word Pattern: "What letters would make the /–ear/ in *bear*? Is it eer or ear?"

Holding In Memory **Restating Goals** *The teacher reminds the child of the behavior that is expected.*	**Emergent:** "Remember, words are made of letters, so I should see letters on your page."
	Early Letter Name: "Remember, we are listening for the beginning sounds in words. Think about your word and write what you hear first."
	Late Letter Name: "Remember, we are working on writing all of the sounds in the word. Be sure you write down all of the sound that you hear."
	Within Word Pattern: "Remember, we are working on writing the long vowels correctly in words."
Cognitive Structuring **Sequencing** *The teacher helps the child find a starting point.*	**Emergent:** "What word are you writing first?"
	Early Letter Name: What sound you hear first in pot?"
	Late Letter Name: "What is the last sound that you hear?"
	Within Word Pattern: "How will you show the word has a long vowel sound?"
Providing Feedback **Acknowledgement and Informational Talk** *The teacher supports the child by providing a statement to describe what the child is doing.*	**Emergent:** "Good job. You started writing at the top of the page."
	Early Letter Name: "Nice work! You wrote the first sound you heard in every word!"
	Late Letter Name: "I am proud of you for writing all of the sounds you heard in that word."
	Within Word Pattern: "Great job. You hear the /ou/ sound and wrote an ou."
Open-Ended Questioning **Reasoning/Explaining** *The teacher asks the child a what, why, or how question to support his or her learning.*	**Emergent:** "How do you know where to start writing on this page?"
	Early Letter Name: "How did you know to write a *p* at the beginning of *pot*?"
	Late Letter Name: "How did you know to write a *u* in the middle of *puppy*? "
	Within Word Pattern: "How did you know to add an *e* to the end of home?"

Scaffolds at the early letter name stage. To teach children to correctly represent

initial sounds, it is important to continue to expose them to plentiful opportunities to

interact with print. At the early letter name stage, the LEA is still a useful strategy during

whole or small group writing time. The focus of instruction is around strengthening their

accurate representation of the initial sound in words. LEA continues to be a useful

instructional strategy at this stage; however, the verbal scaffolds a teacher uses will sound

different. The teacher will model the alphabetic principle by modeling the integration of

alphabet knowledge and phonological awareness. She may say "I am going to write the

word *fish*. /Fff/ ish. I hear a /f/ so I will write an f." As students become more proficient

with their representation of initial sounds, she may use more low level scaffolds. This

interaction may occur during a small group lesson with children at the same

developmental level. She may ask children to share their thinking with her or others. She

may say "turn and tell a friend the sound you hear at the beginning of the word." During

a small group lesson she may also encourage children to participate in interactive writing.

She would ask children to assist in writing some words. After having a child write the

first letter of the word *cup*, she may say "how did you know to write the letter c?" She

will look to the child to explain his/her thinking. Other examples of the verbal scaffolds

can be seen in Table 2.

Children at this stage have improved in their accuracy of finger pointing, but they

still do not have a stable COW-T. A second goal at this stage is to work toward the

development of the COW-T. One way to work to this end is to explicitly model the

connection between speech and words. As the teacher is writing words during a dictated

writing experience, she will be sure to say the words at the exact moment that she is

writing it. She will also encourage the children to read and reread the dictation.

Rereading his/her own writing while finger pointing will help the children take notice of

the print and space between words (Temple et al., 1982).

Scaffolds at the middle-late letter name stage. Children's COW-T at early to

late middle name stage is stable and they are becoming increasingly aware of all of the

sounds within a word. There is a progression during the middle to late letter name stage

from a focus of instruction on the ending sound to attention to the beginning, middle, and

ending sounds of a word.   A big focus during this time will be strengthening the

children's phonemic awareness so they are able to attend to all of the phonemes in a

word. Teachers will continue to provide a model of fully understanding the alphabetic

principle. They may model by saying "I hear three sounds in the word *pig- /p/ /i/ /g/* so I

will write the letter *p* for */p/* and *i* for */i/* and lastly *g* for */g/*." During the middle of the

letter name stage, the verbal support teachers provide will be around encouraging the

children to move toward representing the final sounds in a word. As teachers are

recording children's ideas during the LEA, they may ask children to assist in writing the

word but provide a high level of support by saying "Listen for the sound at the end of the

word *top*. Is it a *p* or *f*?" This level of support will help children who are just beginning

to represent the final sound. For children who are stronger in their development, teachers

may be overheard saying "Trish, your name rhymes with fish. Can you help us write the

rest of the word *fish*?"

Another goal at this stage is to help children build a bank of words that they can

spell readily. Now that children are able to remember the message that they write and

those written by the group, during independent writing time, they may be encouraged to

reread their individual writing and the group writing. Repeated readings are important for beginning to build their repertoire of words stored in memory. These rereadings are also useful because in this stage they will gradually notice the disparity between their invented spellings and the standard spellings (Temple et al.,1982). Teachers at this level may need to support students in their revision of their writing by answering questions such as "is this the right way to spell *sand*" by saying "There is a letter in that word that is hard to hear. Can you think of a word around our room that rhymes with *sand*? Yes, on our chart it says 'raise your hand'. You can use the word *hand* to help you write the word *sand*."

   Scaffolds at the within word pattern stage. At this stage of development, children have full phonemic awareness and are able to readily break apart words and find letters to spell them; however, the instruction now is moving beyond one to one correspondence of letters and sounds. The instruction at this stage is focused on helping children gain control of patterns and continue to take notice of standard spellings. It is not common to have many children in kindergarten at the within word pattern stage; therefore, they will still be part of the interactive writing experience. In the whole group, they can still benefit from interactive writing experiences but their contributions may be whole words rather than a few letters and teachers will prompt children to assist with words that contain long vowels.

   During conferences that may occur during or after independent writing, teachers will make choices about which words to have students revise. Children at this stage may recognize when words are spelled incorrectly, so she may model how they can respond. For example, she may say, "I want to write *home*. Let's write a letter for each sound that

I hear *h-o-m.* Hom? That doesn't sound right. I need to add a silent *e* so the *o* will say

the long sound. This word has a vowel-consonant-e pattern." More examples of high-

support and low-support scaffolds are in Table 2.

Summary of Scaffolding Children's Early Writing Skills

Scaffolding is a way a teacher can support children's writing growth along a

developmental continuum of orthographic knowledge (Wood et al., 1976). Research

suggests that scaffolding is a complex task for teachers but it holds the potential for

improving learning outcomes (Maloch, 2002; Rodgers, 2004; Wong et al., 1994). When

successful scaffolding occurs in the ZPD, the task should stay the same but the amount of

assistance should vary; as learning occurs, there should be a clear shift of responsibility

from the teacher to the child, and the supports should be provided on a temporary basis

and gradually removed as independence is achieved (Bodrova & Leong, 2007).

As independence is achieved, the level of supports can be adjusted. These

supports range from high support to low support and can be varied based on children's

needs. High level of support would be useful when the task is more difficult for the child

and they need greater assistance to complete the task. Writing scaffolds at this level could

include the teacher offering two choices or modeling such as, "Do you hear /c/ or /f/ at

the beginning of the word?" On the other hand, there are times when the child is nearly

independent with the task and needs minimal support. Low-support scaffolds may

include asking the child, "How do you know there is a c at the beginning of this word?"

We know that some teachers in the primary grades use some scaffolds within

interactions and across children and classrooms (Clements, 2010; Henderson et al.,

2002); however, there has been little research that shows how teachers use these scaffolds

within the context of kindergarten writing instruction. There is a need for understanding how scaffolds can be used in writing because it is a context where children are consistently confronted with challenges, which research suggests is a prime context for scaffolding (Wood et al., 1976).

Writing as a Context for Scaffolding

Writing in kindergarten classrooms has been observed over the past 30 years. Puranik, Al Otaiba Sidler, and Greulich (2014) observed in 21 classrooms over the course of the school year. Each classroom was observed once in the fall and once in the spring for their 90-minute instructional block for reading and writing. They found that the actual time spent writing in the kindergarten classroom was limited. On average, only 6.1 minutes were spent on writing in the fall and 10.5 in the winter. Of this time, most of the student-practice time was spent on independent writing. When the teacher did provide instruction in writing, the instruction involved teacher modeling for the group or teacher editing. Puranik and colleagues (2014) found there was large variability in kindergarten writing practices within and across schools and likewise large variability in students' performance on writing tasks. Some teachers spent more of their time on teacher-centered activities (teacher modeling writing or providing direct instruction) and others spent more time with student-centered activities (students practicing writing or writing independently).

During Clay's (1975) observations of writing samples from kindergarten children during the first two months of school, she found that children learned to print through five common methods: (1) dictated writing, (2) tracing, (3) copying, (4) wrote sight words, and (5) invented spellings. The focus of group and individual instruction was on

letter formation. These findings are not far from the practices that are have been observed over the past twenty years. Bassok, Latham, and Rorem (2016) compared kindergarten teachers reported practices and beliefs between 1998 and 2010 using data from two large, nationally represented studies that were part of the Early Childhood Longitudinal Study (ECLS-K 1998, 2011). As part of these studies, parents, teachers, and school administrators completed detailed surveys. The survey was given to teachers in the fall and spring of each year they were surveyed. Most of the items on the 1998 and 2010 surveys were the same, so it allowed for comparison of data. Not only were the 1998 findings regarding writing practices consistent with Clay's (1975) observations, they were also consistent with the findings in 2010 and Puranik's findings in 2014. In 1998 and 2010, teachers reported students dictating stories, although only 16 and 20% taught the skill daily and 70 and 66% taught it weekly, respectively. In regards to tracing, in 1998, 98% of 2,500 teachers reported practicing writing the letters of the alphabet and 95% of the 2,700 teacher sample in 2010. Clearly, as Clay found in 1975, letter formation is still an important focus in kindergarten. Regarding invented spelling, there was an increase of 16% (p < .001) between 1998 and 2010 in encouraging children to write with invented spelling every day and an increase of 11% in encouraging invented spelling weekly. Ninety-six percent reported that at least weekly they encouraged children to write with invented spelling daily though only 62% encouraged invented spelling daily. As the opportunities for invented spelling increase, writing becomes an ideal place for teachers to scaffold these spelling attempts.

Although the study of Bassok and colleagues (2016) included a much larger sample than Clay (1975) and Puranik et al. (2004), they relied on teacher reported data

rather than direct observations. Similarly, Cutler and Graham (2008) used teacher survey data to report on classroom practices. In 2008, Cutler and Graham surveyed 178 first through third grade teachers and found that overall the instructional approaches were eclectic (combination of skill and process approaches) and that there was considerable variation in what was reported. Teacher reported data is often not consistent with what is observed, so there is a need for observational data to support the findings from survey data. Puranik et al. (2014) used observational data to confirm that practices vary widely within and across schools in kindergarten classrooms. Given this variety, a useful addition to the existing literature is an observational study that explores reasons why there might be variation.

For scaffolding to occur during writing, the opportunity for students to practice writing and challenges with the writing task must be present. More research is needed around what effective scaffolds are used within writing time so we can explore how best to support teachers' efforts to provide opportunities and "just right" challenges for student writing tasks and to scaffold their writing attempts based on students' needs.

Research on Scaffolding During Writing

Although there is some observational research regarding the general practices in classrooms, there is limited research that addresses scaffolding in the context of writing. In 2002, Henderson, Many, Wellborn, and Ward used a collaborative method of teacher research to explore the scaffolds that a preschool teacher used to support learning. One important limitation to note is that they conducted their research in Wellborn's classroom, which could have influenced the findings of the study because she was privy to the purpose of the study. Participants for this study included eight students (3 to 5-

year olds) and their teacher, Wellborn, in their multiage preschool classroom. The observations occurred over a five-month period. Within the context of writing, they found that Wellborn did provide support for children that was differentiated based on children's needs and shifted the focus from intellectual, emotional, or academic depending on those needs. For example, for one child, the teacher wrote the child's words to support writing and for another child the teacher encouraged the child to sound out the word. Wellborn justified these scaffolds based on her perception of what they needed. Notably, this study did not ask Wellborn to identify the children's levels, but instead supported the finding that she differentiated based on her report that the child needed a particular focus for instruction and so she provided it. Regardless, this study provides evidence that at least some early childhood teachers use scaffolds during the writing context.

Other studies have described teacher-child interactions around writing. Clements (2010) described how one kindergarten teacher provided feedback during writing conferences to meet the diverse needs of her kindergarteners.   The results of her study showed that teachers provided feedback to students around mechanics (e.g., capitalization, punctuation), composition (e.g., add details), and direction patterns (e.g., left to right, top to bottom), and phonemic awareness (e.g., beginning and ending sounds).   Similar to the Henderson et al. (2002) study, a limitation was that the researcher was the classroom teacher; therefore, she had complete knowledge of what the study was exploring and therefore these findings could have been influenced by her role in the study. As the researcher and the teacher, it is difficult to ascertain if these practices

are likely to appear in any other setting or if prior knowledge of the research question and purpose of the research influenced her interactions as a teacher.

Gerde, Bingham, and Pendergast (2015) provided a new addition to the literature by using quantitative methods to look at preschool writing environments. They used the Writing Resources and Interactions in Teaching Environments (WRITE) for preschool classrooms (Gerde & Bingham, 2012) to observe in 86 four-year-old classrooms. One part of what they examined was the scaffolds around writing that teachers used during the instructional part of the day. They looked at scaffolds during interactions and also environmental scaffolds. They found that 80% of teachers provided a scaffold during writing; however, the frequency was low (one to two per teacher). Most of the scaffolds that were used by the teachers were very high-support scaffolds such as writing letters for the child to copy. They found that low-support scaffolds were very rare and were typically only used when the child initiated them. This study looked at many elements of the preschool classroom, only one of which was scaffolds. Considering how teachers use these scaffolds in kindergarten and how the scaffolds may be related to children's needs may be a useful addition to existing literature.

Summary of Writing as a Context for Scaffolding

We know very little about what is happening during kindergarten writing time or why it is happening. Few studies have used observational methods to explore this specific context. Other studies have explored writing that occurs across the instructional day (Bassok et al., 2016; Cutler & Graham, 2008; Graham et al., 2012). Even fewer studies have looked specifically at scaffolds provided to support writing (Clements, 2010; Gerde et al., 2015; Henderson et al., 2002). Existing research does suggest that teachers

are providing scaffolds, but it is not known if these scaffolds are actually related to the children's needs, specifically how they are related to the needs of kindergarteners. Knowing how teachers scaffold students' writing and how those scaffolds relate to where students are on the continuum of orthographic development may help those providing professional development to teachers to know how to provide guidance for early writing instruction to make the most effective use of the writing block. In this study, I will address this gap in the literature.

CHAPTER 3
METHODOLOGY

In this chapter, I discuss the research design and methodology for the study. This chapter includes: the research questions, research approach, a description of the participants, data collection methods, instrumentation, details of the data analysis methods, and a discussion of the trustworthiness of the study.

Research Questions

The purpose of this study was to explore the ways in which teachers support children's orthographic development in the context of formal writing time. I conducted the study during the 30 minutes of formal writing instruction that occurred in four kindergarten classrooms in a rural school district that I gave the pseudonym of Anderson County. I used observations and other sources of data to provide a detailed description of the scaffolds that these teachers used and how these scaffolds were related, or not, to the teachers' knowledge of students' spelling and reading development.

Specifically, the following two research questions guided the collection and analysis of the data:

1. In what ways, if at all, do kindergarten teachers use verbal scaffolds to support children's orthographic development during writing instruction?

2. In what ways, if at all, do these verbal scaffolds differ according to the teacher's perception of children's existing orthographic knowledge?

This study is important to the district because the findings provide the district with information on how this group of kindergarten teachers supports orthographic development during formal writing time. This information will provide stakeholders, and the greater literacy community, with insight into what scaffolds are currently being used and what training may be useful for teachers in the future.

Research Approach

Paradigm

A paradigm is a set of beliefs that guide the researcher through the research process (Guba and Lincoln, 1994). The paradigm that guides this project is that of pragmatism. Pragmatism emerged out of the work of American philosophers in the early 1800's. These philosophers believed that the world should be researched according to methods that fit with the research questions and carried out in the natural context (Savin-Baden & Major, 2013). The key beliefs for this paradigm are that (1) the research should reconcile theory and practice, (2) the research approaches are diverse and developed based on the circumstances, and (3) the research should be conducted in a naturalistic context.

I explored the natural behavior of the teacher and children in the classroom during their normal writing time. This exploration is in keeping with Savin-Baden and Major's (2013) definition of pragmatism because the focus is a "business as usual" process.

Research Method

A case study is a qualitative method of research that yields a description and themes from a focus on a single case or multiple cases over a length of time through multiple sources of data (e.g., observations, interviews, audiovisual material, documents,

and reports) that allows for themes to naturally emerge during the study. One purpose of a case study is to explain the "how" of a real-time event (Yin, 2013). The purpose of this study is to explain how teachers support the development of orthographic development in the context of writing.

I chose case study methodology for the study of kindergarten writing instruction because there is limited research on the scaffolds used by teachers to support orthographic development in the context of writing and this method allows for emerging themes and concepts to be identified. Another reason for choosing case study is due to the limited observational research of kindergarten writing time. Most research on writing in the kindergarten classroom has relied on surveys using teacher reports of practices (Cutler & Graham, 2008; Dickinson & Tabors, 2001) or includes observations of the entire language and literacy block rather than specifically looking at a block of time that is designated strictly for writing. The limitation of relying on surveys is that we know what teachers plan to do or report that they do is often not consistent with what occurs in the classroom (Dickinson & Tabors, 2001). The focus of my study is unique because I am looking closely at the scaffolds that teachers are providing children during writing time. The research methods, the time block observed, and focus of this study make it a positive addition to the existing literature on this topic. The next section describes the sampling rationale, site and participant access, and a description of the participants.

Research Site, Participants, and Access

I explored the interactions in four kindergarten classrooms with 83 students to learn about the ways that teachers provide support to help promote orthographic development for five- to six-year-old children during formal writing instruction. The teachers in this

study came from four schools in a small, central Virginia school district. In this section, I describe the sampling rationale, the site, participants, and how I gained access to and recruited the participants.

        Sampling rationale. For this study, I used purposeful sampling. Purposeful sampling is the process of purposefully and carefully selecting the data sources, participants, or cases based on what or how much can be learned from them (Lapin, Quartaroli, & Riemer, 2012). The focus of this study is an in-depth analysis of four classrooms where formal writing instruction is occurring each day. Despite the recommendation that writing instruction should occur 30 minutes per day (Graham, McKeown, Kiuhara, & Harris, 2012), recent research of kindergarten writing time has revealed that time spent writing on any type of writing instruction is often limited to six to ten minutes per day (Puranik et al., 2014). Given the limited time spent on writing instruction in most kindergarten classrooms, exploring what teachers are doing becomes difficult. Anderson County district leaders mandated that all kindergarten classrooms have a 30-minute writing instructional block per day; therefore, this requirement made this district a good fit for this study.

        I decided to choose four participants because I wanted a sample that represents the diverse experiences of the kindergarten teachers in this district. I saw four categories of experience within this district: experience with the writing curriculum, more than 5 years of teaching experience, less than 5 years of teaching experience, and holding an advanced degree. Some of these categories overlapped, but I aimed to have teachers represent each of these areas. Also, four participants allowed for an opportunity to rotate

teachers through a cycle of observation so that two weeks of teaching is observed over the course of eight weeks.

Site and participant approval. Anderson County provided access to all seven of the possible elementary schools. Upon hearing about the study, the district provided a list of seven possible teachers at various points in their career that district leaders felt would be willing to participate in the study. They provided one teacher from each of the seven elementary schools. The distance of one of the locations was too great to make this study feasible; therefore, there were six possible participants.

After following the protocols outlined by the University of Virginia's Institutional Review Board for Human Subject Research and being granted permission to proceed with my research, I obtained permission to conduct research in the school district from the school division leaders. Next, I emailed the six kindergarten teachers an invitation to participate in this study. In the email, I explained the requirements of participating in the study, including teacher actions and time commitment to each teacher. Appendix A provides an email template that I used. If teachers did not respond to the messages, I sent a follow-up email. All teachers replied by the second email and only one declined the invitation.

During a follow-up phone call with the teachers who expressed interest, I asked each teacher to provide demographic information that allowed for purposeful sampling (years of experience, degree held, and area of specialization). Based on this information, I was able to select four teachers that met my criteria. Two of the teachers were both veteran teachers with bachelor degrees, so I chose the one who was also part of the pilot study because I wanted to observe a veteran teacher with extensive training in supporting

writing which provided a contrast to the teacher with less teaching years but was part of the pilot. Prior to the start of the study, I obtained consents from participating teachers in person via the informed consent agreement (see Appendix B). Parents were also sent a notification to let them know that research was being conducted in their child's classroom and offering them the opportunity to opt out. A copy of this parent consent letter can be found in Appendix C. No parents expressed a desire to opt out.

Research sites. Although the focus of this study is four classroom teachers, it is important to understand the larger context. The four schools where the teachers worked are located in a rural, central Virginia school district. Anderson County includes seven elementary schools, two middle schools, and two high schools. Based on publicly available information, as of 2016, the enrollment across all schools was 7,948. The teachers came from four schools across the district. Across all kindergarten students across the district, during this school year, 50.2% were male and 49.8% were female. Table 3 shows the demographics of the kindergarten classrooms across the district for the 2016-2017 school year.

Table 3

Kindergarten Student Ethnicity Percentages in Anderson County 2016-2017

Ethnicity	Percentage of Students
White	68%
Hispanic	8%
Black	15%
Asian	<1%
Hawaiian	<1%
American Indian	0
Other	0
Two or More	7%

Research participants. Participants in this study are four teachers and their students. In this study, the sampling framework was designed to create a sample that represented the diverse teaching experiences of the kindergarten teachers in Anderson County. Table 4 shows details about the four teachers in terms of experience, educational level and specialization level. All teacher participants were white and female.

Table 4

Teacher Participants

Teacher	Years of Teaching Experience	Participated in Curriculum Pilot Group	Education Level	Specialization
Ann	4	Yes	Bachelors + Master's Level Classes	Elementary Education
Kate	10	Yes	Bachelor's	Elementary Education
Leigh	2.5	No	Bachelors + Master's Level Classes	Early Childhood/Childhood Education with History Specialization
Elaine	2	No	Bachelor's	Elementary Education

Ann. Ann had four years of teaching experience and all her teaching experience has been in kindergarten. She held a bachelor's degree in elementary education. She had previously participated in a pilot program of the county's adopted writing curriculum *Writing Into Literacy-K* (WIL-K; Copp, Cabell, & Wallace, 2015). During the pilot

program, she provided feedback on activities for the curriculum. In response to a survey question about her preservice training in writing, she described it as adequate.

Ann had 17 students in her classroom. She reported the demographics of her students as 65% as white, 24% as black, and 11% as other. Regarding gender, there were more girls (59%) than boys (41%).

Kate. Kate had 10 years of teaching experience. She held a bachelor's degree. Like Ann, Kate was part of a pilot program that helped shape the WIL-K curriculum that was adopted by the district. When reflecting on the survey about the quality of preparation she had received in her teacher certification program, she described it as poor; although she said that she felt confident about the training she had received while employed in this district.

Kate had 22 students in her classroom. Of those students, she reported 82% as white and 9% as black. She reported that 9% were either Hispanic or "other". Regarding gender, 45% were girls and 55% were boys.

Leigh. Leigh taught for two and a half years, although her teaching experience in this district was limited to one year. She held a bachelor's degree and had completed one semester of graduate work toward a degree to become a literacy specialist. Unlike the other participants, she did not receive the initial training on the writing curriculum; however, the district reading coach had provided support as she needed it.   On the survey, she described her preparation for teaching writing as poor.

Of the 23 children in Leigh's classroom, she reported that 70% were white, 17% were black, 4% were Asian, 4% were Hispanic, and she classified one student as an

ethnicity "other" than listed. In regard to gender, 56% were male and 44% were female.

She reported having three children who received speech and language services.

    Elaine. Elaine was in her third year of teaching. All of her experience was in

kindergarten and in this district. She held a bachelor's degree. She had received the

initial training on the curriculum and she considered her preparation of teaching writing

as very good.

    Elaine had a class of 21 children. She reported that 67% of her children were

white, 9% were black, 5% were Hispanic, and 19% were reported as "other." She

reported that she had children who were receiving speech and language services. She

also reported that one child who received English as a Second Language services.

Data Collection Methods

    To explore the orthographic supports that occur during formal writing instruction

and the ways that teachers support children's orthographic development, I used multiple

methods to collect data including observations, surveys, semi-structured interviews, and

the collection of artifacts. Collecting multiple forms of data allowed for triangulation of

the data, or in other words, more than one source of data was used to support my

conclusions (Lincoln & Guba, 1985). All sources of data assisted in answering both of

the research questions.

    Data for the case study included 16 hours of classroom observations, a survey, an

interview, and collection of artifacts.   The length of the case study was based on the

opportunity to observe four hours of each teacher's writing instruction over a period of

time; however, I decided to discontinue observations only after data saturation was

reached. Data saturation is a point at which no new or relevant themes are emerging from analyses of field notes (Miles, Huberman, & Saldaña, 2014).

The classroom observations occurred during the dedicated 30 minutes of formal writing instruction each day. For this study, I am defining formal writing time as the period designated specifically for writing. It is assumed that other writing opportunities may occur throughout the day but were not observed.

Direct observations. Observations allow for a close look at a real-world setting of the case. A source of data for this study included field notes derived from classroom observation of each participating teacher. Through observation, I closely examined the ways that teachers support children's orthographic development. For the 32 observations, I rotated through the classrooms of the four teachers, observing two teachers per day each week, for their 30-minute writing block. The data accounting log in Appendix D details the observation schedule conducted by week and day. The rotation allowed each teacher to be observed on a different day each week of the study. This rotation is important because it provided an opportunity for me to see the variety of instructional supports that may exist throughout the week.

During each observation, I kept careful field notes using my laptop computer. Field notes included teacher and students comments and interactions with one another, as well as descriptions of the context (e.g., whole group, small group, independent work), environment (e.g., writing materials are available, alphabet strips, word wall), the activities that are being done (e.g., modeled writing, bookmaking, poetry writing, use of technology for writing), and teacher-child behavior, interactions, and dialogue are related to literacy instruction (e.g., teacher points to a letter to support student, teacher

encourages invented spelling, teacher asks for explanation). Notes were collected about

behavior, interactions, and dialogue. Jottings are small notes taken during the collection

of field notes that serve to hold any thought that emerges during fieldwork and data

analysis; "jottings" were used to make analytic notes during the data collection period

(Miles, Huberman, & Saldaña, 2014, p. 93). In the reflective journal section, I added any

comments related to the observed events, expanded on any working hypotheses or

emerging theories. The template used for field note organization can be seen in

Appendix E. Field notes were typed on a laptop computer and saved using a password

protected file. The field notes were saved on a secure online storage (Google Drive)

approved by the Institutional Review Board. To protect the identity of participants,

teachers were referred to as TA, TB, TC, or TD (Teacher A, B, C, and D, respectively) in

the field notes and later replaced by pseudonyms (Ann, Kate, Leigh, and Elaine).

Students were referenced by numbers. These numbers were not used in reporting. They

were simply referred to as Child.

I also used an audio recorder to record each observation session. The purpose of

the audio recording was to fully capture the exact phrases teachers used during my

observations. Within 24 hours, field notes were converted to expanded write-ups. The

expanded write-ups include a refined version of the field notes and a summary of the

context, developing hypotheses, and emerging themes.

Every effort was made to remain an undisruptive external observer during

sessions in the classroom; however, when students approached me or needed assistance

with non-writing related tasks, I responded briefly yet appropriately. The participant-

observer role was avoided in an effort to allow for ample time to takes notes and observe.

Semi-structured interview/survey. For this case study, a survey was combined with a semi-structured clarifying interview. Surveys were delivered to each teacher participant at the beginning of the study. Teachers were asked to complete the survey by the end of the second week of the observation period. A survey was chosen as the best approach for gathering initial data because of a prior relationship with the site. Because I previously trained kindergarten teachers in the district and was the first author of the writing curriculum currently in use, conducting an initial face-to-face interview may have led to an increased amount of responses impacted by social desirability. Teachers may have had some insight into my assumptions and beliefs about writing, so they may have felt led to answer in a way that reflects what they think is the desired answer.

The purpose of the survey is to assist with triangulation of data. When asked about their classroom practices, teachers have a tendency to report their desired practices, rather than what is actually happening in the classroom (Dickinson & Tabors, 2001). Triangulating the survey data with observations and artifacts will allow for a more accurate picture of what is happening in the classroom.

The survey that I used for this case study is adapted from a survey used by Cutler and Graham (2008). This survey was not used in its original form because it was originally designed for Grades 1-3; therefore, I eliminated questions not relevant for kindergarten and changed the wording of some questions to make them clearer for my specific participants. Additionally, I eliminated some questions that were not specifically related to my research questions. After these revisions, I edited the ordering of some questions to increase the participants' ease of use. In the final version, there is a section of the survey that includes demographic questions such as, "How many years have you

taught?" and "Circle your highest level of education." There is also a section regarding teacher beliefs and writing instruction such as, "Circle the appropriate response for the following statements: I like to teach writing. I am effective at teaching writing." The third section addresses the plans for instruction and includes, "How much of your instructional time in writing involves small group instruction?" and "Please check which of the following writing activities your students will do this year." The fourth section is related to student practice variables, for example, "Circle how often your students engage in 'planning' before writing." Section 5 relates to possible scaffolds that the teacher may use such as, "Circle how often your students copy words, phrases, or sentences." The final section relates to teacher instruction variables, for example, "Circle how often you model writing for your students." The full survey can be found in Appendix F.

The initial survey was followed up by an in-person semi-structured clarifying interview. Questions about their responses to survey questions were used to confirm and get more information about the answers they selected. There were three topics within the semi-structured interview. The first was related to teacher instruction variables; for example, "In the survey, I asked about modeling writing for your students. Will you tell me more about what decisions you make when you are planning to model for students?" The second topic related to questions about student practice variables and scaffolds; for example, "Question 9 asks about individual conversations. How do you figure out how to respond to what a child says during an individual conversation about their writing?" The last topic was using assessment data to respond to individual student needs and included questions such as, "Please look at this student sample. If you were going to tell a student teacher about the needs of this student, what would you say?"

The teachers reported students' spelling and reading groups on the survey as part of the information that I asked the teacher to provide on the survey. Each teacher provided a list of students' names and their spelling and reading development levels. Names were removed from the list and substituted by related numbers. This information is necessary because I needed to be able to match the observed interactions or supports with the level of student. This process allowed me to know in what ways, if at all, that these supports differ according to students' existing orthographic knowledge. I included a copy of the semi-structured interview in Appendix G.

Artifacts. I collected artifacts throughout the observation period and used them to help with triangulation of the data. The artifacts included materials that the teacher used to support orthographic development. For example, to help student remember their idea and focus on the spelling of individual words, the teacher drew lines to represent each word of the sentence and I took photographs of this practice. Other artifacts included a modeled or shared writing chart, lesson plans, or a classroom display of writing. I recorded the collected artifact information on the data accounting log. This form, based on Miles & Huberman (1984) and found in Appendix D, includes a description of the artifact, the context in which the artifact was collected, the date the artifact was collected, analytic notes about the significance or importance of the document, and a brief summary of the content. All identifiers were removed from the artifacts that were collected.

Data accounting log. A data accounting log is a document that includes when and what types of data have been collected from each participant and site (Miles, Huberman, & Saldaña, 2014). The participants and sites are listed on the column

headings and the data forms were listed in the rows. Within each cell, I recorded the date of data collection. This process allowed for an at-a-glance look at the data collected and ensure all necessary data was collected. The Data Accounting Log can be found in Appendix D.

Summary of data collection methods. To answer the questions of this study, I collected data in the form of observations, surveys, interview, and artifacts. I reviewed and analyzed each source of data during and after the data collection period, so the case study's findings are based on a convergence of evidence and not relying on a single source of evidence. This convergence strengthens the internal validity of the study.

Data Analysis Methods

The data from these three sources were analyzed to consider what scaffolds teachers use to support orthographic development and how teachers may provide a range of supports to children with different degrees of orthographic knowledge. The process of data analysis occurred from the start of data collection; patterns, explanations, causal flows, and propositions were noted and refined along the way (Miles, Huberman, & Saldaña, 2014). The following sections will follow the next three streams of data analysis identified by Miles, Huberman, and Saldaña (2014): (1) data condensation, (2) data display, and (3) conclusions: drawing/verifying. Although they are presented in a linear fashion here, my analysis of data was both iterative and continuous.

Data condensation. Data condensation is the process of reviewing the collected sources of data and selecting, focusing, and extracting the relevant information that will be used to answer the research questions (Miles et al., 2014). This phase of data analysis

makes the analysis stronger because it focuses and organizes that data so that conclusions can be drawn and verified.

Completed survey data was entered into Excel. Descriptive information (e.g., years of experience, ethnicity), open-ended questions, and quantitative ratings were entered into individual cells. This organization was used for at-a-glance reference to the data when generating, confirming, or debunking assertions.

The interviews were transcribed using the recording and a word processor. The responses were grouped by question to look for similarities and differences. Analytic notes were recorded about hypotheses that emerged from these notes. The responses were also used to elicit, confirm, or debunk assertions about the study. The artifacts were reviewed and information about the context, date collected, analytic notes, and summary of the content was entered into an artifact log that was kept in an Excel file. All field notes were uploaded to Dedoose 7.5.14. Analytic notes and jottings were condensed into a Word document.

First cycle coding. During the initial phase of the data condensation period, I employed both deductive and inductive coding. Deductive coding refers to starting with an initial list of codes based on existing research, derived from the research questions, and hypotheses (Miles et al., 2014). A set of my initial deductive codes can be found in Appendix I. The set of developed start codes were related to the conceptual framework. Within the set of start codes, there are two proposed subsets of codes: code-related literacy instruction and scaffolds, and research-based practices. The code-related literacy instruction codes are directly related to the instruction focus section of the conceptual framework. These codes are specific to the types of phonological awareness and alphabet

knowledge support that the teacher may give to the child during writing instruction. They may include dialogue such as, "How many words are in this sentence?" which would be coded with the Sentence Segmentation (CR-PA-SS) code. An alphabet knowledge code may include any activity or interaction relating to the identification or production of a letter name or sound; for example, "You said /p/. What letter says /p/?" This interaction would be coded with the Alphabet Knowledge (CR-AK). The scaffolding codes are adapted from the codes used in Pentimonti's (2011) study. These codes, which are an example of the Vygotskian influence on this study, reflect the high or low-level supports teachers may provide to help students be successful with the task. An example of a low-support scaffold may be, "How did you know to write a *p* at the beginning of the words *puppy*?" This scaffold would be coded as Explaining/Reasoning (S-R). The last set of codes are Research-Based Practices. These codes are developed based on Gerde, Bingham, and Wasik's (2012) suggestions for best writing practices in the early childhood classroom. For example, encouraging invented spelling has been identified as a positive practice. A teacher may be observed saying, "Write the sounds you hear" or, "Good, you wrote the sounds you heard." This interaction would be coded as Encourages Invented Spelling (P-IS). I decided to not include these codes after I began analysis because I felt they were less pertinent to the research questions than I originally thought. Further, these interactions were captured in other scaffolding codes.

During the process of data analysis, new codes emerged and were added to the existing codes (inductive coding; Miles, et al., 2014). The process of using inductive coding allows for an openness of observing what is actually happening with the participants, rather than forcing them to fit into a predetermined set of codes.

As I did my first cycle coding, I came upon interactions that did not fit within my original coding scheme. I had been coding these as "other." During analysis, I wrote in my analytic journal, "I used the existing code set, but after applying it to the data, I found that 10 out of 31 codes were coded as 'other' scaffolds. I returned to the analytic notes and jottings for all observations and compared that to the original scaffolding resource: Ladders to Literacy: A Preschool Activity Book (O'Connor, Notari-Syverson, & Vadasy, 2005) and found several more codes to add to my existing list." After consulting with the peer debriefer, I expanded from my initial start codes (codes used in book reading) and expanded to all six larger areas of scaffolds (Open Ended Questioning, Providing Feedback, Cognitive Structuring, Holding in Memory, Task Regulation, and Instructing) that were used in *Ladders Into Literacy* (O'Connor et al., 2005). The codes also contained subcodes. All codes became part of a codebook, with definitions and examples that reflect the most recent set of codes (see Appendix J). Table 5 shows the codes that were developed after the first cycle of coding. It should be noted that Simultaneous Coding was used (Miles & Huberman, 1994); as each instance of scaffolding was coded, they were also tagged with the parent code of 'area of scaffold' and 'level of scaffold.' These codes were applied simultaneously because the codes were based on other research that had already nested the codes and they fit the data that I was analyzing.

Table 5

Scaffolding Strategies

Level of Scaffold	Area of Scaffold	Specific Scaffolding Strategy
High Supports	**Instructing**	Eliciting
		Direct Questioning
		Co-Participation
		Modeling
		Orienting
	Task Regulation	Making Concrete Choices
		Reducing Choices
Medium Supports	**Cognitive Structuring**	Contradictions
		Sequencing
	Holding In Memory	Summarizing and Reminders
Low Supports	**Open Ended Questioning**	Generalizing
	Providing Feedback	Acknowledgement and Informational Talk
		Encouragement
		Reasoning

As those new codes emerged, all existing data were analyzed using the new set of

codes. The entire corpus of data was read several times to allow for emerging themes

and also check coding. To ensure trustworthiness, the peer debriefer/auditor reviewed all codes and analysis procedures using the codebook and any changes were recorded in the analytic log. The analytic log is a table where any analytic work can be recorded; this table includes the specific data that was being used, the procedural steps of the analysis, the decision rules established, the analysis, operations, conclusions, and reflections (Miles, Huberman, & Saldaña, 2014).   A portion of the analytic log can be seen in Appendix K and an example of the reflection after analysis can be found in Appendix L.

Second cycle coding. The second cycle of coding included a process of grouping the first cycle codes into smaller numbers of codes and themes and from this process a second set of codes will emerge. Specifically, the process will allow for further condensation of large amounts of data into smaller units for analysis and the patterns that emerge during data collection will allow for field work that is even more focused (Miles, Huberman, & Saldaña, 2014).

Central to the second question was how these codes matched the children's needs for building orthographic knowledge. For this reason, after consulting with the peer debriefer, I decided to condense code each interaction as a match or not match. Criteria for match and mismatch were developed based on the research reviewed in Chapter 2. A full list of the criteria can be found in Appendix M. Coding matches and mismatches allowed for analysis to answer Question 2.

As in the data collection phase, jottings continued in this phase. Jottings have the potential to strengthen the coding because they allow initial reflections and commentary to be preserved. They also serve to keep the researcher alert and continuously thinking about ideas and the reactions that those ideas elicit.

Data Display and Drawing and Verifying Conclusions. The second and third step

of data analysis is data display and drawing and verifying conclusions. I used the

computer assisted data analysis software, Dedoose 7.5.14, to help display data. As data

for each teacher was entered, I began with a quick scan down columns and rows and

employed counting to note codes that were used frequently or not frequently (Miles &

Huberman, 2014). I used this information to help verify and revise hunches that came

about during data collection regarding which scaffolds that teacher used.

Based on the research questions, key variables, and the data, I used conceptually

clustered matrices to allow for the visualization of how two lists intersect. These

matrices were set up in rows and columns. The first matrix that I set up was designed to

help visualize the co-occurrence of scaffolds (e.g., high, medium, or low) for each

teacher. Then, I looked at the accompanying text for each level to understand the ways

that teachers used the specific scaffolding strategies. Next, I verified my conclusions by

checking them against my reflective journals, the interview notes, and survey results. To

further explore the use of scaffolds, I set up a matrix exploring the use of scaffolds (e.g.,

high, medium, or low) by teacher and another matrix that included a list of the context

(whole group, small group, and individual) and the co-occurrence of supports provided

(e.g., high, medium, or low). After counting was used, I looked closely at the text related

to each code to explore the ways that the teachers modified the use of specific scaffolding

strategies across contexts. Again, those conclusions were triangulated with other data

sources.

To address Question 2, I used Dedoose 7.5.14 to create and display several more

conceptually clustered matrices. I used hunches from the initial survey and interviews to

determine the appropriate matrices to create. One matrix that I used was looking at the children's writing achievement level and which level of support they were provided (e.g., high, medium, and low). This analysis allowed for conclusions to be drawn about how teachers used different scaffolds for different groups. A second matrix that allowed for analysis of the supports provided by including a type of support (e.g., high, medium, or low) and match or mismatch. A third matrix had columns listing the levels of development (e.g., emergent, early letter name, late letter name, within word pattern) and columns of support provided (e.g., high, medium, low). Lastly, I used two other matrices to examine the types of skills (e.g., phonological awareness, alphabet knowledge) that were used with each group of students (e.g., emergent, early letter name, late letter name, within word pattern) when the skill was matched and a similar matrix when the skill was not matched. In all cases, I began with counting, looked at the accompanying text, checked the results against the written-field notes and reflection journal, and triangulated the data with interview, survey data, and artifacts (Miles & Huberman, 2014).

Throughout the analysis process, I constantly revised my hypotheses to consider all new data and make the hypotheses "fit." This process of negative case analysis will serve to account for all outliers and allow for conclusions that consider all data to answer the questions. I will report any outliers in Chapter 4.

Summary of data analysis methods. The process of data analysis was iterative and occurred throughout and after the data collection phase. As data for each teacher was entered, I began applying start codes to the data. During this process, I realized it was necessary to add codes; I added these codes to the original set of start codes. Each time new codes were added, I recoded the existing data. After coding occurred, I reread the

corpus of data then started with a quick scan of the data while considering the research questions, data, and hunches to decide on conceptually clustered matrices to assist with the analysis. Field notes, analytic journal notes, interview data, survey, and artifacts were used to triangulate data during the drawing conclusions process. During data analysis, measures were taken to ensure trustworthiness. I will discuss these measures in the next section.

Trustworthiness

I employed the trustworthiness guidelines of Lincoln and Guba (1985) to bolster and evaluate the evidence of this study's credibility, transferability, dependability, and confirmability.

Credibility. Credibility in qualitative research is defined as establishing a confidence of 'truth' of the study's findings (Lincoln & Guba, 1985). In this study, I achieve credibility through triangulation of data collected in multiple ways. Triangulation of research methods is represented through observations, surveys, interview, and the collection of artifacts. Multiple sources of data ensure that the conclusions drawn come from the convergence of data rather than from a single source.

Negative case analysis is the process of revising the hypotheses with consideration to all "outliers" and exceptions. It can be used to increase credibility. As data was collected, I looked for confirming and disconfirming evidence for the assertions. When disconfirming evidence was found, I modified my assertions. I was careful to remain open-minded throughout the study and allowed the data to evolve throughout the case. Negative case analysis increases credibility because although it is not possible to entirely eliminate all exceptional cases, aiming for a reasonable number of cases that fit the

hypotheses provides substantial evidence of the study's credibility (Lincoln & Guba, 1985).

Credibility is also increased because I am fully disclosing any relationship with the teachers, district, and writing program, and involved a peer debriefer as an unbiased member of the research team. As an author of the writing curriculum that was developed in and used by the district of interest, it is critical that I fully disclose my history with the district and teachers so the readers are aware of the extent of the researcher-participant relationship. A reader may be concerned about this relationship and my ability to remove any bias I have or to report findings that may or may not be favorable to the curriculum. Given my history with the district and curriculum and to strengthen credibility, I used a peer debriefer. Credibility is increased when a peer debrierfer examines the data organization, coding, and assertions. A peer debriefer who is knowledgeable in the area of reading and spelling with primary students, but has no special interest in this study, was consulted. She read portions of report draft, reviewed feedback, coding, analytic memos, analytic log, and findings. Using a peer debriefer encourages questions that challenge the inherent biases that the researcher may bring to the study, clarifies the basis for interpretations, and allows for an opportunity to explore initial hypotheses that arise through the data collection process (Lincoln & Guba, 1985). Meeting with the peer debriefer provides an opportunity to defend those arising hypotheses. Written records of the encounters and conclusions were recorded in the analytic log.

Additionally, efforts were made to avoid bias stemming from research effects. To reduce the potential for this bias, I spent time at the sites before and after the observations. I arrived a little before each observation and helped the teacher with tasks

such as helping children put away their backpacks or get settled when returning from lunch and recess. When appropriate, I stayed after my observation to help her clean up or get prepared for her next lesson. Spending time at the site reduced the effect my presence had on the environment. I made my intentions as clear as possible by providing a disclosure of why the study was being conducted, what was being studied, how, and how the study results would be disseminated.

Transferability. Transferability in qualitative research is defined as showing that the findings can be applicable in alternative contexts (Lincoln & Guba, 1985). As is the nature of qualitative work, at the end of the study, the conclusions drawn only apply to this group of participants in the context of the study at this time period; however, in this study, I establish transferability by providing a thick description so another reader can draw conclusions about whether the findings could be applied to their context. Thick description includes a highly detailed description of the setting and of the findings. Further, excerpts of the rich description found in the field notes will be included in the findings of this study.

Dependability. Lincoln and Guba (1985) argue that there is no credibility without dependability. Dependability in qualitative research is defined as showing that findings are consistent and could be repeated (Lincoln & Guba, 1985). In this study, I achieve dependability through the use of overlapping methods and an inquiry audit.   As previously mentioned, several methods are used in this study.   Despite having only one researcher collect data, dependability is addressed through the use of an external auditor. The auditor is the same person as the peer debriefer. The external auditor holds a Ph.D. in reading education. She is an ideal auditor because of her extensive knowledge with

reading education and her experience with qualitative research. She is also familiar with the study but has no vested interest in it. The external audit took place after all data were collected and analysis was complete. I provided her with information about the study (i.e., research proposal) and provided enough detail to allow her to be familiar with the research questions, methods, the rationale for choices, conceptual framework, and findings and conclusions (i.e., a draft of the results and discussion). Further, I provided her with access to the raw data, field notes and any analytic memos/jottings (working hypotheses, concepts, hunches), matrices, instruments or protocols, analytic log, and the data accounting log. The external auditor confirmed the overall credibility of the study and did not express any major concerns or issues.

Lincoln and Guba (1985) also suggest the use of *stepwise replication*. Stepwise replication involves multiple researchers simultaneously gathering data for the same project and discussing findings. This process requires the use of several researchers; therefore, it is outside the scope of this study.

Confirmability. Confirmability is defined in qualitative research as establishing a degree of neutrality that efforts were taken to eliminate as much research bias as possible (Lincoln & Guba, 1985). I establish conformability through the use of previously discussed methods. Internal coherence and believability is strengthened by having a peer debriefer, keeping an analytic log, and triangulating the data.

Researcher as an Instrument

Given the qualitative nature of this study, the observations, selection of artifacts, and interviews that were selected may be affected by my presence and beliefs. My

beliefs and assumptions had the potential to influence the findings of this study, so for this reason, it is critical that a statement of my experience and assumptions are provided.

I have twelve years of formal experience in education. I hold degrees in elementary and reading education. I am certified as a reading specialist and have worked with students PreK-5. I have experience observing in classrooms and coaching teachers in literacy, specifically writing. I have provided professional development for many teachers on writing development and suggested appropriate writing instruction for students in kindergarten. Further, I have delivered professional development and classroom coaching on writing in this district. Additionally, I was the lead author on a kindergarten writing curriculum that was developed and currently implemented in the school district of interest. My education and experiences have led me to believe that there is a developmental progression of children's orthographic knowledge as exhibited in their spelling and reading development. I believe that this development can be enhanced by experiences with writing, specifically scaffolds that are targeted to their developmental needs.

Summary of Methodology

This qualitative research study took place over eight weeks in four kindergarten classrooms. The case study addressed two research questions pertaining to the supports that teachers provide to students during formal writing instruction.

1. In what ways, if at all, do kindergarten teachers use verbal scaffolds to support children's orthographic development during writing instruction?

2. In what ways, if at all, do these verbal scaffolds differ according to the teacher's perception of children's existing orthographic knowledge?

The data collection period included observations, surveys with clarifying interviews, and a collection of artifacts. I used the data analysis procedures proposed by Miles et al. (2014) and the iterative process included data condensation, data displaying, and drawing and verifying conclusions. Trustworthiness is critical; therefore, I addressed measures of trustworthiness (credibility, transferability, dependability, and confirmability).

CHAPTER FOUR

RESULTS

The goal of this study was to examine the ways in which kindergarten teachers use verbal scaffolds during writing instruction and the ways in which these verbal scaffolds differ. Specifically, I sought to address the following two research questions: In what ways, if at all, do kindergarten teachers use verbal scaffolds to support children's orthographic development during writing instruction? and In what ways, if at all, do these verbal scaffolds differ according to the teacher's perception of children's existing orthographic knowledge? In this study, I focused on: (a) teachers' use of six scaffolding strategies during writing time, (b) the contexts in which teachers used these scaffolds, (c) how teachers perceived children's orthographic differences, and (d) how these scaffolds are related to the teachers' perception of the children's orthographic needs. As noted in Chapter 2, for the purposes of this study, verbal scaffolds denote those scaffolds that are speech only and speech with gestures (Wang et al., 2001). Throughout this capstone, I use the broad term *scaffold* to represent verbal scaffolds.

During my 32 school visits, I observed 16 hours of writing instruction in four classrooms. I collected field notes during my visits. I also administered a brief survey and conducted one interview with each teacher. All names used in this capstone are pseudonyms. While collecting field notes for this case study, my observations were focused on the scaffolding strategies that teachers provided. I did not track children's conversations outside of the times that they directly communicated with the teacher.

During independent work time, the teachers would instruct a small group of children. I did not record field notes or information about child to child interactions or what they did after the teachers had moved on from them after an interaction with children. I focused solely on interactions between the teacher and the whole group, the teachers and the small group, and the teachers and any individual in the classroom.

I found that teachers used a variety of scaffolds, although they tended to focus more on high-support scaffolding strategies. Teachers recognized a difference in children's orthographic knowledge; however, they did not consistently use scaffolds that support what research suggests that children at this level of development need. These findings can be seen in Table 6.

Table 6

Findings from Data Analysis

Findings from Data Analysis	
Question 1: In what ways, if at all, do kindergarten teachers use verbal scaffolds to support children's orthographic development during writing instruction?	**Finding 1:** All four teachers regularly used a range of scaffolding strategies; however, teachers tended to use more high-support scaffolds than low-support scaffolds. **Finding 2:** Overall, teachers employed more scaffolds when children were writing independently. Moreover, they utilized scaffolds consistently across contexts with the exception of modeling.
Question 2: In what ways, if at all, do these verbal scaffolds differ according to the teacher's perception of children's existing orthographic knowledge?	**Finding 3:** Teachers recognized a difference in children's orthographic knowledge and that adjustments in scaffolds are needed to help children succeed. **Finding 4:** Teachers provided somewhat different scaffolds based on the perceived writing achievement level of the children. They provided scaffolds more closely aligned to children's orthographic needs when students were beginning to use invented spelling; however, they were less successful with scaffolds for the highest and lowest achieving groups in their class.

This chapter is organized as follows: I begin with a description of the writing block across these four classrooms and the four teachers. For each research question, I briefly describe the data collection and outline the main findings. I conclude the chapter by summarizing the four main findings of this study.

Designated Writing Time

It is important to begin this chapter with a description of the context for the writing instruction across these classrooms. All four teachers had a thirty-minute writing time scheduled each day and during that time, they all followed Writing Into Literacy-Kindergarten (WIL-K; Copp et al., 2015), a writing program that was provided by the district. Ann, Kate, and Elaine all stated that they used the program four school days each week, with handwriting practice filling in the rest of the time each week. Leigh reported that she used the program all five days of each week. All teachers reported that they divided their time between whole group, small group, and independent writing activities. This structure is prescribed by WIL-K. During my observations, all teachers utilized most of that half hour for writing instruction with the exception of days where there were interruptions (e.g., fire drill, lockdown). In the next section, I carefully describe the activities that occurred during the writing block.

Whole Group

Instruction always began in the whole group setting in all four classrooms; however, the length of time spent in whole group was not consistent each day. In most cases, it began on a large carpet where each child sat with legs crossed facing either a white board or a Smartboard where the teacher sat in front of them. Usually, teachers were reviewing a key idea or objective for the lesson (i.e., *Writers use words and*

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numbers), relating the lesson to a previously read book, and/or modeling writing. Even if only for a few minutes, all four teachers met with students in whole group during every visit that I made to the classroom. During her interview, Kate reflected on the role that whole group played in her writing instruction:

> I feel like a big part is the…whole group. At this stage, they need to see it modeled over and over again. Over and over. This is how I write, this is what your writing looks like, then providing small group instruction because everyone is not going to look the same, then providing many opportunities to write things that they can connect with. It is not so much- write about your vacation over the summer because not everyone went on a vacation over the summer. And another big thing is telling them that they are writers because that is huge… for handwriting, we just go over how to form letters. What is a letter and what is a picture. At first, it is very, very basic. If you don't start basic at the beginning of the year, they will be very overwhelmed. (Kate, Interview, September 26, 2016).

The structure for each classroom's whole group time was often as follows: the lesson began with a connection to a book, then an emphasis on the children being writers, followed by the teachers spending a portion of each lesson modeling writing. This description based from my field notes of Ann's classroom was typical of all four classrooms during whole group and captures the three aforementioned elements:

> *The kindergarten children are seated on a colorful rug facing a white board on an easel. Ann just finished reviewing the days of the week and weather. She shows the children a book that they read during a writing lesson on a previous day-* <u>*Ralph Tells a Story*</u>*. The story is about a boy who is struggling to write and how he solves his problem. She tells them, "Everyone here is a writer and we can write like Ralph is writing. Let's take a look at the chart over here that we were working on last week. Last week we talked about what do writers do? What are some things we wrote down? Do you remember what we wrote?"*
>
> *She asks children to look at chart that she has posted nearby. It says, "What Do Writers Do?". They reread the chart together as she pointed to each word.*
>
> *Ann: Who in the class are writers?*
> *Class: All of us.*
> *Ann: All of us are writers. WE can write anything. Why do we need to know how to write?*
> *Child: So we can read!*

Figure 9 shows an example of a typical *What Do Writers Do* chart. Teachers used charts

to keep track of the key ideas that they had taught during the week.
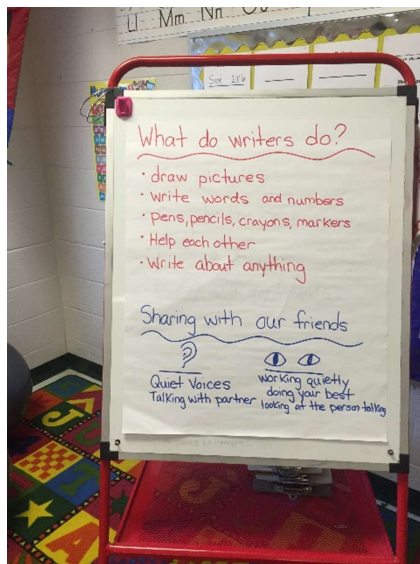

Figure 9. "What Do Writers Do?" chart. This figure illustrates the anchor chart present

in each room that listed the key ideas that the teacher had taught this year.

Most of the teachers were observed at some point encouraging children by

reminding them that they were writers and encouraging them to keep working on their

writing even if they were not spelling the words correctly. Ann said to her students,

> *Part of learning how to read is learning how to write! What does succeed mean?*
> *To grow up and do great things. Sometimes when you come into kindergarten,*
> *you really don't know how to write much and that is okay because we learn how*
> *to do it.*
> *Teachers used verbal scaffolds with and without gestures during whole group*
> *reading.* (Field Notes)

It was common to see teachers saying each word as they wrote or pointing to each word

as they reread what was written. Moreover, teachers modeled the use of a variety of

scaffolds during the whole group. Ann drew an apple to show how they would use the page to write. She then said, "I am going to write a sentence that says the apple is red. That is what I am going to write but you can write what you want to write about." She said each word as she wrote it. "I am going talk about the picture. The illustration is there so I have to talk about it. The apple." She said each word as she wrote it. "How do I spell red? It was in our song and poem? Remember? R-e-d red, r-e-d red." She wrote the words then said, "When I get to the end of the sentence, I am going to put a period." Ann read and touched each word. She asked children to read it with her and she touched each word again. In this instance, Ann also referred to a familiar song so children could help with writing the word.

Small Groups

All teachers reported and were observed utilizing small group instruction. They would typically work with small groups of four to six children two or three times per week. All small group instruction followed the sequence outlined by WIL-K: 1) children shared their writing from a previous day, 2) teacher modeled and collaborated with children to write a message or story, and 3) children wrote independently while the teacher provided feedback. The description below is from Leigh's classroom and reflects the general small group practices.

> *After the whole group gets settled working on their own pattern stories at their desks, Leigh calls the small group to her kidney shaped table at the back of the room. She pulls out papers from another day. She reminds students of the story* <u>Cats Colors</u>. *She reminds them that the author uses the pattern "is it" to write a book about her favorite colors then adding a detail for each sentence. She told them that she wanted to ask a few students to share. As each individual child is sharing, the others are looking at that child and listening to the child-teacher interaction.*

Leigh to Child 1: Where are you going to start reading each sentence? She begins tracking as he reads his work.
Leigh: Those are such good details and I love how you pointed from left to right and pointed to each word as you read. (Child 2 starts reading.)
Leigh: Where does this sentence start? (Points to the left.)
Child 2 reads his sentence and Leigh replies, I love how you used the beginning sound on that word /r/ed because red starts with what sound?
Children: R
Leigh: The /r/ sound which is what letter?
Children: R
Leigh: Today we are going to write a story together. We are going to write about our favorite food. First, we need a title that will tell the readers about what we will write.
Child 3: Our Favorite Food
Leigh: Good title. How many words is that? Clap it with me. Everyone says the words and claps. How many words is that?
Children: 3
Leigh continues the process of modeling and engaging children as she writes the title. Then they begin writing their ideas about their favorite foods.
Leigh: Can I start writing now? Yes, I can   I can write I.
Child 4: It's just one letter.
Leigh: That's right. That's the cool thing about I.. When I think of that word like, I listen for the first sound that I hear. What's the first sound that I hear? (no response)
Leigh to Child 4: What's the first sound you hear? /l/
Children: l Teacher writes lik.
Leigh: I need to make sure I have that /l/ sound down.
I want you to focus on the first sound. What is the first sound you hear? Pizza, pizza?
Child 5: p

Teacher writes pizza. They decide to write a second sentence. They follow the same procedure of clapping and counting the words. Leigh draws a line for each word of the sentences. Like before, she comments that some of the words are longer than others. This time, she asks Child 4 to help. They continue writing. Leigh asks another student to help write a third sentence on the chart. She rereads the sentences and then they line up for their PE class. (Field Notes)

Figure 10 shows the final product of their small group writing.
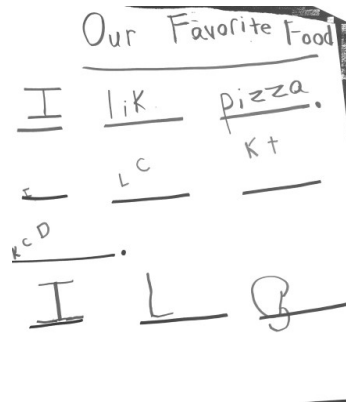
Figure 10. "Our favorite food" small group writing. This figure provides an example of the writing product from a small group writing meeting.

Although all four classrooms were similar in this routine, the content and instruction were not always the same for each group of children. In the previous example, the children collaboratively wrote the message after the teacher modeled the procedure. Leigh focused on the idea of writing from left to right, but also provided a high level of support so children could write at least a beginning sound for each word. In other cases, the teacher would move from a modeled writing to having children each work on their own writing while she was providing guidance to students. After a shorter modeled or interactive writing session, each child would begin writing his own message and the teacher would provide individual support. Another example of the differentiation of activities between groups is demonstrated in the following excerpt describing individual writing during small group in Kate's classroom. In this excerpt from my field notes, Kate works with children as they write messages similar to what Leigh had her group work on as an interactive writing piece. She provides individual support to children so they can write the beginning sound for each word.

> *Kate to Child 1: How are we going to write a capital I? (Child 1 wrote it on his white board.)*

Kate: Good, good, now what will we do next? Remember we are going to put a
space. What are we going to put for like? (Child 1 wrote a T, then erased it.)
Kate: But what do we hear in like? /l/ /l/ l/
Child 1: L. (Child 1 wrote an L.)
Kate: What else do you hear?
Child 1: A?
Kate: Can I write some lines for you? (The teacher wrote one line for each word
and said each word as she wrote.) Did you say run with William? Is that your
sentence? I like to run with William. Let's do "to" right there. What do you hear
at the beginning of to /t/ /t/ /t/?
Child 1: T
Kate: T. Write it down.
Kate then moved to other children to provide support for their writing.

While teachers were working on small group instruction, the other children were

working on independent writing activities. Those activities will be described in the next

section.

Independent Writing

For some of the days in the week, the teachers instructed small groups while other

students worked independently, on other days, the teachers rotated through the classroom

while children were working on independent writing. The sequence during independent

writing would typically include children independently writing with the teacher stopping

to work with several children to provide individual scaffolds to help children get their

message on paper. The independent writing activity was usually an extension of the

whole group writing and followed the same sequence. For example, during one

observation, children were tasked with writing words to accompany pictures of the story

of the *Three Little Pigs*. The activities were similar across all four classrooms. Leigh

described her independent writing activities by saying:

> I always try to make sure they always have something that they can be writing
> about. The independent work for that day, some other activity, write about a
> magazine picture. They can flip their picture to the back and write or draw on the

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back. I want to make sure they are dedicating that time to writing something (Interview, September 27, 2016).

I noted that when teachers rotated through the room during independent writing, their interactions focused heavily on children's spelling. Teachers would interact with many children during independent writing and often one conversation would abruptly end as she was called away by another child who needed support. This can be seen in the following description of the independent writing time. The following description is from my field notes when observing Kate's class, but the excerpt is reflective of the sequence of instruction that occurred during independent writing across all classrooms.

> *Kate walked around the room helping students. She stopped at Child 1. He told her his idea. Kate: Can you sound it out right there? Why did you write down an s?*
> *Child 1: No response.*
> *Kate: What did you hear? /s/? Very good. You heard a S. That's why you wrote down an S. Good job, keep going. What else do you hear? Sound out what you hear. Think about your sentence. Remember, how I counted my words? Go back and do that.*
> *She continues around the room helping other children.*
> *Kate finished the lesson by having a few children share their writing with the class.*

Summary of Designated Writing Time

The teachers in this study followed the WIL-K curriculum during their thirty minutes of instruction each day. All four teachers provided whole group and small group instruction. They also used independent writing time as an opportunity for children to practice concepts they were taught during the whole and small group time. As can be seen in the classroom descriptions, the teachers used scaffolding strategies across all three contexts. In the next section, I describe the scaffolding strategies that were used by all four teachers.

Use of Scaffolding Strategies

To address Research Question 1 regarding the ways, if any, that kindergarten teachers use verbal scaffolds to support orthographic development, I analyzed my data for which of the six scaffolding strategies were used by the teachers during writing time, in which contexts these strategies were used, and how the use changed across these contexts. This data analyses resulted in four main findings: 1) All four teachers regularly used a range of scaffolding strategies; however, teachers tended to use more high-support scaffolds than low-support scaffolds. 2) Overall, teachers employed more scaffolds when children were writing independently. Moreover, they utilized scaffolds consistently across contexts with the exception of modeling. In the next section, I further describe these findings.

Finding 1: Varied Use of Scaffolding Strategies

In this section I address the first finding regarding my first research question concerning the ways in which kindergarten teachers use verbal scaffolds during writing instruction to support children's development of orthographic knowledge. I recorded an average of 18 instances of scaffolding per observation and then analyzed the data to identify which of the six scaffolding strategies were utilized used during each teacher's designated writing time.

As I was formally coding the data, I realized that all four teachers used a wide range of verbal scaffolds. When I began my coding, I wrote in my reflective journal:

> *I quickly realized that the set of codes that I started with will not be sufficient. There are so many scaffolds that don't fit with the start codes. I went back to Ladders to Literacy and spent some time thinking about how their coding strategies would fit with what I am seeing. Most of the added codes were high supports and a few were low or medium.*

Therefore, I expanded the six codes to include 14 sub codes to help organize the wide range of codes used. These sub codes categorized low, medium, and high- support scaffolding strategies and are detailed in Appendix J.

The data showed the variety of scaffolds that the teachers provided over the course of a four-week period and demonstrated that these teachers recognized the need for a range of scaffolds. During the interview process, all four teachers discussed the range of supports they gave to children and they all mentioned the diverse needs in their classroom. When asked during the interview how they responded to a child who does not know how to spell a word, Ann's response demonstrated that the teachers intentionally utilized a range of scaffolds and was similar to the answers of the three other teachers.

> For some it is just a quick reminder of "use your sounds" because some of them do know the letters and the sounds they make and I have to say "use your sounds" because some of them are still new at realizing that the letters are what makes the sounds so instead of using your letters, I would say use your sounds. So that is some of the key words that I have noticed works for them. Also, asking them "what do you hear?" Saying that word slowly for them, you know, if it is the word cat, saying /c/ /c/ /c/. Typically for my middle and low group. My middle group is a range of high and low. For some of them, I need to point out the initial sound. Also, on their name tags they have pictures to go with the letters, so they have a little beginning sound helper there. You know, kind of pointing it along. (Ann, Interview, September 26, 2016)

Although Ann did not specifically call these low, medium, or high-support scaffolding strategies, she, along with the other teachers, identified that they used a range of strategies for the children in their classroom. The four teachers' choices for scaffolds are displayed in Table 7. Each teacher is listed along with the number and percentage of their total scaffolds that fall under each category.

Table 7

Scaffolds Used By Teachers

	High Supports	**Medium Supports**	**Low Supports**
Ann	86 (52%)	21 (13%)	59 (35%)
Kate	97 (55%)	36 (21%)	42 (24%)
Leigh	51 (73%)	9 (13%)	10 (14%)
Elaine	114 (72%)	34 (21%)	11 (7%)

In the next three sections, I define and discuss the low, medium, and high support scaffolds that were employed by the teachers.

Low supports. Low-support scaffolds are strategies in which the task requires a high level of demand for the child while the teacher scaffold support is low. Examples of the low-support scaffolding strategies that I observed usually related to the teacher providing feedback on the child's work. In total, low-support scaffolding strategies were used about four times per lesson and these strategies made up about 20 % of the total scaffolding strategies used with 122 instances of low-support strategies recorded during my observations.

Providing feedback. Analyses of the data demonstrated that teachers overwhelmingly utilized the low-support scaffold of *providing feedback* with the children. Providing feedback is a low-support scaffolding strategy because the teacher provides a comment that encourages the child to continue with their current work or asks them to explain their work. Across classrooms, providing feedback was observed 88% of the time when a low support scaffold was employed. On average, teachers provided

feedback to children about three times per lesson. I observed at least one instance of a teacher providing feedback in all but three observations. Of the scaffolds that were coded as providing feedback, they most commonly used *acknowledgment and informational talk, encouragement,* and *reasoning.*

Acknowledgement and informational talk. Teachers relied about half of the time on a subcategory of providing feedback: acknowledgment and informational talk. During this type of interaction, teachers acknowledged the child's writing attempts by making appropriate comments that may extend learning or describe the child's action. Often, this included a positive affirmation, but not always. For example: *Ann: What sounds do you have in watermelon? You have W A D R M L N You have a lot of letters because watermelon is a very long word. Good job.* This feedback is consistent with the definition of acknowledgement and informational talk because the teacher describes the child's marks, "You have WADRMLN," then she comments with "you have a lot of letters because watermelon is a very long word." Another example of the use of positive affirmation and an informative comment is when Ann asked a child, "What did you write?" and the child replied, "I ate an apple for breakfast." Ann responded, "Good and there is your A for apple." In both cases, the feedback is focused on the child and the sounds heard in a word. For Leigh, I recorded very few low-support strategies across all contexts; however, of those recorded, acknowledgment and informational talk was the one she most commonly used (Observations 3.3, 3.4, 3.5).

Encouragement. The other main way teachers provided feedback was with less specific praise that I coded as *encouragement.* In these examples, the teacher offered verbal encouragement and praise to boost the child's confidence and sense of self-

competence. These types of scaffolds made up 35% of the providing feedback

scaffolding strategies. Phrases such as "good job" or "good, keep going" were coded as

encouragement. For example, in Kate's classroom, when one of her students is

noticeably upset, she attempts to use encouragement to help a child who was struggling

to write before using other supports.

> *Child 1: I need help with all of this.*
> *Kate: Reread what you have. His daddy is…what are you saying? Helping?*
> *Good job, keep going. That looks very nice.* Child 1 becomes noticeably upset.
> *That looks great.*
> *Child 1: I can't do it.*
> *Kate: Don't say can't. What sound are you trying to figure out? What's the*
> *word?*
> *Child 1: I am trying but I can't remember it.*

Another way that encouragement was employed by all four teachers was when

children were not working on the task. All teachers listed encouragement or praise as one

of the top ways that they helped children who were having trouble with a writing task or

needed motivation. This situation can be seen in the next excerpt from Ann's classroom

as she works with a child who does not want to write:

> *Ann: You are a smart boy and I know you can write a full sentence. What do you*
> *want to write about? What color is your apple?*
> *Child 1: Green*
> *Ann: Can you write about the green apple. My apple is green?   Color your*
> *apple green and I want you to write the sentence my apple is green.*

Based on interviews and conversations, it appears that the teachers utilized

encouragement for several reasons. One reason is because of their experience with

kindergarteners becoming frustrated by writing tasks. During the interview and on the

survey, Leigh emphasized the importance of utilizing encouragement:

> Praise is so important for the lowest group. They are constantly telling me they
> can't do it. Some of them are just there and stare at you so I just tell them because
> you don't want them to feel discouraged. There are so many who don't even

know the letters. So praise is so important, even if they can get an idea and communicate that idea to encourage them to take baby steps. It is so easy to get frustrated. Even the ones in the highest group…They want to spell it perfectly.   I don't want to give them the perfect spelling of the words. I want them to use their own thinking process to figure those words out. They need to go through the process on their own when they are spelling words. They will not always have someone around to write with them. They need to think through the process of "is this the right way to spell the word". Giving them the spelling is not helping them process the information at all. (Leigh, September 27, 2016)

Another reason the teachers focused on praise may have been to encourage invented spelling. Kate expressed this sentiment during our interview. She said that she views encouragement as one of the most important ways a kindergarten teacher can support a writer. She emphasized the importance of telling children that "this is what you can do" when they are discouraged because they can't write like she does (Kate, Interview, September 26, 2016). Ann gave a similar response:

Let them know that whatever their response is acceptable. I will accept anything that they write within reason. Anything is good. I do that for encouragement. If they feel discouraged, they are less likely to enjoy it and are less likely to want to do it again. (Ann, Interview, September 26, 2016)

Ann showed her use of this low-support scaffolding strategy by encouraging the child to write at the level that they had written at on a previous day. She said,

You spelled a word yesterday with a lot of letters and you spelled it right! You spelled the word box. You knew all three letters and made the word box. So I know you can write some letters to make words. So I shouldn't see scribbles because I know you can do it. (Ann, Interview, September 26, 2016)

At other times, teachers would praise students for getting some of the letters in a word written, even if the spelling was not correct. One of Ann's students wanted to write a child's name in the class. Ann responded,

You have the B, R, and E. Keep on with your story. Don't get hung up on her name. Move on to the rest of the story…. You don't have to worry about it being exactly right. Go ahead with the rest of your story. (Field Notes)

When I asked Elaine why praise was so important she also emphasized the importance of praising any mark that they made, even when the child may realize that they are not writing with correct spelling:

> As a teacher, you think about previous schooling. If you ever have those teachers that are like "no, that's wrong" then you really just don't want to do it. So I just want to praise them. Even if they just get a letter down. Encourage even a scribbler to keep him moving on. Even though I think he realized that he wasn't doing a great thing, it encourages them to be a writer. The one thing I really love about our writing program is that from Day 1 it reminds them that you are a writer so I think it is important to keep them encouraged to keep them encouraged and wanting to do it because if you don't want to do something then you aren't going to do it. (Elaine, Interview, September 27, 2016)

Reasoning. In addition to acknowledgement and informational talk, about 11% of the providing feedback scaffolds were teachers provided support through *reasoning* (Observations 1.5, 1.7, 2.1, 2.5, 2.7, 2.8, 3.7, 3.8, 4.4, 4.7). In these situations, the teachers were asking a child to explain his or her work. Asking children to provide reasoning for their invented spellings is the low-support strategy that would demand the highest level of input from the child because he or she would need to explain their thinking. This strategy was used the least among teachers; I only observed 12 instances across 32 visits. For example, an excerpt from Leigh's room shows how teachers used reasoning. Leigh said, "So, can you write Pink is Mother's Day? Why did you write that letter down?" She points to the p. The child responds, "Because it starts with p." Leigh asks, "What does? What word?" The child says, "Pink."

Teachers used low-support strategies across contexts during writing time. In conclusion, it appears that when teachers do use low supports, they primarily do so to encourage children in their work and to keep them motivated.

Medium supports. Medium-support scaffolding strategies are those that require a medium level of demand for the child and a medium level of support from the teacher. Teachers only used about four medium support scaffolds per observation and the medium supports made up about 18% of the total scaffolds used among all teachers. Of the medium-support scaffolding strategies, I observed *cognitive structuring*. The range of medium scaffolds were limited. I primarily observed cognitive structuring.

Cognitive Structuring. Cognitive structuring is a scaffolding strategy in which the teacher provides structure for the child's thinking and facilitates problem solving skills (O'Connor et al., 2005). In fact, 84% of the scaffolds coded as medium supports were considered as cognitive structuring (about three instances per observation). In these four classrooms, these primarily came in the form of *sequencing*. When scaffolding through sequencing, the teacher provided verbal support to help the child determine where to start in the word or sentence. The example below illustrates how Ann used sequencing to support learning. She provided a starting point for the child to focus him or her on where to start writing.

> *Ann: What's wrong?*
> *Child: I don't know how to spell it.*
> *Ann: Do you think everyone knows how to spell everything right? No, because we are just learning. I thought you were going to write about this character? Is it Charmeleon. Is that how you say it? Alright, what were the first two letters, I will get you started then I want you to finish it. Ch, ch. A c and a h. What else do you hear?*
> This excerpt is reflective of the type of dialogue that occurred when the

sequencing scaffold was utilized. Across all contexts, the teachers used phrases such as "Do you hear anything else?", "Do you hear other sounds?", "What do you hear at the beginning?", or "What do you hear at the end?" to help the child focus on the next phoneme. For example, when helping a child spell *kid,* Kate said, "What sound are you

trying to figure out? What do you hear in kid? What sound is at the end?" The child

responded, "d."

Occasionally, teachers directed children to think about the next word they would

write by saying "what is the next word?" This is illustrated in the excerpt from Leigh's

classroom:

> *Leigh: Now, let's read what we have so far.*
> *Child: I like*
> *Leigh: Just like when you read, go from left to write. Now you wrote the word to,*
> *your next word is what?*
> *Child: No response*
> *Leigh: l like to…. (touching each word)*
> *Child: play.*
> *Leigh: What do you need between this words and the next?*
> *Child: Space.*
> *Leigh: Good. A space, a space? Right? Now sound it out just like you did the*
> *"to".*

Further analyses of the data demonstrated that the teachers most commonly used this

scaffold at the phoneme level (e.g., what is the first sound?) rather than the word level

(e.g., "what is then next word?").

In short, teachers used medium supports in low quantities but in the same way

across all contexts. They tended to rely on sequencing as a way to support children in

their representation of words.

High Supports. Teachers used high-support scaffolding strategies more than

other types of strategies. This trend was consistent across all teachers. High-support

scaffolding strategies are those that require a high level of support and a low level of

effort for the child. The majority of the scaffolds were instructing strategies (i.e.,

eliciting, direct questioning, co-participation, modeling, and orienting). As I examined

the teachers' interactions with children and their reports on the survey and interviews, I

discovered that although they appeared to try many different scaffolds, they relied on

high-support scaffolding strategies most often. High-support strategies made up 62% of the use of scaffolds across all contexts during my observations (about 12 instances per observation). Within these high-support strategies, I identified two larger sub-categories that teachers used: *Instructing and Task Regulation.* There were more instructing strategies than task regulation, 88% and 12% respectively.

   Instructing*.* Instructing is a group of scaffolds that included teacher providing direct assistance in a highly-structured manner. Coding for instructing strategies included *modeling, co-participation, direct questioning, eliciting,* and *orienting* (O'Conner et al., 2005). Early in my reflection journal, I recorded that some of the instructing scaffolds were becoming a theme. I wrote in my reflective journal, "Many of the students in this group were unable to form the letters so she provided support through modeling and then having the child copy it. This is emerging as a theme!" and later on September 9, "I am seeing a heavy prevalence of modeling or co-participating as a scaffold." These hunches were supported by further data analyses from counting occurrences in my coded field notes as well as the teacher interviews and surveys.

   Modeling. In this study, *modeling* is any instance where the teacher provided a model of writing for the child (e.g., writes words for the child to copy, names letters, rereads the words for the child while pointing, takes dictation). The child is not expected to repeat the answer. All four teachers in the study used modeling as one of the top scaffolding strategies that they relied with approximately four instances per lesson in each classroom, most often during whole or small group. During small group, the types of modeling observed were commonly when the teacher wrote a letter, word, or sentence for the child to copy. For example, Kate said, "What are you drawing?" The child

responded, "sun." Kate offered, "Let's sound it out. /s/ that makes an *s*. Do you know how to make an *s*?" When the child said he did not know how to make an *s,* Kate makes an *s* for the child to copy and the child copies it. During whole group, the teacher would often model holding up one finger for each word as she prepared to write the sentence for the group or by saying each word as she wrote it. An example of this is evident in my field notes: *Leigh said each word as she wrote it- 'Red is a shiny apple.' She says each word as she writes it. 'Pink is fluffy cotton candy.' She touched each word as she rereads it to the class.* Elaine and Ann also utilized modeling during independent writing time. Kate was never observed using modeling during independent writing; although she did use it during small and whole group.

Modeled writing was specified by the mandated district curriculum, WIL-K (Copp et al., 2015) during whole and small group instruction so it is not surprising that teachers frequently used scaffolding strategies while modeling their thinking and writing during these times. Also, given the diverse needs of the classroom, it is possible that teachers may feel the need to provide a high-support scaffold to keep all children well supported throughout the lesson, even when some of the children did not need the support. Elaine alludes to this idea during our interview. I asked her how she decided what to model for children. She said:

> Mainly I stop if there is something that we are putting together and it is the beginning sound. You might hear some of them shout out- I also hear this but we usually just do the beginning sound to help out the ones that are the 'letterlikes' (children writing with letters and letter-like forms) writing down letters that have something to do with the word (Elaine, Interview, September 27, 2016).

One reason that teachers may also rely on these high-support scaffolding strategies is to avoid frustration for the children. In several instances, I observed teachers writing

with invented spellings. An example can be seen in Figure 10 when the teacher modeled

writing like as LIK. Elaine addressed this occurrence during the interview. She said, "As

you saw on one day, I added in a part where I modeled scribbling and that was in

response to a day where I saw some of them getting frustrated the day before" (Elaine,

Interview, September 27, 2016). During my observation of this lesson, Elaine was

writing on lined paper while using a document projector so the children could see her

work. Figure 11 shows her model for children. In the excerpt that follows, Elaine

models using strategies to produce a spelling but she also models writing the incorrect

letter or scribbles and provides support for children who may still be at this stage of

development.
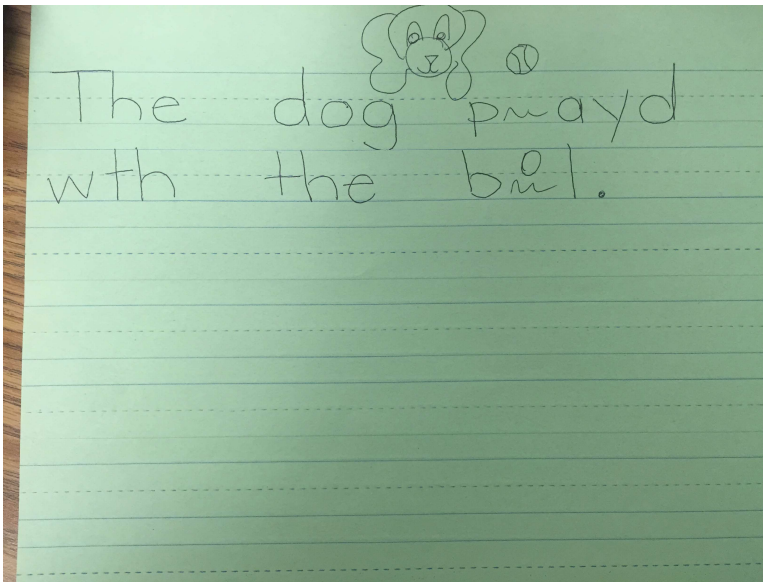
Figure 11. Modeling invented spelling. This figure illustrates one teacher's model of

invented spelling.

> *Elaine tells students that she will show an example of how to do pictures and*
> *write. She draws a picture of a dog and a ball.*
> *Elaine: Remember how to count your words. I might say 'The dog played with the*
> *ball' so I might count my words. What do I hear in 'the?' Just like in Thursday?*
> *Children: TH*

Elaine: Good, th. So, I am counting my words. I will put a capital t for my sentence. /d/ dog Let's pretend I don't know how to spell the words. Say I am sitting there and I just don't know how to spell the words. I sit there and sound it out and I hear /d/ /d/ /d/ dog. What letter do you hear?
Children: D
Elaine: D. I know some of you might know how to spell the word and that is great, but then I might listen for the /o/ and I may not know what to put so I might just guess an i. That's okay! At least you are writing some letters. Eventually you might get to the place where you have it correct, but at least you are writing some letters. It may not be right but you are putting down something.
When we say the o sound /d/ /o/ what shape does your lips make? What is the shape of my mouth?
Children: /o/ /o/
Elaine: Trace your lips.
Children: O!
Elaine: Yes. /d/ /o/ /g/.
Children: G
Elaine: The dog played /p/ /p/
Children: P
Elaine: We are just going to pretend that I don't know any of the letters, that might be all I wrote because we are just learning or I might write down a scribble and that is okay too. Right? And are you eventually going to know how to sound out your words?
Children: Yes
Elaine: Yes, you are eventually going to know how to sound it out. (She points to scribble.) Is it better to have something like this than nothing? Yes because you can come up with your story.

In this excerpt from my field notes, Elaine modeled counting her words, segmenting the word, and finally producing a mark to represent the word. In this case, she specifically used modeling of invented spelling to provide encouragement for those who are not yet spelling with letters perhaps so they did not feel badly about not writing with conventional spelling. In this excerpt, there is also evidence of what I will explain as *direct questioning* in a later section.

Co-participation. Modeling is a scaffold in which the teacher is doing all of the work for the child to observe; however, *co-participating* is a scaffolding strategy where the child and the teacher do the work together or the teacher facilitates two children

working together during the task. When the child and the teacher were co-participating,

it was typically an encounter where the child was mimicking the teachers' actions. The

four teachers used phrases such as "let's," "together," "help me," or "ask a friend" to

elicit the co-participation of children. For example, in the follow excerpt, Leigh is asking

children to work with her to segment the words in a sentence.

> *Leigh: Every time you say a word, I want you to clap your hands. (They all clapped and said the words of the sentence.)*
> *Leigh: Now, every time we say a word, I want you to put up one finger. (They put up one finger as they said each word.) How many fingers is that?*
> *Children: 4*
> *Leigh: So how many words is that?*
> *Children: 4.*
> *Leigh: I want to say it one more time because when I am writing I want to get that sentence in my mind.*

At other times, the teachers encouraged children to work together to produce a

written message. When Elaine was working with a child in her classroom during

independent writing time, another child came to her and asked for help writing a word.

Elaine replied, "You may ask your friend at your table. You can say "I need help with

the /t/ sound." When analyzing the use of co-participating across all teachers, 22 of the

58 co-participating excerpts included the strategy of asking children to put up one finger

or clap for each word in a sentence with the teacher. This strategy often led into another

high-support scaffolding strategy called *making more concrete* that is discussed in an

upcoming section.

Elaine encouraged co-participation among peers. During the interview, she said,

"They need that reminder everyday: Is this an appropriate conversation? Is it okay to ask

a friend to help you with a word that you are struggling with?" (Interview, Elaine,

September 27, 2016). Early in the observation period on September 9, I noted in my

reflective journal: "She modeled and repeated the strategy of clapping while segmenting the sentence, putting up one finger while segmenting the sentence, then drawing a line for each word." This type of support made up about 50 % of the use of co-participating excerpts from Elaine's class. Elaine began many of the independent writing periods by encouraging children to ask each other when they did not know how to spell a word. Further, Elaine used co-participation during a series of scaffolds supporting the child with spelling *the* and thinking of the letter that make the sound /th/. She starts with orienting the child to another word that is on their calendar, but when that is unsuccessful, she tries a different high-support scaffold of co-participation.

> *Elaine: like in Thursday. (Child 1 looks confused.)*
> *Elaine: Ask your neighbor, say, can you help me with /th/?*
> *Child 2: T-h, no c-h*
> *Elaine: You had it right the first time. Now say thank you.*
> *Child 1: Thank you.*
> *Elaine: That is a proper conversation during writing time. Whatcha think?*

It is important to note that I did observe conversations about orthography happening between children in other classrooms; however, unless they were directed by the teacher I did not record those conversations. Although I did not record other teachers directing these conversations, I did observe some conversations in which children provided support for each other. The presence of these conversations suggest that other teachers may encourage or utilize this support when I was not present in the classroom.

At other times, co-participating included having children read with the teacher as she was rereading work or encouraging peers to work together. Again, Elaine used this scaffold most often of all the teachers in this group and was most direct in discussing her expectations with students about their co-participation during writing.

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Co-participation may be used to help sustain independent writing when teachers are busy with a small group or when they are busy supporting individual writers. In the following excerpt, Elaine specifies that co-participation is helpful for students who "know what they are doing."

> The ones that are in the middle group and high group- I know they know how to break it down so I want them to do it so we do head and shoulders- touch different parts so they get each letter. For the low, the ones that don't have much letters or letter sounds, I want to model it and have them do it. They also have an alphabet chart so they can track them. I also have friends that I know what they are doing so I have them work together (Elaine, Interview, September 27, 2016).

Direct questioning. Early in my observations, I recognized the prevalence of the direct questioning scaffolding strategy. For direct questioning scaffolds, the teacher directed the child to a specific action or response by asking a closed question (e.g., What is the letter that makes /m/?). The teachers would often begin with a low-support scaffolding strategy such as *"what do you hear next?"* or *"what do you hear first?"*; however, they did not wait for the student to reply, but immediately offered the sound. For example, *Kate: What else do you hear? Swings. Child shrugs shoulders. Okay, what else do you hear. Swings /s/. What letter is that?* Often, the teachers would not follow up the direct questioning with the phrase "what letter is that?" For example, in the following excerpt from Elaine's classroom, she provides the letter for multiple letters in the word turtle. Each time, she segments the sound and the child produces the corresponding letter:

> *Elaine: Good. Here is your t right here. She points to the t on his word study sheet. Tu/rrrr/*
> *Child: R (Elaine writes a r for him to copy.)*
> *Elaine: Tur /t/ (She elongates the /t/.)*
> *Child: T. He writes an r.*

Elaine: You told me a t but you wrote an r. A t like you wrote at the beginning. She points to the t at the beginning of the word. Now turt /l/ (She elongates the /l/.)
Child: l
Elaine: It is in your name. (Child writes l.) T-R-T-L, that spells turtle.

I decided to code any instance when the teacher provided the sound and the child replied with the letter as a direct question. These questions were generally related to asking the child to identify a letter that is made by that sound. This type of exchange made up all but two of the direct questioning scaffolds. Toward the end of my observation period, I wrote in my reflective journal:

> There is heavy scaffolding that is appearing to be more of the kids identifying the letter that matches the sound. I am wondering if this is becoming more of a letter-sound practice than actually supporting the kids coming up with the sound on their own. I wonder if it is necessary and how it would look if Ann gave the child the option to find the sound first, then helped them match that sound with the letter (Reflective Journal, September 27, 2016).

Direct questioning was often embedded in a sequence of scaffolds. In some cases, the teacher would start out with a lower-support scaffolding strategy that required the child to do more of the work and then use direct questioning when the child was unsuccessful, which provided a higher level of assistance for the child. The excerpt below shows how Ann used a medium-support strategy of sequencing and then moved to the high-support strategy of direct questioning.

Ann: What do you think little starts with? /l/ /l/ little
Child: It is in our poem.
Ann: Yes, it was in our poem. Do you remember what it starts with?
Child recites poem Twinkle Twinkle Little Star.
Child: Is it an i?
Ann: I is in it. /l/ /l/
Child: L!

It seems logical that teachers would use this method of providing a lower level of support and then increasing the support to help the child be successful; however, this was

not consistent across all situations. Oddly, in other cases, the direct questioning would follow an instance where the child was successful with a lower support scaffold. The above type of direct questioning targeting letter-sound correspondence was present across all classrooms and across all levels of development. The focus seemed to be on having the child write the correct letter as opposed to providing scaffolds so that the child could work through the steps of segmenting the sound, matching the sound to a letter, and making that mark on the page. One specific instance with Elaine and her students showed how important it appeared to be for teachers to get the correct spelling, rather than represent the sounds they hear in the word. She is helping the child write the word *strawberry*. Note in this excerpt that although the sound /y/ is not heard at the end of the word, she erroneously emphasizes the /y/ so the child has a spelling close to the conventional spelling of the word.

> *Elaine: What else do you hear in strawberries. str /aw/ /aw/*
> *Child 1: A? H?*
> *Elaine: Ask your neighbor for help.   They are use the name plate to find the w.*
> *Elaine: Now, what letter is above the yo-yo? Y. Do you hear strawberry- /y/.*
> *Do you hear the /y/ at the end? What sound does the y make? Do you hear the*
> */y/?*

The emphasis on the y in this example is especially important because it illustrates that the teacher was not focusing on even modeling the sounds as /y/ is not actually hear in strawberry. Instead, she seemed more intended to for the child to get a representation of the word that looked close to the conventional spelling. This emphasis on representing a letter whose sound was not heard was not prevalent; however, it happened several times across my observations.

Task regulation. *Task Regulation* scaffolding strategies involved the teachers modifying certain aspects of the task to simply or clarify. Task regulation is a high-support scaffolding strategy because the teacher provides a high level of guidance to help the child complete the task. Across classrooms, task regulation was observed 11% of the time when a high-support scaffold was employed. I observed about one instance per observation. For task regulation, the teachers used the scaffolding strategies of: *making concrete* or *reducing choices.*

Making More Concrete. In this study, I considered strategies labeled as *making more concrete* to be those in which the teacher adjusts the situation by decreasing the level of symbolic representations and memory demands by providing visual or other nonlinguistic cues (e.g., lines for writing, putting up fingers for words in sentence, or touching a body part for each phoneme in a word). One strategy that fell under this category and was prevalent in the interview and survey was the use of scaffolded writing (Bodrova & Leong, 2007). Bodrova and Leong's scaffolded writing typically follows these steps: 1. The child dictates a sentence. 2. The teacher repeats the sentence. 3. Together they count the number of words in the sentence. 4. The teacher or student draws one line for each word in the sentence. 4. The child rereads the sentence while pointing to each line. 5. The child makes a mark or writes letters representing each word of the sentence. Notably, Leigh commented that her reading coach suggested that she utilize this strategy. Leigh describes the sequence of that she uses when utilizing scaffolded writing and it is reflective of the way that the other teachers I observed used it:

> Have them repeat it, count it out, clap it out. Show them that is how many words, write lines, the lines show them that each line represents a word, then they have space between the words so they see we can't smoosh our words together (Interview, September 27, 2016).

Teachers may also rely on scaffolded writing as a way to help students remember their message. In one instance of using scaffolded writing, Leigh explained to her students why it was important to use the lines. During a small group session, she said:

> Every time we say a word, I want you to put up one finger. How many fingers is that? 4, so how many words is that? 4. I want to say it one more time because when I am writing I want to get that sentence in my mind so I know what I am writing about. Can you remind me of how many words? I am going to do something up here to remind me that I want to write four words. She drew four lines. (Field Notes)

This excerpt illustrates that teachers may also use scaffolded writing strategies to help children remember the message they are writing so they are able to concentrate on the individual spelling of each word. This support could be useful to children well beyond the emergent stage of development, making it appropriate to use across levels.

All four teachers identified scaffolded writing as a main strategy that they utilized. In fact, Kate identified using scaffolded writing as one of the top three ways that she helped children who have difficulty with a writing task. However, my observations yielded fewer than one instance per classroom visit with Kate only being observed utilizing this strategy five times over four weeks. Kate described using scaffolded writing to help students learn to use spaces between the words.

> If it says I like to run, they have the I LTR looks like one big word to anyone else. I would be praising their work because they got the beginning sound, but it look like one big word, so I draw lines and say "we are going to put one word here, a space here" and just so they can see it. Then eventually they can draw their own lines for their words. Then hopefully at the end of the year, they will not need lines at all (Kate, Interview, September 26, 2016).

The next excerpt shows how the teacher used scaffolded writing with this child but also shows how she follows up with scaffolds after the lines to support the child in making marks for each word in their sentence.

> *Elaine: Tell me a little bit about what you see in the picture.*
> *Child: The pig is making a house.*
> *Elaine: The pig is making a house. Can you write that? Let's count it. (The child and teacher are both putting up one finger as they say each word. They both counted.)*
> *Elaine: How many is that?*
> *Child: 6*
> *Elaine: Draw a line for each word.*
> *Child: the, the*
> *Elaine: Remember, we had that word in our poem. Child does not respond. Remember it is like in Thursday?*
> *Child: th!*
> *Elaine: Okay, pig. Stretch it out. (Child puts his hands on his head and says /p/. He writes p.)*
> */i/ as in igloo. (She points to the I on the name plate. Child write the i.) /g/ as in goat. (She points to the g on the name plate.) is, /i/ /i/ (Child writes an i.) /s/ (Child write an s.) What do you need next to the is?*
> *Child: A space*
> *Elaine: Now you need to write making. /m/ child writes m.*
> *Elaine: Do you hear any other sounds in making /ing/? Keep going.*

One reason that teachers may see scaffolded writing as a strategy that is useful is because of the relationship they see between writing and COW-T. When Leigh described why she used scaffolded writing, she said:

> It goes along with concept of word. In reading, we are teaching them every time we say a new word we are pointing, so in writing we are focused on every time, every time they say a word they need to write down (Leigh, Interview, September 27, 2016).

Although teachers reported that their kindergarteners varied in their orthographic knowledge based on their spelling levels, all four teachers reported that the children in their classes were emergent readers and still needed work on COW-T (the ability to track print and identify specific words in context and isolation). This connection may explain the heavy emphasis on sentence segmentation during writing.

Another example of a making more concrete scaffold that I observed was what Elaine referred to as "head-shoulders-knees and toes" to support word segmentation. Hands-shoulders-knees and toes can be seen in the previous scaffolded writing example when the child puts his hand on his head for the initial sound in *pig*. (i.e., "Stretch it out." (Child puts his hands on his head and says /p/. He writes p.) "/i/ as in igloo." (She points to the i on the name plate. Child writes the i.)) In this example, you see that she asks children to connect a sound with each body part so they practice phoneme segmentation before they begin writing.

Elaine identified head-shoulders- knees and toes as a strategy she used with her higher children when they already understood the need for spaces between words. She said,

> I use lines for students who need help with spacing, just like in the poem your tracking is a new word. So, a line means a new word. Counting our words let them remember what my sentence was. Then you get an idea of what have want to say. When you meet with them and count then you get an idea of what they want to say. I use it for kids who have no idea of what makes a word or spacing- my lowest kids. My high ones are already doing it without lines (Elaine, Interview, September 27, 2016).

Teachers used high-support strategies across contexts during writing time. In conclusion, it appears that when teachers do use high supports, they primarily do so to keep children from being discouraged and to support other literacy skills.

Summary of Finding 1. The teachers all identified scaffolding as a way to support specific literacy skills and assist with the children's confidence. The analysis of data revealed that the four teachers in this study demonstrated the use of a range of verbal scaffolds during a variety of contexts, but tended to use more high-support scaffolds than the low-support scaffolds. Of those high-support scaffolding strategies, the teachers most frequently used direct questioning and modeling.

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In the next section, I explore the ways that teachers used scaffolding across the three main contexts of writing instruction: whole group, small group, and independent writing.

Finding 2: Scaffolding Strategies Across Contexts

Teachers employed scaffolding strategies across all contexts in the classroom. In total, 27% of scaffolds were used in whole group, 30% in small group, and 43% of the total scaffolds were used during independent writing. Teachers used an average of five scaffolds per writing period in whole group, six instances of scaffolding per day in small group, and nine scaffolds per day during independent writing. Table 8 shows the number of scaffolds used by each teacher across the three main contexts of writing instruction and the corresponding percentage of that teachers' overall use of scaffolds. As evident from this table, on average, there was a significant preference toward independent writing (43%); however, there was some variation among teachers. Ann and Elaine used significantly more scaffolding strategies during independent writing time, Leigh used slightly more, and Kate used the least scaffolding strategies during independent writing time. Despite Kate not following the pattern of the other three participants, during the interview, she expressed that the independent writing time was a time when she focused on providing independent writing scaffolds.

Table 8

Number and Percentage of Scaffolds Across Contexts

	Whole Group	**Small Group**	**Independent**
Ann	27 (15%)	38 (23%)	101 (61%)
Kate	63 (37%)	61 (36%)	47 (27%)
Leigh	19 (28%)	24 (35%)	25 (37%)
Elaine	43 (26%)	52 (31%)	71 (43%)
Total	152 (27%)	175 (30%)	244 (43%)

One reason that teachers may use scaffolds more frequently during independent writing may be because of the structure of independent writing time.   The structure of independent writing time is that the teacher rotates through the room to support children with their writing. When asked about the children who teachers help during independent writing time, there was a consistent reply that they help those who have less advanced spelling skills or those who have difficulty getting started on their writing. All four teachers alluded to prioritizing meeting with struggling students during independent writing time, although Kate did mention that she attempts to conference with all students at least once per week.   This response may explain why she used less high-support scaffolds during independent writing than other teachers. In the following excerpt, Ann describes how she targets her struggling students. She mentions that she meets less often with her students who are progressing.

> I try to always hit my lower group and the lower end of my middle group. It is about six or seven students each time. It changes as the year goes on. Once they are independent, I just go to the same ones every time- my lower one. I will just occasionally meet with the higher ones because they can do it. (Ann, Interview, September 26, 2016)

Teachers also attempted to help children who were just generally struggling to get started on their writing. When asked about her decisions of who to meet with during independent writing, Kate replied:

> I look around, see how they are doing and I may think I can step in and help that child. I just want to get them started I may just look for drawing lines, brainstorming thoughts. I think a huge part of the writing process is just getting them going. Later on in the year, it is the child that maybe in small group they didn't get it, so I need to spend a little more time with them so when they come to me they may have a little more confidence and know how to do it. (Kate, Interview, September 26, 2016)

When teachers have the mindset that during the independent writing time they should help those who are not working or struggling, then it is not surprising that they are providing more scaffolds during that time. It is also not surprising that that 62% of those scaffolds are high-support scaffolds. The teachers are viewing the children that they are assisting as the neediest in the class, so it makes sense that they start with a high level of support for these children. In the next section, I discuss how the teachers use scaffolds differently depending on the context.

Modeling changes across contexts. Across all three contexts, teachers utilized high-, medium-, and low-support scaffolds. As previously discussed, on average, teachers relied on more high-support scaffolding strategies than other scaffolds. This support was most frequently in the form of modeling. Teachers were relatively consistent with their application of high, medium, or low support scaffold supports across contexts with the exception of modeling. In the next section, I discuss how modeling was used in whole group, small group, and independent writing.

Modeling in whole group. In whole group, the most common way that teachers used modeling was by rereading a sentence that they had written together or that she had written for them. She would point to each word or move her hand from left to right as she read the words. Teachers appeared to use this practice for several reasons. One reasons was to help draw children's attention to the print and make the connection between what she is saying and the words that are written. This practice seemed to be in an effort to help students understand the difference in print and pictures. For example, Leigh displayed a piece of chart paper with a story they had written on a previous day. She explained that the reason we add words to pictures was to help the reader understand

what is going on. She reread the story to the group. In my field notes, I recorded, "She

slowly read each word and then said 'does that tell us what is going on in the picture?'

She deliberately touched each word as she read it." During another visit to Leigh's

classroom, she explained the independent writing activity to the whole group. First, she

reminded them, "Writing is different from drawing." Then they participated in a

discussion about the difference between drawing and writing. Next, she repeated the idea

that writing is different from drawing. Finally, she touched the words on the modeled

writing as she reread it and pointed out that "these are words, not drawings." In both of

these examples, Leigh helps children to solidify the difference in print and pictures.

When pointing to each word as they read, teachers are supporting the children's

budding COW-T, or their ability to track print and identify specific words in context.

Teachers were sometimes explicit in pointing out they were modeling the match of

speech to print. For example, during one of Leigh's small groups, she told the children:

> So I want you to look up here. I am going to read our story one more time but I
> am going to point to each word. When I point to the different words, what am I
> going to jump over? I am going to jump over the space. Watch me read it this
> way. I am going to skip over the spaces because that tells me I need to go to the
> next word. (Field Notes)

 There were times when teachers provided this support without directly drawing attention

to it. In the excerpt below, Ann models matching speech to print as she says each word

while writing it. The child's response about the number of words in the sentence shows

that the child makes this connection:

> *Ann shows the children a picture from a Chic-Fil-A calendar. It is a picture of a*
> *cow playing the drums. She tells them that today they will write about that*
> *picture.*
> *Ann: I am going to write about this picture. (She says each word as she writes*
> *The cow is playing the drums). That is Step 1. What else could I add?*
> *Child 1: He made the drum out of pans*

Ann: The cow made the drums out of pans. (She says each word as she writes.)
Child 2: That was a whole bunch of words!

One reason that she may use this type of model during whole group is to support

the emergent reader and writer. Based on the reported reading performance of the

children at the onset of the study, the teachers believed that all children were emergent

readers and still working to gain a COW-T and could benefit from this type of instruction

(Ann, Kate, Leigh, & Elaine, September 26-27, 2016). If teachers view print knowledge

and COW-T as a skill needed by all kindergarteners, then it makes sense that they are

consistent with what the teacher models. When I interviewed Kate, she did suggest that

what she models changes as the year goes on.

> What I am modeling is different throughout the year. At this point, it is that I am writing letters. I say, "boys and girls, I am not just drawing pictures." I go back and count my words and want them to see that I take a little breath and want them to put a space there. Making them realize that this is a word and this is picture and reassuring them of the difference. Later in the year, more so what I am writing. So focusing on starting with a capital letter and ending with a period. I feel like the writing process is constantly changing as they are gradually progressing. (Kate, Interview, September 26, 2016)

Modeling in small group. During small group, the most common way that

teachers employed a modeling support was by providing a letter, word, or sentence for

the individual children to copy. When teachers provided a model of a letter, they would

typically write the letter on a separate piece of paper or a different part of the child's

paper and expect him or her to copy it. For example, in this small group example, Elaine

helped a child write vegetable in a booklet. She began by writing the letter with her

finger on the table, when the child was unsuccessful, she wrote a *V* on the paper using a

pencil. Elaine said, "What should we hear at the beginning of 'vegetables?' *V* goes

down and up." Elaine showed him by using her finger to draw it on the table in front of

him. The child attempted to write the *V* on his paper, but is unsuccessful so she models it again on the paper in front of her. Figure 12 shows the paper that Elaine used to model several letters for children during the small group writing.
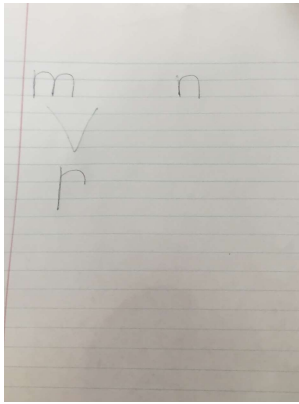
Figure 12. Modeling letter writing. This figure illustrates one teacher's model of letter writing.

After the child writes the *V*, Elaine turns the page of his booklet. In other cases, teachers would actually dot the letter so the child could copy it. In one situation, Ann helped the child write her name. Ann said, "Oops, did you forget your *N*? It goes between your *N* and *A*. Do you know how to make an *N*? Let me dot it out for you." Ann drew dotted lines for the child to trace. For an emerging writer, this type of support is appropriate if they are not yet able to form letters. It is likely that these teachers provided this support out of necessity for children who were unable to write letters.

In other cases, during small group, the teachers provided words for the children to copy. Teachers were observed telling children that the words were difficult so they would help the children out or sometimes they did not provide an explanation as to why, but would provide the children with one or more words to copy. The children in Ann's class were working on writing a version of *The Three Little Pigs.*   Ann told the children

that they would work together on writing "once upon a time there were three little pigs"

for the first page of the story. They each had their own page and the teacher had a page

she used as a model.

> *Child: I can write that!*
> *Ann: Do you think you can?*
> *Child: I can but I don't know what the letters are!*
> *Ann: Well, I am going to help you. I am going to write the word once. I am going to show you. O-N-C-E. Can everyone write it?*
> *(Children copied from Ann's paper.)* (Field Notes)

This process went on for the remainder of the sentence, although for other words

the teacher did ask children to provide some input before she provided the spelling such

as with the word *time* and would stop with only the initial sound to represent the word, at

other times, she would again write the entire word for the children to copy. The entire

small group lesson of about ten minutes consisted of this exercise:

> *Ann: Once upon a time. What do you think time starts with?*
> *Child: /t/ /t/ /t/ time, T!*
> *Ann: Good. Do you have a T in your name?*
> *Child: yes*
> *Ann: There is a t. Ann only writes t. I am going to write my t in time. (They move one to the word there with only a t to represent time.)*
> *Ann: How about I am going to write there this time. I am going to write the word there for you to copy.* (Field Notes)

Kate described her use of modeling and reported that she often removed the

model from sight prior to tasking the children with an independent activity; however, for

her lower group she would "sometimes leave the model so they can copy it to help with

sentence structure" (Interview, September 26, 2016). I observed several teachers

employing modeling during small group by providing a sentence stem for the children to

copy. For example, in Elaine's classroom, she had the children work on pattern stories.

During small group, she modeled how she would use the pattern *I like*. Figure 13 shows

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Elaine's model. She modeled copying *I like* and then modeled writing a word after each sentence. As seen in the figure, she modeled scribbling and also modeled an invented spelling for vegetable. It is interesting that the children were expected to copy the *I like* phrase but it was acceptable for them to produce a scribble after the phrase, rather than encouraging them to at least attempt letters.
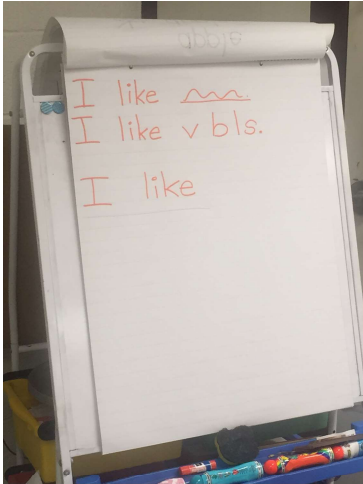
Figure 13. Model of pattern story. This figure illustrates a teacher's model of pattern writing during small group instruction.

In small group, teachers also utilized the model of copying their writing to provide support for children who are unable to write letters, to allow them to write full sentences, and to allow them to get the spelling of more difficult words. Teachers expressed the need for this support for students and all but one teacher reported that one writing period each week is reserved for all children to work on letter formation through copying and tracing.

Modeling during independent writing. During independent writing, the most common observed example of modeling was when they were telling the answer to the child. After an early visit to Elaine's classroom, I wrote: *What I noticed is that she seems*

to be quick to provide a model (e.g., Do you know what makes that sound? Followed by

little wait time and an immediate answer.) This later emerged as a trend across all

classrooms. For example, Ann was observed working with an individual child and said,

"What do you think spaceship starts with?" Before the child could say a response, she

responded, "Let me see an s for spaceship." Similarly, in Elaine's classroom, she helped

a child with the word penguin. She provided a high level of support by modeling the

correct answer. Elaine said to the child, "played /p/ /p/ /p/ like in penguin /p/ /p/." She

immediately touched the p on the sentence strip for the child to copy. I noticed this brief

wait time and commented on it early in my analytic journal.

> Providing a model for children is helpful because it provides an opportunity for
> the child, specifically if the teacher is modeling how she finds the answer, such as
> by pointing to a letter on a name plate or segmenting the sound before matching
> the letter; however, providing too much support and not encouraging an
> appropriate amount of effort from the child may not help him or her move
> forward in their development as much as providing the appropriate supports.
> (Analytic Journal)

Despite an over emphasis on modeling and copying, in the interviews, teachers

recognized the importance of not telling the child the correct spelling but allowing for

invented spelling. Leigh's comment captured the idea shared by the teachers that

children creating invented spellings was important:

> I don't want to give them the perfect spelling of the words. I want them to use
> their own thinking process to figure those words out. They need to go through the
> process on their own when they are spelling words. They will not always have
> someone around to write with them. They need to think through the process of "is
> this the right way to spell the word". Giving them the spelling is not helping them
> process the information at all. (Leigh, Interview, September 27, 2016)

One reason teachers may feel the pressure to hastily provide the correct answer is

because of the demands of independent writing time. Teachers were observed attempting

to meet with numerous children in their classroom to provide support during independent

writing. One day, I observed Elaine meeting with every student for a brief check in

during their approximately 20 minutes of independent writing time. That meant she only

had about one minute per child to converse about their writing. Although teachers

recognized that children needed to think through the spelling of words, the fast pace of

independent writing time may have forced them to feel that they did not have time to

allow children to arrive at the answer. This idea was captured during my interview with

Leigh. When asked who she helps during independent writing, she answered, "That's

tough because they are constantly calling my name. I try to make it to the ones who are

asking for help. Sometimes I am going to the ones who are deer in headlights look." I

saw this urgency across the classrooms where the children were demanding of the

teachers' attention during this time. I observed several children ask repeatedly for help

from the teacher, even to the point of tears, because the teacher would not be able to

make her way over to help. So, given the fast pace of the lesson, teachers may feel the

pressure to give them the correct answer and move to the next child.

Summary of Finding 2. Teachers used scaffolds across all contexts during the

designated writing period; however, they had a tendency to use more scaffolds during

independent writing time. Across all contexts, their use of scaffolding strategies was

fairly consistent; however, they did use modeling differently across contexts. During

whole group, they focused their modeling on tracking or matching speech to print as they

read. During small group, the primary focus of modeling was on providing the formation

of a letter, spelling of a word, or sentence for the child to copy. During independent

writing, teachers commonly provided the answer for the child to write. The hypothesized

motivation for the variation for these strategies ranged from the instructional intent, to providing handwriting practice, to classroom management.

Summary of Use of Scaffolding Strategies

All four teachers in this study utilized a wide range of verbal scaffolding strategies in their classrooms. Of the low-support scaffolding strategies, teachers most commonly provided feedback as a way to keep children motivated to continue writing. Teachers valued praise as an important part of teaching writing. They least often used medium supports, which may also be related to wanting to reduce potential frustration for students by asking questions that require children to justify their invented spellings or decisions about their writing. Teachers most frequently used high-support scaffolding strategies that required less input from children and more support from the teacher. They most frequently employed modeling as a scaffold but also reported strategies that were in keeping with making the learning more concrete. One teacher also frequently used co-participation. Although teachers used scaffolds across all contexts, and they typically used scaffolds in a similar manner, they did vary in how they used modeling in whole, small, and independent writing.

In the next section, I discuss my process of analysis and findings for Question 2. Next, I discuss how scaffolds were used for children at different levels of orthographic development and how these supports match what we know about learners at these levels.

<div align="center">

Scaffolds As Related to Orthographic Knowledge

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To address Research Question 2 regarding the ways, if any, that kindergarten teachers' verbal scaffolds differ according to the teacher's perception of children's existing orthographic knowledge, I aimed to address how teachers perceived differences

in orthographic development and how the scaffolds they employed varied based on any perceived differences. In the initial survey, the four teachers reported that children displayed a wide range of levels in their writing achievement (drawing and scribbling to simple long vowel patterns). The responses from all of the teachers during their interviews revealed that they considered assessments and observational data when deciding on identifying these levels in their classrooms. I used a matrix to group students by reported writing achievement, then examined the scaffolds that teachers provided to students at those levels. Close analysis showed that teachers did adjust their scaffolding strategies depending on the child's level of perceived orthographic development. To further analyze the data, I coded each interaction with scaffolds as a "match" or "mismatch," based on criteria informed by the research presented in Chapter 2. I discovered that although the teachers may adjust the scaffolds depending on the level of perceived orthographic development, the scaffolds were sometimes not matched to what research suggests is appropriate for a child performing at that level.

Finding 3: Teachers' Perception of Differences in Orthographic Knowledge

In this section, I address the first of two main findings related to my second research question regarding how teachers perceive differences in orthographic development. Teacher interview, survey, and observation data supported the finding that teachers recognized that children displayed different levels in their orthographic development and have different instructional needs.

Writing achievement levels. In the survey, teachers were asked to report the writing and reading achievement levels of the children in their classrooms. With regard to writing achievement, teachers reported children at levels ranging from drawing and

scribbling to writing with simple long vowel patterns (Cabell et al., 2013). Table 9 shows

the percentage of children the teachers reported to be at each level. It is important to note

that the teachers reported writing achievement levels that corresponded to the levels in

their adopted writing curriculum and those defined by Cabell et al., 2013. Although

teachers were not asked to solely report spelling levels, in the first column I listed the

terms for the corresponding levels of spelling development (Bear et al., 2016) because

earlier in this capstone I discussed both stages and levels. As the chart demonstrates,

60% of children in these classrooms were identified as being in the emergent stage of

spelling development, 38% in the letter name-alphabetic stage, and 2% in the within

word pattern stage.

Table 9

Number/Percentage of Children Teachers Perceive at Each Level of Development

Spelling Stages (Bear et al., 2016)	Early Writing Development Levels (Cabell et al., 2013)	Total number of children
Early Emergent	Drawing and Scribbling	22 (27%)
Middle Emergent	Letter and Letter Like Form	27 (33%)
Late Emergent- Early Letter Name Alphabetic	Salient and Beginning Sound	17 (20%)
Middle - Late Letter Name	Beginning and Ending	5 (6%)
	Beginning Middle End	10 (12%)
Within Word Pattern	Simple Long Vowel Patterns	2 (2%)

The idea of using data for fluid grouping and instructional focus was common

across teachers. This concept was captured during my interview with Kate in response to

a question regarding how she determined instruction for children:

> Based on their writing performance, looking at them, I decide on what small
> group. These small groups can change week to week. I have already noticed,

"Hey, I have the child in the wrong group and then I can change them." Fluid small groups are important. I look at the examples of their writing; are they using beginning sounds, or beginning and ending sounds, or some of them are scribbling so you have to look at their actual examples (Kate, Interview, September 26, 2016).

During the interview, teachers reported that they utilized assessment and observational data to determine the range of achievement levels in their classrooms. They reported using developmental spelling assessments administered at the beginning of the year to determine the writing achievement levels. Developmental spelling assessments involve asking the child to spell a series of words then analyzing the errors to determine the child's level of spelling development. The teachers also reported that they adjusted groups based on new assessments that they administer throughout the year. Leigh reported, "I will regroup after PALS (Phonological Awareness Literacy Screening)." The PALS assessment is a literacy assessment given three times per academic year. Further, teachers reported that they used additional informal assessments to continuously determine levels. "At the end of the nine weeks, I will take writing samples and use those" to decide which supports to provide for different students (Leigh, Interview, September 27, 2016). As part of the district's policies, all teachers used rubrics to measure children's writing achievement and to determine small group placement. I did not observe any end of quarter assessments; however, I did observe Ann administering an end of the month writing assessment. She described it as an informal portfolio assessment that the teachers in her building had created. Prior to the lesson, Ann told me that she used this monthly assessment to monitor progress over time. During this lesson, she explained to the children that this monthly journal would allow parents to see their progress over the course of the kindergarten year.

The teachers did not simply look at the writing samples and use a rubric to determine the writing levels for students. They also utilized other information to determine the level. Regarding the writing samples, the teacher reported that it was important that the child read the messages so you knew "if they even know what they wrote" (Elaine, Interview, September 27, 2016); she said that this rereading can help you determine if the child is connecting the speech with sounds or if they are writing random letters. Kate commented, "I would like the child to read it to me because if he gets to the s and says that says secret, I can use it as an opportunity to train their mind and say 'yes, you heard an s and that is why you wrote it down'." (Interview, September 26, 2106).

Reading Achievement Levels. The teachers also noted differences among the children's reading achievement levels; however, the identified reading levels were less diverse. Teachers appear to have an understanding about the differences among their students' reading achievement, but seem to rely on more formal assessment data to corroborate their ideas about children's levels. Despite reporting that their students were all spelling at different developmental levels, all four teachers reported that all students were reading at the emergent level on the surveys with responses including "we have not yet completed PALS, so this data is not yet available" (Leigh, Survey) or "all students are currently being instructed here until PALS testing in October" (Kate, Survey). During the interview, I asked Leigh about this and she said, "I'm pretty sure, based on what I have seen…I know one girl is definitely a reader and I might have a second one. Other than that, I think the rest are readiness" (Leigh, Interview, September 27, 2016). After my classroom observations were done, Leigh wrote by email to tell me,

> I just wanted to let you know that I had 6 students test with a firm COW, so they went through word lists, and I just started running records! My prediction about

their reading levels was a bit off, I'm sorry! I will keep you posted on how their running records end up so you have that reading level info!" (Leigh, Email, September 30, 2016).

She later reported that she had two children at the emergent level and they ranged all the way to the primer level. This information is notable because she originally reported that they all were at the emergent level except one. The instructional needs for a student at the emergent and primer level are significantly different. This information suggests that although the teachers have some idea about the reading differences among the children in their class, these observations may not be highly accurate and that they rely heavily on more formal assessment data, not always available at the beginning of the year, for determining the children's instructional levels.

Reading and Writing Connection. During the interview, I asked teachers about their thoughts about whether reading and writing development are connected. All four teachers commented that reading and writing were connected, saying that their reading and spelling groups were nearly the same. All teachers specifically saw writing as connected to reading through building an understanding of COW-T. Leigh commented on the connection between reading and writing, stating that

> They both help with concept of word. We are teaching them every time we say a new word. (In reading,) we are pointing, so in writing we are focused on every time they say a new word they need to write it down. (Leigh, September 27, 2016)

Other teachers commented that in reading, the lower groups are working on tracking when reading words in a sentence and the highest group is working on identifying words in the poem and words that are isolated from the poem. During writing instruction, Kate noted that the lower group needs to "recognize that there are words and pictures, another group needs to begin to write letters, another group needs to focus on

beginning sounds." (Interview, September 26, 2016). Based on these comments, the teachers recognized that reading and writing were similar processes and that achievement in one would impact achievement in the other; however, the mismatch in the reporting of children's reading and spelling levels suggests that they do not understand this connection as well as they report.

Summary of Finding 3. Teachers recognized that children entered kindergarten at a range of different levels in their orthographic development. Regarding spelling levels, teachers reported that children ranged in levels from early emergent to within word pattern. They noted that they learned about children's levels from spelling assessment data and observations. They reported a connection between children's writing and spelling development and in the reading concepts that they taught during their differentiated reading groups; however, when reporting children's reading achievement levels, they classified them all as emergent readers. One reason for this could be the lack of confidence teachers have about reporting reading data without the support of formal reading assessments. Moreover, these teachers may not be as knowledgeable about reading development and its connection to writing development.

Finding 4: Scaffolds Based on Differences In Orthographic Knowledge

In this section, I discuss the levels of spelling development that teachers reported for their children and I describe the scaffolding that was employed within each of these levels. In keeping with the information presented in Chapter 2, I use Bear et al.'s (2016) stages of spelling development to organize this section. At the end of each section, I discuss how teachers' scaffolds matched the perceived needs of students at a particular stage of development.

Teachers provided a range of scaffolds for children during the various contexts in which writing instruction was occurring. They recognized that the children in their classrooms varied in their writing and reading achievement and indicated in the interview that they adjusted their instruction (e.g., focus of the lesson) and scaffolds (e.g., use of lines to support sentence segmentation) based on these differences. In earlier sections of this chapter, I described the general scaffolds that teachers used during the writing instructional contexts and in this section I discuss those scaffolds as related to the levels at which teachers perceived that children were performing. I found that teachers did use different scaffolds for different levels of learners and they were somewhat accurate in providing scaffolds for children based on their perception of a child's orthographic needs. Specifically, teachers were very accurate in matching needs when children were beginning to use invented spelling (early to middle letter-name spellers); however, they often provide supports that were below or above the ZPD. Following are a description of these matches for each spelling level along with what it looked like when teachers did not match children's needs.

Scaffolds at the early emergent stage. The emergent period is the very first stage of literacy development. For ease of understanding the writing at this stage, Cabell et al. (2013) termed it the drawing and scribbling level. At this level, letters are not used in children's writing. Children may scribble randomly or use linear scribbles at this stage. In the four classrooms in this district, the teachers reported that 27% of the children across their classes were at this stage of development. Thirty-three percent of the scaffolds that I observed during my visits took place for this group. Teachers were only providing about five scaffolds per observation for all children at the early emergent

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stage despite this group making up approximately one third of the children in each class. In keeping with previous findings about the contexts and levels of support, over half of the scaffolds for these children were given during independent writing time and 70% were high-support scaffolds which provided a high level of support but a low-level of demand for the child (e.g., "Watch me. Start on this side of your paper and write this way.")

Early emergent matches. In my conceptual framework, I identified print awareness, a focus on print concepts and alphabet knowledge, as the writing instructional focus that helped children transition from the emergent to the early letter name-alphabetic stage. The teacher would also provide opportunities for children to practice phonological awareness skills. Of the supports provided, teachers correctly matched children's orthographic needs about 65% of the time when providing supports to children at the early emergent level. At this level of development, when teachers were matching children's needs, they typically provided supports that required students to use their print concepts (e.g., print direction), alphabet knowledge (i.e., letter names and/or sounds), or phonological awareness (e.g., count the words in this sentences). Teachers were most closely matching children's needs when they used low-support strategies for these learners, providing a low-level of scaffolding such as encouragement as the child was experiencing a higher demand within the task (e.g., "Good job, you wrote from left to right."). When teachers used low-support strategies, they were 80% accurate in matching children's needs. In comparison, they were only accurate about one half of the time when using high-support strategies (e.g., "Where do we start writing? Here or here?") and even less accurate with medium-support strategies (e.g., "What is the first word in

your sentence?"). In this section, I will describe how those matches looked when teachers were supporting (1) print knowledge, (2) alphabet knowledge, (3) phonological awareness.

Print knowledge. Despite print awareness (including print knowledge and alphabet knowledge) being the major writing instructional focus at this stage, only four percent of scaffolds that the teachers used encouraged children to use their print knowledge skills. Although the scaffolds were minimal, teachers used low- and high-support strategies to support these children.

Children at the emergent level are learning about how print works. When providing matches for these children, it included print knowledge skills such as print direction (e.g., print moves from left to right). When supporting the attainment of print direction, Leigh used the high-support strategy of reducing choices when the children could not respond to the question of where do we start writing. She asked children to raise their hand when they knew where to start writing. Child 1 pointed to the middle of the page. She asked the question again. She touched left side and said, "Where do we start writing?" The child responded, "Left to right and top to bottom." Leigh said, "Where is the left?" She pointed to the left. "It is right here. Are we going to start writing here?" She pointed to the bottom of the page and said, "no."

During another observation, Leigh offered an appropriate low-support scaffold, providing feedback, to encourage her student to continue to use print direction skills. The child tracked from left to right as he read "My first day of school was awesome." Leigh responded, "I like how you started out writing from left to right but if you run out of room, go all the way back to the left, just like when you are reading your poem." Leigh

encouraged the child to continue tracking but also connected the rereading to the reading of memorized poems that children were doing in reading groups.

In whole, small, and independent time, teacher supported children's print knowledge by encouraging them to add words to their pictures. Kate supported print knowledge as an important understanding for her emergent learners by saying "for one group it may be that they recognize that there are words and pictures" (Kate, Interview, September 26, 2016).   In all three of the writing contexts, the teachers used high-support scaffolds of orienting. For orienting, they directed drawing and scribbling children to materials in the classroom to support the children in adding print to their pictures. Elaine said to her small group who were performing at this level, "Some of you have been writing a scribble, but there are some letters that you can put here. What are some things that we can put?" She points to alphabet chart. "What are some things near the flag?" The children reply, "letters."

Again, children were supported by low-support strategies, providing minimal assistance, to encourage them to add print. Ann was observed talking during a one-on-one conference at independent writing time. She said "Don't forget to add words to tell me about it. Remember because writers use words." Although, print knowledge was only supported minimally, teachers did use high, medium, and low-support scaffolding strategies to support the attainment of this knowledge.

Alphabet knowledge. Another primary area of focus for children at this level of development was alphabet knowledge. Scaffolds that required the child to use alphabet knowledge made up over half of the scaffolds that these children received. As it is likely that children at this stage of development would know very few letters, it is appropriate

that teachers supported children in learning letters during their writing time. The teacher

typically modeled the phonological work of segmenting the beginning sound; modeling is

another example of a high-support scaffolding strategy because the teacher doing most of

the work and the demand on the child is minimal. Modeling usually included the teacher

suggesting a letter that the child write, then the teacher provided a scaffold to help the

child identify the letter and write it. This interaction is considered alphabet knowledge

because the child was not required to think about the phonological awareness involved in

the task, but simply asked to match the letter name with a given sound. The following

excerpt shows how Elaine used this sequence and a high-support scaffold of modeling to

support alphabet knowledge:

Elaine: What is that sentence going to say? I like…
Child: I like apples.
Elaine: What do you hear at the beginning of apple? /a/ /a/ A like alligator. She shows
him the alphabet chart.
Elaine: A!

In other cases, the teacher would model writing the letters for the child to copy.

In most cases, copying at this level appeared to be focused on helping the child with letter

formation, not on memorizing words. For example, Elaine asked her student what she is

drawing and the child responded, "sun." Elaine said, "let's sound it out. /s/ that makes

an *s*. Do you know how to make an *s*?" When the child replied that he did not, Elaine

drew an s on the child's paper for him to copy. The child copied it.

At this stage, it was common when teachers were providing scaffolds that

matched children's orthographic needs that they used print materials such as alphabet

charts, name plates, and posters around the room. These actions were coded as the high-

support scaffolding strategy of orienting. The term orienting was used for scaffolds that

involved the teacher referring the child to a tangible material such as print in the room or a nontangible such as a song or ditty to support their spelling. In Elaine's response to how she helped children with words they did not know how to spell, she said, "For the low, the ones that don't have much letters or letter sounds, I want to model it and have them do it. They also have an alphabet chart so they can track them" (Elaine, Interview, September 27, 2016; See Figure 14). Teachers used name plates (See Figure 15) to help children find the letters on the chart or they also used file folders with alphabet letters on it (See Figure 16) or with the alphabet letters and pictures that represent the sound of the letter. In both cases, teachers would model singing the alphabet while she or the child pointed to each letter as they sang until they reached the target letter. These supports were appropriate in assisting children to add letters to their writing.
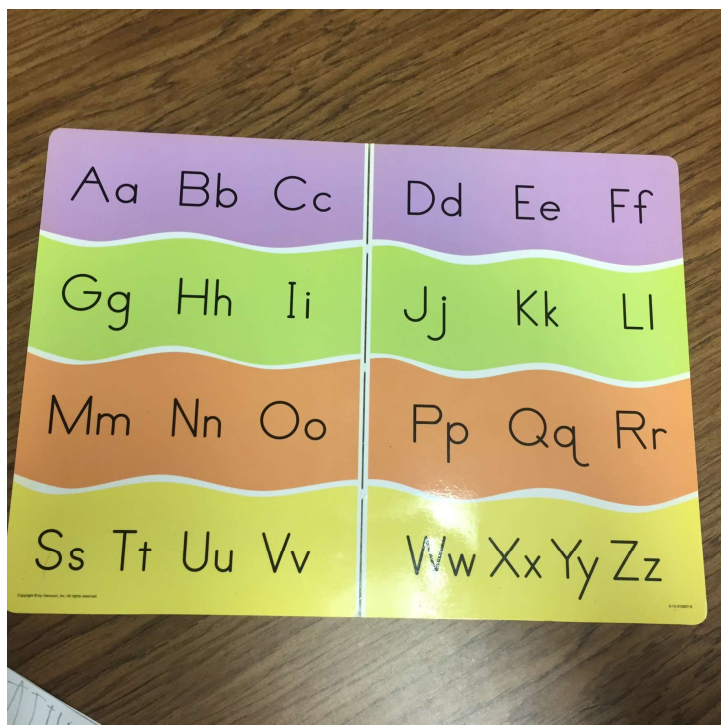
Figure 14. Alphabet chart. This figure illustrates an alphabet chart the teacher used to provide support for children's letter formation.
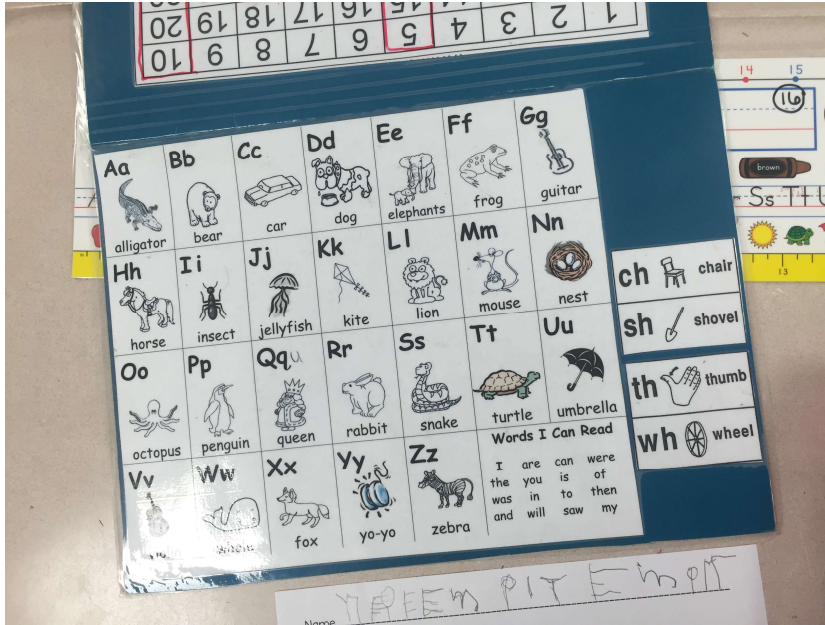
Figure 15. Alphabet chart with sound clues. This figure illustrates an alphabet chart with corresponding pictures to support the children with letter formation and letter sounds.
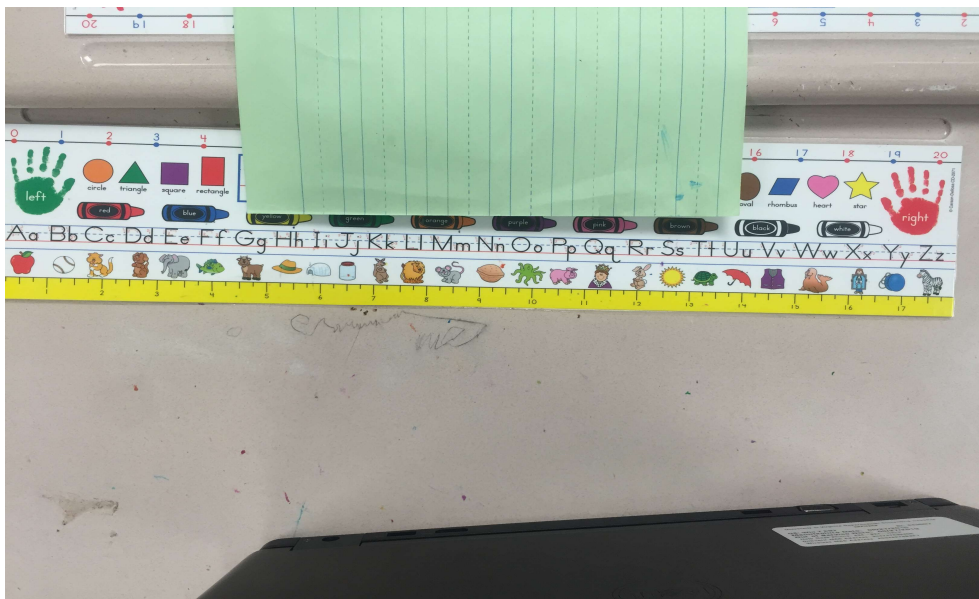
Figure 16. Name plate. This figure illustrates the name plates that were used to support letter formation and letter sounds.

Phonological awareness. Although I observed this less often, teachers also supported the development of phonological awareness skills through scaffolds. When matching the needs of the early emergent learner, the instruction was focused on sentence segmentation. Teachers supported emergent children by using high-support scaffolding strategies to help them with sentence segmentation. Kate, Leigh, and Elaine all focused on sentence segmentation at some point during their observations; however, Ann did not. When teachers were supporting students with their sentence segmentation, they would typically have children count the number of words with them or hold up one finger as they said the sentence together. Kate mentioned that the lines were something that she would start out modeling but gradually release the responsibility for to the child. In the following excerpt, Elaine supports a child by having him say the words as she draws a line. Elaine helps Child 1 by counting the number of words in the sentence – I played with Hannah in the sandbox. He has drawn some lines but she tells him that he can't write the words on those small lines so she will draw some for him. She tells him to say the sentence with her while she is drawing the lines. She draws each line as she says the word-- while drawing the line for Hannah, Elaine comments, "she has a long name… Why are these two lines longer than the others?" She explains that the lines are longer because those are longer words. This connection between individual lines and each word in the sentence provides a support for sentence segmentation.

Early emergent mismatches. At the early emergent stage, all mismatched scaffolds occurred above the child's ZPD. The mismatches at this stage were focused on asking children to integrate phonological awareness and alphabet knowledge, helping the child to produce the initial sound, or even represent every phoneme in the word. For

example, in the excerpt below, Elaine is helping a child write the word *hotdog* after he

asked for her assistance. In keeping with Elaine's report of how she models for children

who do not have a great deal of alphabet knowledge, Elaine models the segmentation of

hotdog. At this stage, a major goal is getting children to write with letters instead of

scribbling, so focusing on beginning sounds, or as in this case, on every phoneme in the

word would be beyond children's ZPD.

> *Child 1: I don't know how to write hotdog.*
> *Elaine: /h/ (She tracks the letters on the name plate with Child 1 until they get to the h.) What else do you hear? H /o/*
> *Child 1: O*
> *Elaine: Look at you getting that vowel sound. Okay, ho-/t/. She elongates the /t/ in the word.*
> *Child 1: T*
> *Elaine: That is one of your letters this week. What else? /d/ Elaine elongates the /d/.*
> *Child 1: D*
> *Elaine: og /g/*
> *Child 1: G*
> *Elaine: (Elaine tracks on alphabet chart until they get to the g.) G, like in guitar*
> *Child 1: /g/ /g/ /g/ go*
> *Elaine: G*
> *Child 1: How do I write a g?*
> *Elaine: tracks the letters until they get to the g. That is a g.*
> *Child 1: I drew a p.*
> *Elaine: You drew a p but it needs to be a b. (She points to the b on the alphabet strip and Child 1 writes it.)*

While some of the strategies Elaine used in the previous excerpt are in keeping

with the matches I observed at the early emergent stage (e.g., orienting, modeling), in this

case, the teacher is providing such a high level of support so the child can produce a

correct spelling of *hotdog*. The representation of every sound is unnecessary at this stage

of development and given that the child can write the letters, it is noteworthy that she

reported him as early emergent.

In contrast to the high level of support we see Elaine using in the excerpt above, some teachers provided high demand tasks with lower support to these students. Some interactions were labeled as mismatched because of the high level of demand and low level of support for a child at this level of development. I was surprised that in many of these cases the child was successful with the level of demand; however, these supports are not appropriate based on what we know about the development of orthographic knowledge, so I marked them as mismatches. In these cases, the teachers appeared to be responding to some other level of knowledge about the children than the level that they had reported. For example, Kate was helping a child write the word *kid*. In the excerpt, Kate used cognitive structuring to direct the child to the part of the word that he should focus on. This is a medium-support scaffolding strategy because Kate is providing some direction regarding where to focus, but the child must integrate his phonological awareness and alphabet knowledge to complete the task. With a medium level of support, it is not expected that a child at the early emergent/drawing and scribbling stage would be successful. For example, at one point, Kate was observed saying, "What sound are you trying to figure out? What do you hear in kid? What sound is at the end?" The child responded, "d."

The high level of mismatches at this level is notable but it is not unexpected given teachers' comments about working with children at the early emergent stage. One reason for the nearly 45% of mismatches for this level of children is that teachers do not feel as comfortable scaffolding for this level of student. Several teachers mentioned this concern and Kate's comments during the interview captured the group's concerns. She said,

> I struggle with children who don't know their letters. I want them to recognize
> print versus writing when they don't know what is a letter. For that reason, I

think I have an easier time working with my kids who are writing with beginning or ending sounds. I can help them find a letter on their name tag after they tell me the letter, but then I am worried, "am I giving them too much?" I struggle with that very beginning student. I feel like the letter we are hitting on in word study- I hold them accountable for those. For another child who is still drawing, I tell her, I want you to do writing but she sees her drawing as writing (Kate, Interview, September 26, 2016).

Summary. At the early emergent level of spelling, the focus of writing instruction should be on print awareness. At this level, teachers offered a variety of scaffold supports, but primarily employed high-support strategies in which teachers provided a great deal of assistance for the child to complete the task. The scaffolds were most heavily used in the independent writing context. When teachers' scaffolds matched early emergent children's needs, they mostly used high- and low-support strategies to allow students to practice their print knowledge, alphabet knowledge, and phonological awareness skills (sentence segmentation). They were most accurate when using low-support scaffolding strategies and/or when supporting students during independent writing. When they were not matching the typical needs at this level, they were expecting children to integrate their phonological awareness and alphabet knowledge or providing high support scaffolds so children could produce spellings that were beyond their level of development. These types of high-support scaffolding strategies may account for the lower percentage of matches of high-support strategies. It should be noted that this study was focused on the teachers' perceptions of the children's levels. In cases where early emergent children performed well beyond what is considered typical of this level, there may be reason to consider that the teachers' perceptions were not consistent with children's actual instructional levels.

Scaffolds at the middle emergent stage. At the middle emergent level, children are gaining more alphabet knowledge and beginning to use those letters or proximation of those letters in their writing; however, the letters do not yet correspond to the sounds with the message. For ease of understanding the writing at this level, Cabell et al., (2013) termed this level as letters and letter-like forms.

In the four classrooms in this district, the teachers reported that 33% of the students across their classes were at letter and letter-like forms stage of development. This group was the most highly represented group in my sample. About 44% of the scaffolds that were recorded were used with this group of students. Teachers provided about six scaffolds per observation for the children at the middle emergent stage. In keeping with previous findings about the contexts and levels of support, about half of the scaffolds for these children were given during independent writing time and most of the supports were high support scaffolding strategies (55%) (e.g., "What letter says /m/?"). Teachers did divide the other half of the scaffolding supports more evenly between low and medium at this level than they did at the early emergent level.

The teachers provided scaffolds that matched students' orthographic needs nearly 80% of the time or about five times per observation. They were nearly equal in their accuracy of matches with low and high support and were accurate over half of the time for medium support strategies. They had an accuracy of 70% or greater across all three contexts, with the greatest accuracy in whole group (89%).

Middle emergent matches. As mentioned in the early emergent section, in my conceptual framework, I identified print awareness as the writing instructional focus that assists children in transitioning from the emergent to the early letter-name alphabetic

stage. I also expected to see some efforts to improve the children's phonological awareness. Despite a similar focus at these levels, I divided my presentation of these two levels because the emergent stage made up 60% of the total population of children and the content of the print awareness instruction would be slightly different from children at the middle and end of the emergent stage.

Across all contexts, teachers correctly matched children's orthographic needs about 78% of the time when providing supports to children at the middle emergent level. The content of the matches within this level involved print knowledge along with providing high-support scaffolds to help children to represent the beginning or salient sound in the word they were attempting to write. In this section, I describe these matches within the areas of (1) print knowledge and (2) the integration of alphabet knowledge and phonological awareness and (3) phonological awareness.

Print knowledge. It is critical at this stage that teachers continue to focus on concepts of print knowledge; however, only 7% of the scaffolds used with children at this level of development were focused on print knowledge. When they did provide scaffolds, teachers employed a variety of support strategies to encourage students to use multiple letters to represent a word. This focus helped children solidify the concept that words were made of many letters.   Ann was observed using the low support strategy of providing feedback to praise one of her students for using letters to make his words. This praise was done during small group, so all children were moving toward using letters. Despite not matching the sounds with the words in the picture, Ann provides praise to possibly encourage this child and others in the group to continue writing with letters, rather than reverting to scribbling. Further, she offers an explanation for the letters that

he wrote saying "he wrote letters of his name to make his words" to give other children

an idea of where they can find letters.

> *Child 1: I tried my best to write a word.*
> *Ann: What does it say.*
> *Child 1: I don't know what it says.*
> *Ann: What do you want it to say?   (Child 1 said a message that was not completely audible to me.)*
> *Ann: Good! He wrote the letters of his name to make his words.*

Print knowledge matches at this stage moved beyond tracking one line of print

using a return sweep at the end of the line. Teachers supported children in how to use a

return sweep when reaching the end of a line. For example, Kate worked with a group of

letter and letter-like form students and used the high support scaffolding strategy of

eliciting to support the children in the group. She modeled tracking from left to right

then using the return sweep to move to the next line. After the model, she asked a child

to imitate her model and answered a question about where to start writing and which

direction to write:

> "Just like when we look at books the author goes this way." Kate pointed to the board "and then goes right back here and move this way." Kate hands one dry erase board to each student in the small group. She has children point to the board after she asks, "which side would you start to write on?" Child 1 points to the left of the board. Kate, "Okay, are going to start on this side?" Kate points to the right. "Okay, where are we going to start? Pretend you have a marker show me with your finger which way you go." Child 1 uses his marker to point to the left and move it to the right. "When you get to the end of the board which way will you go?" (Field notes.)

Integration of alphabet knowledge and phonological awareness. At this stage,

children are using letters, so teachers provided support to encourage not only random

letter making, but supports to help them write letters that connected to the words they

were writing. During the interview, teachers responded to a writing sample completed by

a child at the Letters and Letter-Like Forms level. The teachers all commented that when

working with children at this level, they would try to get them to represent the first sound in the word. Leigh's response to the question about how to support a child at the letter and letter-like form reflects the ideas shared by all of the teachers. Leigh said that she would say to the student:

> "Let's think of the first sound you hear- pets. I try to get them to say it or say pets /p/, so I try to hold back…If he is just writing with the letters in his name then it might be too much to think of other sounds so I would just focus on the beginning sound." (Interview, September 27, 2016)

Kate added to this idea of encouraging the children to write with the beginning sound of pets that

> "hopefully they would say /p/. If not, I would say, 'I hear /p/ /p/ /p/.' What makes /p/? If they told me then I would have them write it down and say 'okay, we heard p for pets.' I would want to stress that with them." (Interview, September 26, 2016)

As indicated by these excerpts from the interviews, these supports would need to be high-support scaffolding strategies because emergent students are still not able to independently integrate their alphabet and phonological awareness skills. This developmental progression may explain why teachers primarily used high-support scaffolds for children at the early levels. The teachers frequently used a combination of modeling and direct questioning to support children through the process of integration. They would first model the segmentation of the letter then they would ask the child to match the sound with the letter. This process is appropriate for children at this level of development because alone they have not grasped the alphabetic principle and could not complete the task alone. Using a series of high-support scaffolding strategies like Kate

and Leigh described can be seen in the following excerpt from Kate's classroom where

children are writing about their favorite toys during small group instruction.

> *Kate: What is your favorite?*
> *Child 1: My figures*
> *Kate: Do you know any sounds in figures? (Child 1 shrugs.) What would you write down in figures?*
> *Child 1: Another h.*
> *Kate: Can I tell you what I hear in figures? /f/ /f/ /f/ I hear /f/. That sound is an f sound. I am going to write it down. Now I want you to write it down. (Child 1 writes f.)*

Phonological awareness. For children at the middle emergent level, teachers

continued to support sentence segmentation at this level. As with other levels of students,

the teachers asked children to clap or count the number of words in the sentence before

drawing lines to support their writing. This use of high support scaffolds, making more

concrete and co-participation, can be seen in the following excerpt from Leigh's

classroom.

> *Leigh: I want to show you how I would go about writing a sentence. I want to write the sentence. I like pizza. Let's clap that out. (All children clap and say the sentence.)*
> *Leigh: Let's count those words. (All children put up fingers and say the sentence.) How many words is that?*
> *Child 1: 3*

One reason that teachers continued to focus on sentence segmentation at this stage was to

strengthen this phonological awareness skill and help them recognize and use the space

between their words. Kate describes here reasoning for using sentence segmentation:

> The students are who are able to get the beginning sounds but if it says I like to run, they have the I LTR looks like one big word to anyone else. I would be praising their work because they got the beginning sound, but it looks like one big word, so I draw lines and say "we are going to put one word here, a space here" and just so they can see it. (Kate, Interview, September 26, 2016)

Middle emergent mismatches. Although teachers were mostly successful in their

matches of scaffolds for children at this level, there were still times when the supports

they provided were either beyond or below the child's ZPD. Many of the supports that

were too simplistic were surrounding recognizing the difference in print and pictures or

that writing starts on the left side of the page. At this level of development, it is expected

that the child has some level of print knowledge and this support would be unnecessary.

For example, a mismatched scaffold that was observed in Ann's classroom when she

used the low-level support of providing feedback for a child at the emergent level. He

had used pictures only to tell his story. As he told his story to his small group of peers

who were performing at the letter and letter-like forms level, he pointed to each picture.

Instead of encouraging him to use letters or words for his story, she said, "Max drew

some pictures to tell about his time at the beach." During another visit, a child who Ann

reported writing with letters and letter-like forms asked her how to write a word. Ann

replied, "How do you write it? You could draw it or you could use write some sounds."

In this case, encouraging a child writing with letters to draw instead of writing the word

is a support that is below the child's ZPD.

Supports that were beyond the ZPD typically pushed children to represent the

middle and ending sound in a word. For example, instead of supporting the child with

the initial sound and then moving on to the next word, the teachers would support the

child in writing multiple phonemes in the words.

> Elaine: Okay, now when I did /ddd/ What else do you hear for did? Do you hear
> a d? Child wrote a d. Let's do head and shoulders for did.   /d/ /i/ /d/.
> Child: D
> Elaine: Good, another D.

While the child can successfully match the letter with the sound produced by the teacher,

supporting the child performing at the letter and letter-like form level to represent

multiple phonemes in the words has the potential to be laborious or even frustrating for a

child who is just beginning to understand letter-sound correspondence and letter formation.

   Summary. At the middle emergent level, the focus of writing instruction should be on print awareness with some attention to phonological awareness. At this level, teachers provide a range of strategies at various levels, but they mainly used high-support scaffolding strategies and most heavily in the independent writing context. Like with early emergent children, when teachers' scaffolds matched children's needs, they used scaffolding strategies to allow students to practice their print knowledge, alphabet knowledge, and phonological awareness skills (sentence segmentation). When they were using mismatched scaffolds, they were expecting children to integrate their phonological awareness alone or were providing high support scaffolds so students could produce spellings that were well beyond their level of development. For middle emergent children, teachers were also observed occasionally providing supports that did not move children toward a higher level but were too low for their ZPD.

   Scaffolds at the late emergent-early letter name stage. In the late emergent-early letter name stage of development, the children are increasing their orthographic knowledge. In this stage, children are beginning to represent sounds that match the words that they want to write. By integrating their phonological awareness and alphabet knowledge, they are now representing initial sounds or the most salient sound in a word. They do not have a firm COW-T so they do not consistently use spacing between the marks on their papers. For ease of understanding the writing at this level, Cabell et al. (2013) termed this level as salient and beginning sounds.

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Overall, the four teachers in this study reported that 20% of the children across their classes were at this stage of development. Only 15% of the scaffolds that were recorded were used with this group of students; teachers were only providing about two scaffolds per observation for the students at the early letter name stage. Teachers typically provided supports for children in either the independent or the small group setting. In regards to the level of support, students at this level received a combination of high (45%) and low strategies (38%) and less commonly received medium support strategies (16%).

Although the scaffolds were few, teachers were successful in matching support strategy to students' orthographic needs an impressive 90% of the time. They were accurate across all three scaffolding contexts: low (86%), medium (92%), and high (77%). They were most accurate when providing support for these children in independent and small group.

Early Letter Name matches. Teachers correctly matched students' orthographic needs about 90% of the time when providing supports to students at the early letter name level. Attention to initial sounds is the writing instructional focus within the ZPD at this level. The content of the matches within this level were related to print knowledge and providing high or low support scaffolds to help children to represent the beginning sounds and moving toward representing the ending sounds. At this level of development, when teachers were matching students' needs, they typically provided supports that required students to integrate their alphabet and phonological awareness, or use their alphabet knowledge. In this section, I describe how those matches looked within the

following areas: (1) integration of alphabet knowledge and phonological awareness, and (2) alphabet knowledge.

Integration of alphabet knowledge and phonological awareness. To write with initial sounds, children need to integrate their phonological awareness and alphabet knowledge. Teachers recognized that they needed to adjust their focus for children who were writing with salient and beginning sounds. Kate stated that she made this adjustment based on their level to avoid frustration. When I probed her about how she decided which words to have students help with during interactive writing, she said,

> If it is a word that has mixed vowels, we are not to that point, but they maybe can write the beginning sounds. For *pear*, I would have them write the letter *p* because we are nowhere near the point to hear the *-ear*, so I would have them write the p. When they come to the board, I hope it will be something that they know how to do so it builds their confidence instead of causing frustration (Kate, Interview, September 26, 2016).

Over a third of the scaffolding strategies employed by teachers for early letter-name alphabetic spellers were used to support children in integrating their phonological awareness and alphabet knowledge skills and teachers still used higher support strategies such as modeling and orienting. For example, Ann supported the children in her class by reminding them of a song that they sing about the vowels and the sounds they make. She modeled singing this song and used it to help the child identify the letter that makes /i/ for the word *is*. Ann said,

> "Did you write it? /i//s/. You can use whatever letters you think. Do you remember the little vowel song that we started last week?" Ann sang, "A says /a/ /a/ E says /e/ /e/ I says /i/ /i/ O says /o/ /o/ U says /u/ /u/ AIEOU, now I know my vowels. Do you remember what says /i/? I just sang it." (Field Notes)

In this stage, the teacher provided less support for representing the initial sound by using strategies such as sequencing and reasoning. For sequencing, the teacher helps

the child find a starting point or continue an action in the correct sequence. This is a

medium support strategy because the teacher is providing guidance for where to start but

the child is integrating the phonological awareness and alphabet knowledge. When

providing matches, teachers at this stage provided supports to direct students' attention to

the initial sound such as "What do you hear at the beginning of to?" For example, Kate

said, "What do you hear first?" The child responded, "S," then Kate encouraged him to

write it down. She provided the support to tell the child where he should focus his

attention, but she allowed him to use his phonological awareness and alphabet knowledge

to identify that he would write the letter *S*.   During a small group lesson, Kate

encouraged children to think about representing the initial or salient (main sound) that

they hear. She said, "I want you to think about what you hear in our words. What sounds

do you hear when we talk about the main sound we hear, when I say the word

elevator?" One child responded, "/e/" He did the phonological awareness work, then she

supported the connection with the alphabet knowledge by modeling that next step, "So if

you hear an /e/ you would write down an e." She modeled writing an e.

Teachers also used low-support strategies to help children advance in their

orthographic knowledge. Kate was observed using reasoning to have her student explain

their invented spelling. During a conference during independent time, she used reasoning

to support the child's use of initial sounds.

> *Kate: What is a fruit that you like?*
> *Child: cantaloupe*
> *Kate: What are we going to write down for cantaloupe?*
> *Child: K.*
> *Kate: Why are going to writing down a k?*
> *Child: Because the beginning part says /k/.*
> *Kate: Because you hear a /k/ at the beginning.* (Field Notes)

COW-T is a skill that requires the integration of phonological awareness and alphabet knowledge. Nearly a quarter of the scaffolding strategies used by teachers to support children at the early letter-name alphabetic stage of development were related to having children use their COW-T. In the following excerpt from my field notes, Elaine supports the child by reminding her of the process of segmenting the sentence, but it was the child's responsibility to use her phonological awareness skills to segment the sentence and draw corresponding lines.

> Elaine: What do you want to write?
> Child: The playground is clean.
> Elaine: Okay, count your words. The playground…oh, you have the park. Child starts to erase it. Don't erase it. That's good.
> Elaine: Did you play with someone at the park? Outside? Who is your friend?
> Child: Madelyn
> Elaine: Okay, I played with Madelyn, do you want to say in the sandbox, swing, or slide?
> Child: On the swings
> Elaine: I played with Madelyn on the swings. That's all you have to write. Can you do that? Draw your lines? How many lines do you need?
> Child: Seven.
> Elaine: Okay, seven lines.

The teachers also supported COW-T at this stage by having children reread what they wrote. At the earlier stages, teachers had children reread the text and track, but in this case, she provided a low support scaffold of acknowledgement and informative talk to provide feedback to the child about using spaces between words. Leigh said, "Can you read what you wrote to me?" While tracking the words, the child said, "I like to go to Mexican." Leigh responded, "I can tell that you used your sounds to write your words. Next time, make your space a little bigger so we can tell what words are what."

Alphabet knowledge. Although at this stage, there was much less need for a focus on alphabet knowledge, there were some scaffolds that were still important for growing

the child's orthographic knowledge. Children at this stage of development know many sounds, but may still require some support for the sounds that they have not yet mastered. In the example below, we see Kate providing high levels of support for the child who is attempting to write about a video game. She provided some supports that may be too high for a child writing the word like. After the child identifies the /l/, she supported him by providing the high-support scaffolding strategy of modeling so he can represent the word with the initial sound.

> *Kate: What makes the /l/ sound?*
> *Child: I don't know*
> *Kate: L. The /l/ sounds is L.*
> *Child: L*
> *Kate: So what makes the /l/ sound? (The child does not respond, so Kate writes l on white board.) What letter is that?*
> *Child: L*

Early letter name mismatches. Although teachers were highly successful in their matches for children at this level, 10% of the supports that they provided were either above or too far below the child's ZPD. Most of the mismatched scaffolds at this level were below the early letter-name alphabetic ZPD. The mismatched scaffolds were related to the alphabet knowledge and print knowledge. As previously mentioned, it is appropriate to support children with alphabet knowledge skills at this level because there may be some letters that are still unknown; however, it is important to use scaffolds that will help the children attain knowledge of those letters. In the following example, a child in Ann's class is trying to write the letter D. Ann provides the initial sound for the child and then offers that he can write the letter or draw a picture. Although the focus on the initial sound is appropriate, the level of support is below the ZPD for a child of this developmental level. After reporting that he wants to write about a dog, Ann replied,

"Do you know what letter says /d/. What is something else that can help you write about it? Can you draw a picture if you aren't sure what makes the /d/?" This scaffold encouraged the child to go back to an earlier level of development, drawing and scribbling, rather than supporting him in moving forward.

In other cases of scaffolds being not demanding enough, the teacher provided support around writing from left to right. The teacher said, "Juliet has some letters here and she is tracking from left to right." A focus on random letters and moving from left to right is likely to be below the ZPD for a child who is beginning to represent the initial sound or salient sound in a word.

Less often, teachers used supports around material that were too demanding for children at this developmental level. When the demand was too high, it was because teachers focused on parts of the words that were beyond children's ZPD. In the example below from Elaine's classroom, she helps a child spell guitar:

> Elaine read what the child had, "When I got a guitar /g/ /uh/". The child hesitantly responded with a *G* but it seemed more like a question than a confident reply. Elaine nodded and said, "/uh-uh/." Without saying anything, the child recorded a *u* on her paper. Elaine said /t/ and the child wrote a *T*. Elaine said /r/ and the child wrote an *R*. Elaine told the child to go sit down and did not respond when the child asked repeatedly, "did I spell it right?" (Field Notes)

Instead of focusing on the initial sound, she uses high support scaffolds so the child can represent multiple phonemes in the word. In this case, the child is simply listening to the sound and responding with a corresponding letter. As an onlooker, this process felt laborious.

Summary. At the early letter name, or salient and beginning sound level, teachers provided many scaffolds that matched the developmental needs of children. The matches were focused on helping children integrate their phonological awareness and alphabet

knowledge. They used high, medium, and low-support scaffolding strategies to support

integration. They also used scaffolding strategies to support children's development of

COW-T. As children in this stage of development are still learning some letters, as

needed, they used high-support scaffolding strategies to support their continuing

knowledge of the alphabet. About 10% of the time, teachers were providing supports that

did not match the orthographic needs of the children at this level. Teachers most

commonly provided scaffolds around tasks that were too simplistic by focusing on basic

print knowledge skills. Less often, they provided scaffolds around tasks that were too

demanding when they used high-support scaffolds to support the beginning and salient

sound child to writing multiple phonemes in the word.

Scaffolds at the middle-late letter name stage. In the middle to late letter name

stage of development, children are becoming increasingly aware of all of the sounds

within a word. The focus of instruction at this stage moves from the ending sound to the

beginning, middle, and ending sound of the word (*full-word analysis*).   This level crosses

over two terms for Cabell et al. (2013); these levels are referred to as beginning and

ending sound and beginning, middle, and ending sounds. I combined my discussion of

these two levels because the overall writing instructional focus on full-word analysis is

the same for both. I include discussion about the separate groups whenever there were

notable differences in scaffolding.

In the four classrooms in this district, the teachers reported that only 8% of the

children across their classes were at this stage of development; 10% of the scaffolds that

were recorded were used with this group. Teachers were only providing one scaffold per

observation for the children at the middle to late letter name stage. Only two teachers,

Leigh and Elaine, reported having children at the beginning and ending sounds level and all teachers, except Elaine, had children at the beginning, middle, and ending sounds level. Most scaffolds for beginning, middle, and ending group was during independent writing (79%), while only one third of scaffolds were used during independent writing for children who were writing with beginning and ending sounds. In regards to the level of support, scaffolds used for children at the beginning and ending sounds level were primarily high support scaffolds. In comparison, children at the beginning, middle, and ending sounds level received the strategies divided fairly evenly among high, medium, and low supports.

Middle-Late Letter Name matches. In the conceptual framework for this study, I identified full-word analysis as the writing instructional focus within ZPD. Only two teachers had students at the beginning and ending sound level; together they had a match rate of 76%; however, all of the mismatches came from the same teacher. At a much lower rate, teachers were only 54% accurate in their matches of the beginning, middle, and ending sound students. These data suggest that these teachers provided less matched supports as children advanced in their orthographic knowledge.

At this level of development, when teachers were matching student's needs, they typically provided supports that required students to integrate their alphabet and phonological awareness throughout the word. If they assisted with alphabet knowledge, it was surrounding blends and digraphs. Following, I will describe how those matches looked within those areas: (1) integration of alphabet knowledge and phonological awareness and (2) alphabet knowledge.

Integration of alphabet knowledge and phonological awareness. Most of the matches at this level provided the support children needed to integrate their alphabet knowledge and phonological awareness. Teachers helped students focus on the beginning, middle, or ending sound for shorter words or focused on the beginning, middle, and end of each syllable in longer words. They used a range of levels of supports to assist students. Teachers seemed to be intentional about the shift to looking at the medial vowel or more sounds in the words for children performing at a higher level. Elaine said, "like if they are now using beginning and ending sounds then I will move them on to hearing more sounds in the words." In an example from Kate's classroom, she helps a child spell the word *peaches*. She uses a medium level of support by helping the child know where to focus on the word, but she also employs a higher support strategy to help this middle letter name child choose a vowel for their word:

> "Okay, let's do peaches. I want you think if you hear any vowels. What are your vowels? a, e, i, o, u. What vowel do you hear in the middle? What vowel do you hear?" The child replies, "E." Kate then tells him, "Make sure you have an e written down in your word."

Kate chooses to focus on a long vowel word for this beginning and ending sound student and provided a high-support scaffold to allow her to listen for the long vowel in the middle of the word.

During the interview, Leigh described how she worked with children during the independent writing time and provided support. After describing how she worked with her lower achieving students, she said "for my higher kids, I get them to slow down, so they get most of the sounds in the words. I try to get them to segment the word." Elaine described more explicitly that she has "the ones that are in the middle and high groups- I know they know how to break it down so I want them to do it, so we do head and

shoulders. We touch different parts so they get each letter." I observed Elaine use this strategy 11 times during my observations, but only once was with a child beyond the beginning and salient level. In this encounter, she said, "Stretch it out." The child touches head shoulders and waist and says, "pl-a-d." Elaine replied, "Okay, so you write a P."

Alphabet knowledge. At this level, teachers are also still supporting children's proper uses of blends and digraphs. In this case, Elaine is helping a child who is trying to write *she.* Elaine says, "She /sh/, what makes the /sh/ sound?" The child does not respond so Elaine tells her, "/sh/ like I am telling you to be quiet." After using the high support scaffold of direct questioning to help the child, she is still unable to produce the sound, so Elaine switches to modeling: "S-H. That is a tricky one." Elaine watches on as the child writes the s then h on her paper.

Middle-late letter name mismatches. For this group of children, all of the mismatched scaffolds came in the form of being too simplistic. Teachers were observed providing scaffolds in which they provided the sound for the child and only required him or her to match it. For example, in Kate's classroom she is supporting a child who is working independently to write the word watermelon: "What do you hear in watermelon. /w/ Can you write what you hear?" The child writes a W. This high-support scaffold of direct questioning regarding the initial sound of W in watermelon, is likely to be unnecessary for a child who is consistently representing the initial and final consonant in their spelling.

As mentioned, all mismatched scaffolds for children at the beginning and ending level were from the same teacher and occurred during two observations. In each

instance, she provided more support than the child needed, resulting in too little demand on the child. During one observation, the children were writing about what was happening in the picture. She said to the children, "What do you hear at the beginning of playground?" The children replied, P. She wrote the rest of the word along with the correct spelling of computer (another item in the picture) for the children to copy as they were writing.

At this level, children can readily segment words in a sentence; however, teachers continue to provide the high support of co-participation and modeling to support children in segmenting the words in a sentence. This type of scaffold was observed in Kate's room:

> "The first word you are going to write is A because that is the first word of your sentence. What is the next word? Boy. Let's count our words." Kate and the child said words slowly and put up one finger for each word. "A boy is riding his bike. Would it be easier for you if I drew lines to help you with your six words?" Kate drew six lines. "Let's count and make sure I have six. The first word you are going to write is *A* because that is the first word of your sentence. What is the next word?" The child said, "*Boy*" then wrote boy then moves to the next word is. Kate responded, "What else do you hear with is? /s/ C! Alright, finish it right there. See if you hear any other sounds." (Field Notes)

Summary. At the middle to late letter name stage of development, children are working on full work analysis. In this study, teachers were more successful at providing appropriate scaffolds for children who were writing with beginning and ending sounds than those who were writing with beginning, middle, and ending sounds. When they were providing supports that matched students' orthographic needs, they were supporting children in integrating their phonological awareness and alphabet knowledge to help them correctly represent all of the sounds in the words. They also spent some time supporting children in representing digraphs (e.g., ch, wh, sh, or th). When they use

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mismatched scaffolding strategies, they consistently provided supports that were below children's ZPD. In other words, they provided scaffolds in which the support was too high and the demand for the child was too low. In the next section, I discuss the scaffolds provided at the within word pattern stage.

Scaffolds at the within word pattern stage. In the within word pattern stage of development, the children are becoming increasingly aware of all of the sounds within a word. The focus of instruction at this stage moves from sound to letter matching to applying patterns in words. In my sample, children at this level were working on simple long vowel patterns (e.g., CVCe; *cake, mope*). In the four classrooms in this district only one teacher, Elaine, reported having two students at this level. Throughout this study, I observed Elaine providing just seven scaffolds for this group. Those scaffolds occurred during three separate observations (Observations 4.1, 4.6, 4.7); however, five of those were with the same child during a single encounter.   In regard to the level of support, scaffolds used were primarily high support scaffolds and nearly all of the supports were given during independent writing. The high-support scaffolds were the only scaffolds that matched the within word pattern children' developmental needs.

Within word pattern matches. Only one of the scaffolds provided to the students was considered to be a match. Elaine assisted the child with a word *of.* The teacher used the high-support scaffold of orienting by referring the child to a word on the class word wall. Although this is a high level of support, the word *of* does not follow the normal patterns of spelling, so it is a word that the child would need to memorize; therefore, it is a logical that the teacher would refer her to the word in the room. Notably, I did not

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observe Leigh providing support to either of these two children to help them write words

with long vowels (e.g., same or rain) or words with r-controlled vowels (e.g., yard).

   Within word pattern mismatches. Nearly all mismatched scaffolds were

recorded during a single encounter between Elaine and her student. In this encounter, the

child is attempting to write the words *the pig is building her house*. Initially the child is

successful with segmenting the words in his sentence. He then used repetition to help

himself with the word, but Elaine provided minimal wait time before she provided a

support.

> *Child 1: The pig is building her house. (The child held up one finger for each*
> *word. Elaine repeated the sentence, holding up one finger for each word.)*
> *Child 1: the, the (says the word as he writes.)*
> *Elaine: Remember, we had that word in our poem. (Child did not respond.)*
> *Remember it is like in Thursday?*
> *Child 1: th!*
> *Elaine: Yes! (Elaine turned to a different child nearby and provided help. When*
> *she returned her attention to Child 1, he had not written th.) Like in Thursday.*
> *(Child 1 looked confuses.)* (Field Notes)

Although at this level the child would be expected to know the digraph /th/, the child did

not and although I would have expected Elaine to support him in representing the /ur/,

she provided support for only the th and then moved on. She modeled and supported him

in writing /th/. By moving immediately to the next word, this excerpt from my field

notes shows a missed opportunity to focus on the r-controlled vowel:

> *Elaine: Ask Child 2. (She modeled) Child 2, can you help me with /th/?*
> *Child 2: T-h, no c-h*
> *Elaine: You had it right the first time. Child 1, say thank you.*
> *Child 1: Thank you.*
> *Elaine: That is a proper conversation during writing time. Whatcha think?*
> *Elaine: What else do you hear in pig? (Teacher holds up one finger for each*
> *phoneme): /p/ /i/ /g/ (Child 1 does the same.)*

At this level of development, I would expect the child to be able to write the word *pig*

without support and therefore, the teacher would only need to provide scaffolding if the

child wrote the word incorrectly. In this case, she provided scaffolding before the child

attempts the word, but did not provide support when he wrote PIT instead of *pig*. After

writing the *i*, Elaine said, "Good, I am glad you heard the /i/. What else do you hear?"

The child responded "/t/" and wrote a *T*. Elaine did not respond.

House is a word that children would not be expected to spell correctly until later

in the within word pattern stage; so was is not surprising that the child does not represent

the /ou/ correctly; however, at this level, I would have expected her to push the student to

represent the other phonemes in the word rather than stopping after the vowel.

> Elaine: Do you hear anything else? The pig is building her house.
> Child 1: /a/
> Elaine: house
> Child 1: h.
> Elaine: Do you hear anything else is in house?
> Child 1: house, house, house
> Elaine: /ow/ /ow/
> Child 1: a? /a/ /a/
> Elaine: Yeah, it's an a. (Field Notes)

Summary. There were only two children at the within word pattern stage in one

classroom and the number of scaffolds provided to these children was minimal. Further,

of the scaffolds that were provided, the majority of them were not matched to the

children's orthographic needs.

Summary of Finding 4. All four teachers in this study recognized a difference in

children's orthographic knowledge and that adjustments in supports are needed to help

students succeed. Teachers identified more diversity in the writing or spelling

achievement of children than the reading achievement. These levels were determined by

the children's performance on formal and informal assessment and the result were used to group students or plan for instruction. Teachers provided appeared to vary the supports based on the children's spelling levels and among all groups they provided supports that matched and those that did not. They provided scaffolds more closely aligned to children's orthographic needs when children were beginning to use invented spelling; however, the teachers were less successful with scaffolds for the highest and lowest achieving groups in their class.

Summary of Scaffolds As Related to Orthographic Knowledge

There is evidence that teachers in this study recognize that there is a connection between reading and writing. Moreover, teachers recognized that children entered kindergarten at a range of different levels in their orthographic development. They reported these spelling levels based on spelling assessment data and observations. While they reported a range of spelling levels from emergent to within word pattern, the reported reading levels were not in keeping with what research tells us about the correlation between spelling and reading levels. Regardless, in this study, I focused on teachers' perceptions of the levels and how these supports matched or did not match what research suggests as developmentally appropriate. While the teachers were somewhat successful in matching scaffolds to children's orthographic needs, they also provided a fair amount of scaffolds that were mismatched. Overall, teachers were most successful with the group of children that were beginning to use invented spellings.

<div align="center">

Overall Summary

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In this study, the teachers identified scaffolds as a way to support specific literacy skills and assist with the children's confidence. In regards to verbal scaffolds (with and

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without gestures), teachers used a range of scaffolds (i.e., high, medium, and low support) across the various contexts (i.e., whole group, small group, and individual). As a group, they tended to use more high-support scaffolds than other levels of scaffolds. Further, on average, this group of teachers most often used scaffolds during independent writing.

Interestingly, although analysis revealed that teachers did recognize the relationship between reading and spelling, the spelling and reading levels that they reported suggests that their understanding may not be firm. Nonetheless, based on the teachers' perception of children's orthographic needs, analyses of scaffolds suggests that teachers are most successful at providing matched scaffolds to children who are beginning to use invented spellings than other groups.

CHAPTER 5

DISCUSSION

In this chapter, I summarize the study and the subsequent findings from this case study of four kindergarten teachers answering the questions: (1) In what ways, if at all, do kindergarten teachers use verbal scaffolds to support children's orthographic development during writing instruction? and (2) In what ways, if at all, do these verbal scaffolds differ according to the teacher's perception of children's existing orthographic knowledge? Then, I will discuss the findings of this study in light of relevant literature. Next, I will outline the implications based on the findings. Finally, I will outline the limitations and my recommendations for future research.

Summary of Study

In this case study, I observed four kindergarten classrooms to explore the ways teachers use scaffolds to support the development of orthographic knowledge during the dedicated writing time. Further, I explored how those scaffolds were adjusted based on the teacher's perception of the child's orthographic knowledge.

Reading and writing are both critical skills for literacy success, but they are typically not given the same attention among educators or policy makers. Despite some attempts to bolster the focus on writing through initiatives such as the Common Core State Standards (National Governor's Association Center for Best Practices, 2010) and evidence that early writing instruction may impact the trajectory of children's later school

success (Aram & Biron, 2004; Puranik & Lonigan, 2011), early childhood writing

instruction is often limited or nonexistent (Puranik, Al Otaiba, Sidler, & Gruelich, 2014).

Reading and writing are highly connected through the orthography that is

common to both (Bissex, 1980; Hertz & Heydenberk, 1997). Orthographic knowledge

develops along a continuum. Researchers (Beers & Henderson, 1977; Clay, 1975;

Ferreiro & Teberosky, 1982; Hildreth, 1935; Read, 1971) have explored the development

of children's spelling. Bear and colleagues (2016) proposed five stages of spelling

development: emergent, letter name-alphabetic, within word pattern, syllables and

affixes, and derivational relations. Their advancement in spelling also influences their

reading progress. Research suggests that when children are supported in their learning of

spelling, they advance in other literacy skills. To move along the developmental

continuum at an appropriate pace, children need support within their ZPD.

The ZPD is defined as the difference between the child's actual and potential

ability; it is the place where the child can work with assistance and avoid frustration

(Vygotsky, 1978). Scaffolding within the child's ZPD allows the teacher to provide

support to help the child avoid frustration but utilize orthographic knowledge, which they

could not do alone. Although scaffolding is a complex practice for teachers, it promises

to bolster literacy skills such as writing (Malcoh, 2002; Rodgers, 2005). For example, a

child may not be able to write the word *bat* without support; however, when the teacher

segments the word with him by saying "/b/ /at/" together, he is able to identify the first

sound as a /b/ and write the B. This support allows him to experience the success in

practicing segmenting and connecting it to the sound and letters he is learning. Alone, he

may only write random letters that he has learned because alone he is not able to integrate the skills of segmentation and letter sounds.

Current information about writing is focused on children younger and older than kindergarten (Henderson, Many, Wellborn, & Ward, 2002; Gerde et al., 2015), is focused only on a single classroom (Clements, 2010), or relies on survey rather than observational data (Dickinson & Tabors, 2001; Vander Hart, Fitzpatrick & Cortessa, 2010). Moreover, there is limited research about the use of scaffolds and supports of orthographic development during writing and there is scant research on the ways teachers adjust these supports based on the children's orthographic needs.

The purpose of this study was to explore the ways in which kindergarten teachers use verbal scaffolds during writing instruction to support children's development of orthographic knowledge. I also explored if teachers changed how they support children based on what they believed the child could already do.

Summary of Findings

Finding One

In this study, I found that although the scaffolds were not abundant, teachers did regularly use scaffolds and used a range of scaffolding strategies from low to high supports. Low-support scaffolds include strategies in which the teacher provides a low level of assistance and the demand on the child is high. An example of a low support is the teacher providing specific praise for the child's work. Medium-support scaffolds are those that require a medium level of demand for the child and a medium level of support from the teacher. An example of a medium support is when the teacher supports the child in knowing where to focus his or her attention within the word. High supports are strategies that provided a high level of assistance from the teacher, therefore, demanding

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less from the child. An example of a high-support scaffold is the teacher telling the child the letter to write and the child writing it. Although they did use a range of scaffolding strategies, teachers most frequently relied on high-support scaffolding strategies. All of the teachers reported a concern about the children's confidence and enthusiasm about writing. They cited the desire to maintain the child's confidence as one of their reasons for providing high levels of support during writing.

Finding Two

All of the teachers in this study had a 30-minute writing instructional period that included whole group, small group, and independent writing instruction. For this reason, to further answer the question of how kindergarten teachers used scaffolds to support orthographic development, I explored how the scaffolds were used across the three contexts. I found that the teachers in this study used scaffolding across all contexts and overall, they used them most often during independent writing time. They did not appear to modify the ways that they used the scaffolds across contexts, except for modeling. There were differences in how they modeled in whole group, small group, and independent writing.

Finding Three

To understand how the teachers' scaffolds related to the perception of the children's orthographic knowledge, I found it important to understand how they viewed the development of orthographic knowledge. I found that all four teachers noted differences in children's orthographic knowledge and I observed them making adjustments in their scaffolds based on those differences. All four teachers reported ways that they addressed the varying needs within their classrooms.

Finding Four

My analysis of the scaffolds they used for each group revealed that teachers do provide different scaffolds based on the level of the child. I looked closely at how those scaffolds matched the children's orthographic needs and found that teachers had instances of matching and not matching across all groups, but were most successful in supporting children who were just beginning to use invented spelling and not as successful in matching the needs of children who were in the highest and lowest achieving groups in their class. In the next sections, I relate the findings to the relevant literature.

<div align="center">Discussion of Findings</div>

Use of Scaffolding Strategies

The first goal of this study was to address the ways in which the kindergarten teachers used verbal scaffolds to support orthographic development. I specifically addressed which of the six scaffolding strategies were used by the teachers during writing time and in which contexts these strategies were used. The results to the study indicate that all four teachers use a range of scaffolds during whole group, small group, and independent writing; however, they tended to use more high-support scaffolding strategies than low-support strategies.

Finding 1: Varied use of scaffolding strategies. I explored which of the scaffolding strategies the kindergarten teachers were using in their classroom. In the following sections, I discuss the findings regarding the use of low, medium, and high-support strategy use.

Low supports. Findings demonstrated that teachers most commonly used the low-support scaffold of providing feedback (e.g., "Nice job, Chad. You wrote from left

to right."). Instances of providing feedback were seen in nearly every observation; however, the rate was low at only about four times per lesson. They typically provided very specific praise (e.g., "You have a lot of letters because watermelon is a very long word. Good job."*)*; however, other low-support scaffolds also included simple encouragements (e.g., "good job" or "keep working"). By using these low-support scaffolding strategies, the teachers provide motivation and encouragement for children, as well as identifying the important tasks that the child should attend to or continue doing. When Wood et al. (1976) explored scaffolding of preschool children by their mothers, they identified six key actions for the person providing scaffolds. Among those six key actions were that the adult provides motivation and identifies the actions within the task that the child needs to focus on. The findings of this study converge with the key ideas for scaffolding of Wood and colleagues (1976).

In terms of levels of support, the findings regarding the use of low-support strategies diverge from those found by Pentimonti & Justice (2010). In their studies of preschool teachers' use of scaffolding strategies during book reading, they found that teachers used low-support strategies with greater frequency than high-support strategies and that teachers showed a preference for using three of the scaffolds most often—generalizing, reasoning, and predicting. One reason that teachers may not use the same pattern in this context is because of the difference in type of activity. Reading aloud to the group may not allow for clear opportunities for teachers to provide individual supports, in contrast to meeting with individuals during writing time.

In this study, it is encouraging that teachers are sometimes using these low-support scaffolding strategies because low-support scaffolding strategies encourage

higher-order thinking skills; however, of the low-support scaffolding strategies used, teachers in this study rarely used those strategies that promoted higher-order thinking such as posing open-ended questions. Low-support scaffolding strategies such as reasoning and generalizing require the child to participate in higher-order thinking processes which research suggests is beneficial for children. It is not surprising that teachers use a limited number of open-ended questions because it is in keeping with research that suggests that across contexts, early childhood teachers tend to use fewer open-ended questions than closed questions (Smith & Dickinson, 1994). However, this finding is discouraging because these open-ended questions provide an opportunity for children to explain their thinking about building knowledge rather than being provided the knowledge by the teacher, and this type of thinking is emphasized by highly effective teachers (Taylor, Pearson, Peterson, & Rodrigues, 2002). This finding related to low-support scaffolds suggests that there may be missed opportunities to allow for higher-order thinking during writing and that some contexts may lend themselves more to different types of supports.

  Medium supports. The results of the analysis regarding the use of medium-support strategies revealed that medium-support strategies were used infrequently, only about four times per observation. Given the excerpts that illustrate teachers' beliefs that children's level of enthusiasm and confidence about writing is so important, one reason that teachers may rarely use medium supports may be because these types of supports require the child to struggle through the process of producing letters to represent the sounds heard in a word. This process is difficult for young children who are just developing their orthographic knowledge. Teachers who are not actively considering the

differences in children's development may think that this type of support will lead to too much frustration for the typical kindergartener.

The most common way that teachers used medium supports was by supporting children by providing structure about where a child should focus his or her attention in a word or sentence (e.g., "what word is next?" or "what is the first sound that you hear?"). When considering the key actions for scaffolding, Wood et al. (1976) found that it was essential for the adult to identify the actions that are critical to completing the task. By drawing children's attention to the part of a word or sentence to give their attention, they are in keeping with Wood and colleagues' (1976) suggestions for key actions during scaffolding.

It is encouraging that teachers are using strategies to help children know where to focus their attention when spelling; however, the low occurrence of these types of strategies in each observation suggests that there may be some missed opportunities for this type of support. Further, the limited opportunities for a high demand on the children reduces the opportunities for children to attempt spellings and for teachers to react to their errors. Low- and medium-support scaffolding strategies are critical because they afford the child an opportunity to attempt the task and then allows the teacher an opportunity to follow up on the child's errors. This idea is supported by Rodger's (2005) study findings in which teachers of children who made considerable progress provided opportunities for errors and differentiated the support they provided. It is essential to provide opportunities for challenge and result in errors so there is a task to be scaffolded. This corroborates of the finding of Wood, Bruner, and Ross (1976) and suggest that

teachers may need to provide more opportunities for children to attempt the task before providing a higher level of support.

High supports. Turning to a discussion of findings related to high-support scaffolding strategies, study findings demonstrated that teachers used high-support scaffolding strategies more often than any other type of scaffold. High-support scaffolding strategies occurred about 12 times per 30-minute observation. Most strategies used were instructional (i.e., eliciting, direct questioning, co-participation, modeling, and orienting) or task regulation (i.e., making it more concrete, reducing choices). This finding diverges from that of Pentimonti and Justice (2010) when they examined the use of scaffolding during book reading in preschool classrooms and found that teachers typically relied on low-support scaffolds; however, it converges with the findings of Gerde and Bingham's (2012) study on preschool writing where teachers used predominately high-support scaffolds. In the case of Pentimonti and Justice (2010) and Gerde and Bingham (2012), both studies found that the teachers only used about one to two high-support scaffolds per observation, while the four teachers in my studies used an average of 12 high-support scaffolds per observation. While this number is higher than the number of supports found in other studies, it is still relatively small considering it took place over a 30-minute writing block.

Although in some cases high-support scaffolding strategies were in response to a failed lower support strategy, the high-support scaffolding strategy was often a first attempt by teachers. This finding is not surprising when considering other studies in the primary grades that have explored teacher interactions and have shown that teachers tend to prefer a "telling" or modeling style of instruction (Taylor, Pearson, Clark, and

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Walpole, 2000) The heavy reliance on high-support scaffolding strategies should be carefully evaluated as literacy research suggests that the more "telling" that occurred during instruction, the less that children grew (Taylor, Pressley, et al., 2001). It is unclear why teachers are providing more high-support scaffolding strategies, but one reason may be that teachers are responding to the children's performance and that performance does not correspond to the reported levels. Another explanation may be that teachers rely too heavily on higher support scaffolding strategies and the high supports may not be necessary or most fitting for children's needs. In any case, it is important, when the highest percentage of scaffolds are high-support strategies, that teachers consider if they are relying too heavily on teacher-directed strategies rather than responding to children's needs.

   Summary of varied use of scaffolding strategies. Although findings showing that teachers use a range of scaffolds to support children are encouraging, it is important to note that these strategies are not used with a high frequency. The overall use of scaffolding strategies was limited. This finding of limited scaffolding use is in keeping with other research on the use of scaffolding strategies in early childhood classrooms (Gerde & Bingham, 2012; Pentimonti & Justice, 2010), although teachers in this study used higher rates of scaffolds than in other reviewed studies. In regards to the types of strategies provided, low and medium-support strategies were provided much less often than higher-support scaffolding strategies. This distribution of strategy choices could be in keeping with the needs of children, but it also suggests that because children are not afforded the opportunity to attempt to apply their skills then the teacher does not have the opportunity to help children work through their errors made while attempting the task.

Finding 2: Scaffolding Strategies in Context. In this study, I aimed to explore how teachers use scaffolds across the contexts of their writing time. In regards to the use of scaffolds across contexts, teachers tended to favor the use of scaffolds during independent writing with nearly half of all recorded scaffolds occurring during independent writing time; however, they did provide scaffolds across all contexts. Teachers used an average of five scaffolds per writing period in whole group, six instances of scaffolding per writing period in small group, and nine scaffolds per writing period during independent writing.

It is encouraging that teachers are meeting with children across a range of contexts to support writing development. It is especially promising that they are using scaffolds to interact with children when they are writing independently. In 2001, Pressley and colleagues looked at literacy instruction in first grade classrooms across five school districts in the United States. They explored the characteristics of the most and least effective classrooms and found in effective classrooms, teachers were "very ready to provide assistance as needed by students" (p. 48). Further, in keeping with the supports and practices that I found during independent writing in this study of effective teachers:

> If the spelling in a piece of writing was problematic, the teacher might suggest to the student to check the word wall or a dictionary for help in spelling some of the words, but the teacher did not spell the words for the student. If more help was needed, the teacher might do some opportunistic reteaching about how to use the word wall or cue the use of the sound-stretching strategy, perhaps modeling such skills for the student struggling with writing. (Pressley et al., 2001, p. 48)

The teachers in my study performed during independent writing very much like the ones Pressley and colleagues found in effective classrooms, suggesting that teachers should continue with these practices.

Research also supports the importance of small group instruction, as it is commonly found in classrooms of very effective teachers (Taylor, et al., 2000). It is important to note that within these small groups, the teachers in my study were intentional about grouping based on assessment data and emphasized that groups were fluid and changed based on observations and new assessment data. Despite having small group instruction that included an objective related to children's orthographic development (e.g., correctly represent the initial sound), teachers provided only six scaffolds per observation in that context. This finding suggests that teachers may not see the connection between the curriculum's posed objectives and how these objectives could be used to guide their scaffolding. Further, they may miss opportunities to provide feedback on children's writing attempts even though they are working in the appropriate contexts.

Scaffolds As Related to Orthographic Knowledge

Another goal of this study was to address the ways in which the kindergarten teachers differentiated their use of scaffolding strategies based on their perception of children's existing orthographic knowledge. I specifically addressed how teachers perceived children's orthographic differences and how these scaffolds are related to the teachers' perception of the children's orthographic needs. Findings demonstrated that all four teachers in this study recognized a difference in orthographic needs among kindergarteners in their classrooms and saw a need for providing different scaffolds based on children's needs; however, the choice of scaffolds did not always match what research tells us about children's orthographic needs at that level.

Finding 3: Teachers' Perception of Differences in Orthographic Knowledge.

Results relevant to teachers' perceptions of differences in orthographic knowledge revealed that teachers did see a difference among their children's orthographic knowledge. In the sections that follow, I discuss their perceptions of reading and writing achievement.

Writing achievement. In terms of writing achievement, teachers were asked to report the achievement level of children in their classroom. Specifically, they reported on levels related to their spelling development. The findings demonstrated that teachers reported a range of levels and commented on the progression of development within their classroom. This finding suggests that teachers do recognize that children's spelling progress develops along a continuum and that teachers use multiple sources of evidence—observations, spelling assessments, and writing samples—to support their grouping of children.

Reading achievement. Turning to teachers' perception of reading achievement, the teachers in this study reported that all of the children were at the emergent level. Based on studies that correlate the spelling and reading levels of children, there should be more diversity in the reported reading achievement levels of children in these classrooms. Some teachers reported that they were instructing children at the emergent level until the literacy assessment occurred. This finding suggests that teachers do not feel confident reporting the achievement levels without the support of assessment data. This finding converges with previous research suggesting that teachers' knowledge of reading may be limited (Moats & Foorman, 2003).

Deciding on a scaffold for the kindergarten writer requires an understanding of what they are doing in both spelling and reading. Scaffolding enables the teacher to provide effective instruction that accommodates each child's individual needs. To properly scaffold children and provide instruction within their ZPD, the teacher must have a solid knowledge of the concepts being taught and of the developmental sequence in which children typically advance (Pressley et al., 1996). In other studies, survey results from classroom teachers reveal that despite being literate and experienced, many teachers have an insufficient grasp of the spoken and written language structure, which would make it very difficult to teach children who are working to attain the alphabetic principle or to teach beginning readers (Moats, 1999; Moats & Foorman, 2003, Chessman, McGuire, Shankweiler, & Coyne, 2009). In most cases "until we are faced with a class of children who are learning how to read symbols that represent speech sounds and word parts, we may never have analyzed language at a level required for explaining and teaching it" (Moats, 1994, p. 12).

Moats and Foorman (2003) surveyed nearly 200 elementary teachers, including kindergarten (n=50). The findings were consistent with earlier studies, showing that nearly 20% demonstrated knowledge that would be expected for certification and another 45% demonstrated "a partial or tentative conceptual grasp of language, reading development, and informal assessment" (Moats, 2003, p.36). With this limited knowledge, it is not surprising that teachers have difficulty using assessment information and providing instruction at children's level.

According to Moats (1994), this knowledge of literacy development is critical because children's progress depends on the teachers' ability to interpret and respond

appropriately to their spelling errors. For example, if a child uses an inventive spelling of *d* for dog, it is critical that the teachers provide appropriate scaffolds to help the child move forward to the next stage. The teachers would need to know that the child would benefit from listening to the final sound in a word and provide verbal scaffolds to assist him in hearing and writing the g to produce a final spelling of *dg* for dog. Further, Moats argues that it is critical for a teacher to be informed so he or she is able to pick the best examples for teaching decoding and spelling. The teacher should be able to use assessment data to determine which features a child should study and which words are related to those features. Lastly, Moats claims that the having an informed teacher is necessary because the teacher should be able to organize the information for instruction. He or she should be able to determine the sequence and pace of the instruction.

It is encouraging that teachers are using assessment data to guide their grouping of children; however, it is discouraging that they do not feel empowered to make instructional decisions based on their observations of children or in response to how they are performing in other areas of literacy such as spelling. In this study, nearly nine weeks of instruction had occurred before teachers felt confident with reporting and instructing at children's reading development levels. This finding is particularly surprising given that two of the teachers in this study have participated in graduate courses related to literacy. Research suggests that teachers' self-efficacy is associated with children's literacy gains, so it is a logical next step to explore ways to improve teachers' self-efficacy (Guo, Piasta, Justice, & Kaderavek, 2009). This finding suggests that more training is needed to build teachers' knowledge of how spelling and reading levels are related and efforts to build teachers' self-efficacy in this area.

Summary. The teachers in this study acknowledge that writing/spelling and reading develops along a continuum and that children need a range of supports to move forward along that continuum. They reported a range of writing (spelling) levels in their classroom; however, these do not correlate with the reported reading levels. Despite articulating the connection between reading and writing, this finding suggests that it is possible that teachers' knowledge regarding the synchrony in writing and reading is incomplete and could pose a problem in matching scaffolds to children's orthographic needs.

Finding 4: Scaffolds Based on Differences In Orthographic Knowledge. In terms of the differing use of scaffolding strategies, the study findings indicate that teachers did use different scaffolds for different levels of learners and they were somewhat accurate in providing scaffolds for children based on their perception of children's orthographic needs. These findings converge with those of Henderson and colleagues (2002), suggesting that teachers do differentiate the level of support based on the needs of the children. The teachers were more accurate in their match of supports for children who were beginning to use invented spelling (early to middle letter name spellers), but provided more mismatched scaffolds for children below and beyond that level.

Scaffolds At The Early Emergent Stage. Findings demonstrated that this group of children made up 27% of the classroom population; however, teachers only provided matched scaffolds about 65% of the time; however, there were only about five scaffolds per observation for this group. These scaffolds were most commonly given during independent writing time and 70% were high-support scaffolds. The areas of focus for an

emergent learner should be (1) print knowledge, (2) alphabet knowledge, and (3) phonological awareness. Regarding print knowledge, only about 4% of the scaffolds were related to print knowledge. Clay's (1975) work informs our knowledge that children at this level will likely distinguish their writing from drawings and use circular or linear scribbles to express their message. They need work on directionality as it is typically inconsistent at this stage (Clay, 1975; Cabell, Tortorelli, & Gerde, 2013). Teachers did focus more on letter formation at this stage and used high-support scaffolding strategies such as modeling to support children. They often referred children to alphabet charts or other print resources to support their learning. This focus is in keeping with the needs of children at this level of development—children at this level do not use letters in their writing (Henderson, 1985). Regarding phonological awareness, the supports were focused on sentence segmentation. This focus is appropriate considering that children at this stage would lack any understanding of COW-T and thereby not yet use space between words (Morris, 2003). These findings suggest that teachers are properly supporting children in many instances; however, the supports are so limited that there are many missed opportunities to support children in ways that they need to move forward in their orthographic knowledge.

One interesting finding at this level was the use of scaffolds to help the child perform well beyond their level of development. For example, teachers were observed providing a high level of support to assist a child in fully spelling words that were outside of what would be expected. Although it was appropriate that they provided a high level of support, the task was still very laborious. The child was successful, but teachers should be cautious because this behavior could lead to unintended outcomes of the child

feeling overwhelmed. Research surrounding motivation has concluded that children are most motivated when tasks are just beyond their current level of performance but not too challenging or overwhelming (Vygotsky, 1978).   Based on the interview data and teacher observations, it is clear that providing motivation for children was a high priority; therefore, this finding suggests teachers may not fully consider the outcomes of their scaffolds.

   Scaffolds At The Middle Emergent Stage. In terms of scaffolds provided to the 33% of children at the middle emergent stage, teachers only provided matches about 78% of the time and use scaffolds with this group about six times per observation. These scaffolds were most commonly given during independent writing time and the majority were high-support scaffolds. It is not surprising that children at this level of development would receive high scaffolds because at the lower level they may need more support; however, even at lower developmental levels, children can greatly benefit from low and middle-support scaffolding strategies. The areas of focus for an emergent learner should be (1) print knowledge, (2) phonological awareness, and (3) beginning to integrate alphabet knowledge and phonological awareness. Regarding print knowledge, such as with children at the early emergent stage, they need continued support in working on concepts of print; however, these supports were only used in about 7% of the interactions with these children and many of those were when they were instructed in whole group. Again, at this stage, teachers focused on the sentence segmentation level of phonological awareness. This support is appropriate for children to help building their phonological awareness; however, it is expected that teachers may also be working on beginning sound segmentation, yet teachers did not provide support in this area. Children at this stage are

just learning to merge some of their alphabet and phonological awareness (Morris, 2003); therefore, it is appropriate that teachers provided high-support scaffolds to children around the integration of these skills. By using a high-support scaffold, they modeled this practice for children so they would begin to use it and launch into the next stage of development. Teachers reported that they felt less confident in instructing children at the emergent level and although the findings supported that they were reasonably successful when they supported them, the number of supports were minimal.

Regarding mismatches, teachers typically pushed children beyond their ZPD and expected children to work on parts of the word (middle and ending sounds) that did not match their developmental needs. At this level of development, children have an incomplete knowledge of the alphabetic system (Ehri, 2000), so they are only focused on some of the sounds, not every sound in the word (Beers & Henderson, 1977). Focusing on all sounds within a word is beyond the children's ZPD and diverging from the recommendation that effective teachers should provide enough support to allow children to make progress but not do the task for the child (Wood et al., 1976). Again, teachers provided a high level of support, but it is concerning that the scaffolds are not consistently matched to the children's needs. In summary, these findings suggest that teachers are providing support for children in many of the ways that children need; however, the number of supports is limited and there may be a need for educating teachers on the best way to support children at this level of development.

Scaffolds At The Late Emergent-Early Letter Name Stage. Turning to a discussion of findings related to the 20% of children at the late emergent to early letter name stage, teachers provided matches an impressive 90% of the time; however, they

provided scaffolds for these children only about two times per observation. These scaffolds were most commonly given during independent and small group writing time and they balanced their supports between high and low-support scaffolds. It is not surprising that children at this level of development would receive high-supports scaffolds. The areas of focus for this level of development should be on attention to initial sounds (Beers & Henderson, 1977; Henderson, 1985; Temple, Nathan, & Temple, 2012). This stage of development is hallmarked by a grasp of the alphabetic principle and application of this principle to the initial or salient sound in a word (Beers & Henderson, 1977). Application of the alphabetic principle requires children to integrate their phonological awareness and alphabet knowledge skills. Teachers supported children in practicing these skills in isolation and integrating them. The findings among this group suggests that the focus of these scaffolds are fitting and teachers seemed well prepared to provide appropriate supports for these level of children; however, the scant use of these scaffolds suggests that teachers may not be providing support to these children as frequently as it is needed.

  Scaffolds At the Middle-Late Letter Name Stage. In terms of findings related to the 8% middle to late letter name-alphabetic stage children, teachers provided one scaffold per observation for the children at the middle to late letter name stage. The teachers provided more matched scaffolds for children in the middle letter name stage than at the late letter name stage. Teachers provided more high-support scaffolds for the children at the middle letter name stage and more evenly across levels of support (high, medium, and low) for the late letter name spellers. The areas of focus for this level of development should be on full word analysis. In other words, the teacher should work

with children to apply the alphabetic principle across the entire word (Beers & Henderson, 1977). Findings at this level revealed that teachers did work with these children to integrate their knowledge and provided a range of supports in doing it. Teachers also supported children in mastering blends and digraphs as need. One interesting finding is that when teachers were not matching children's needs, they were providing support that was too simplistic for children. In other words, they were providing support for tasks that the child should be able to complete on his or her own. In keeping with the Rodger's (2005) findings, teachers should allow children to take risks to provide opportunities for mistakes.

Scaffolds At the Within Word Pattern Stage. The investigation of findings related to scaffolds provided to the two children at the within word pattern stage revealed that teachers provide minimal support that is aligned with the needs of children at this stage. It is expected that supports at this stage are focused on the application of patterns in words; however, the teacher tended to provide support that was below the child's ZPD thereby providing support on tasks that the child would be expected to do independently. Interestingly, at this stage, she provided support on features such as the digraph *th*. Although I would expect the child to know this digraph, he did not.

This finding, coupled with the analysis of other mismatches, leads to two possible explanations for this incident and other mismatched scaffolds given during the study. The first is that the teacher did not properly assess the child or report the correct level. Bodrova and Leong (2007) assert that for effective scaffolding to occur, the teacher must know how to assess the child. A limitation of this study is that I relied on teacher reported assessment data that was not corroborated with any other source. If a trained reading

specialist or researcher had tested the children's spelling abilities, they may have reported different levels. A second explanation in regards to the mismatched scaffolds is related to the idea of the overlapping wave perspective that was evaluated by Sharp, Sinatra, and Reynolds (2008) regarding spelling development. This study is important because it builds the case that spelling development is more complex than simply moving from stage to stage. This understanding of spelling development as a quasilinear progression could aid in explaining why teachers provide scaffolds that are seemingly mismatched. It may not match what we expect for children at that level but it may be a suitable response to the child's current struggle with spelling a word.

   Summary. Teachers recognized the differences among the orthographic development of the children in their classroom and provided scaffolds that often matched their developmental needs; however, they were more successful in providing those matches to children who were at the beginning and middle letter name stage. Children below this level received a fair number of scaffolds but the matching to their needs was less consistent. Children above this level received little support related to their needs. These findings suggest that the teachers may benefit from support that builds on the good work they are doing in supporting children and provides them with more knowledge on how they can support children outside of the beginning and middle letter name stage.

Practical Implications

   This capstone focused on four teachers in a single district. While the findings of this study cannot be generalized beyond this group, there are several practical implications that can be considered for these kindergarten teachers. Bodrova and Leong (2007) found that for effective scaffolding to occur, the teacher must know (1) how to

help a child who is completing a task, (2) how to assess the child, and (3) how to determine the appropriate instruction for the child. Other researchers have corroborated the finding that teacher knowledge is necessary to providing effective instruction (Moats, 2009; Piasta, Connor, Fishman, & Morrison, 2009). The results of my study highlight the needs for training and support for teachers in the area of scaffolding writing with relation to responding to children's developmental needs. The following sections are related to professional development and training for kindergarten teachers regarding the use of scaffolding strategies. Table 10 describes the four recommendations for this district.

Table 10

Recommendations for Scaffolding Writing to Support the Development of Orthographic Knowledge

Recommendation 1: Teacher should participate in a professional development workshop focused on the range of scaffolds that are useful for kindergarten writers.
Recommendation 2: Teachers should explore the use of procedures and strategies that will teach children to be independent in using available supports. They should also use strategies to encourage children to work together to provide support to classmates.
Recommendation 3: To build teachers' self-efficacy and improve teachers' knowledge of children's orthographic development, teachers should receive training regarding the development of reading and spelling.
Recommendation 4: Teachers should be provided on-going support regarding their efforts to provide appropriate scaffolds.

Implication 1. In terms of the varied use of scaffolding strategies, results revealed that teachers used a range of strategies; however, they primarily relied on the use of high-support scaffolding strategies. One reason may be that they are unaware of the full range of scaffolds that can be used and when those strategies should be used. All but one teacher in this study ranked their training in writing as lower than desired. This finding converges with evidence that teachers do not feel adequately trained to teach writing which corroborates with previous research (Bridge & Hiebert, 1985; Graham et al., 2008; Hart et al., 2010). Thus, there is a general lack of knowledge regarding the most effective practices to teach writing. Given the teachers awareness that they are not properly trained, a logical next step would be to consider Recommendation 1- reinforcing the use of a range of scaffolds by training teachers on the range of options (high, medium, low) and how they should be used. For example, teachers could be trained to use low-support strategies when appropriate and adjust the use of scaffolds based on how the child is performing. Table 11 details the essential elements to reinforce and teach during the professional development workshop. It is also recommended that the presenter of the professional development should emphasize the use of scaffolds that provide motivation and those that require children to use their developing orthographic knowledge. Teachers should be reminded that they should use the least amount of support needed for the child to perform the task and to use strategies that allow children to make mistakes. Moreover, teachers should be reminded to provide guidance around errors.

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Table 11

Recommendation 1: Professional Development on Scaffolding

Recommendation 1	Existing Practices to Reinforce	
Teachers should participate in a professional development workshop focused on the range of scaffolds that are useful for kindergarten writers.	• Continue to provide a range of scaffolds as needed.	
	Instructional Suggestions to Enhance Existing Practices	
	General Suggestions	
	• Emphasize the use of scaffolding strategies that provide motivation and those that require children to use their developing orthographic knowledge. • Provide the least amount of support needed for the child to perform the task. • Use strategies that allow children to make mistakes and the teacher to provide guidance around the errors.	
	Reinforce During Professional Development	**Teach During Professional Development**
Low Support	Children may benefit from the teacher providing motivation and identifying the key actions for the child to attend to within the task (Wood et al., 1976). Scaffolds should continue to focus on motivating children and drawing their attention to what they should focus on.	Low support scaffolds are those that encourage higher-order thinking skills. Teachers should consider using open-ended questions to support children and follow up with other supports as needed.

	Scaffolds to continue using: • Specific praise (e.g., "Nice job, Chad. You wrote from left to right." Or "You wrote a lot of letters because watermelon is a very long word. Good job.)	Possible Scaffolds to Use: • Reasoning (e.g., Why did you write an e at the end of the word?) • Generalizing (e.g., What could you use to help you figure out how to write the word? How could you decide what letter to write if I wasn't here?")
Medium Support	Children benefit from the teacher providing structure about where a child should focus his or her attention in a word or sentence (Wood et al., 1976).	Although teachers provided some medium-support scaffolding strategies, these were used less frequently than other supports. Teachers should provide medium-support scaffolds to allow children an opportunity to attempt the spelling. If necessary, the teacher can follow up with a higher-support scaffold.
	Scaffolds to continue using: • Sequencing (e.g., What word is next?" or "What is the first sound that you hear?")	Possible Scaffolds to Use: • Contradiction (e.g., "You said the word started with /s/, but you wrote a t."
High Support	Children may benefit from high-support scaffolding strategies when the demand on the child needs to be dramatically reduced to allow the child to be successful.	High-support scaffolding strategies should be reserved for times when children need them to complete the task so teachers can provide additional support to help children work through their errors while attempting the task. They may often come after a lower-support scaffolding strategy is used, when the child is just beginning to work on a specific feature or skill, or when there is clear evidence of high frustration. The presenter should emphasize the unintended consequences of providing scaffolds that are too high or are used to support children with features that are beyond their zone of proximal development (e.g., supporting an emergent writer in writing the word dog with a d-o-g).

	Scaffolds to continue using: • Eliciting (e.g., I hear a /b/ at the beginning of bat, so I would write a b. What sound do you hear at the beginning of bat?) • Direct Questioning (e.g., /b/at What letter says /b/?) • Co-participating (e.g., Say it with me /b/at /b/at) • Modeling (e.g., First I listen for the first sound /b/at /b/. I hear /b/ so I write a b.") • Orienting (e.g., The word bat is in our poem from yesterday. You can find the word bat to copy.") • Making More Concrete (e.g., "Put up one finger as you say the sounds in the word. /b/ /a/ /t/") • Reducing Choices (e.g., What do you hear at the beginning of bat? /b/ or /c/?)	The teachers used a wide range of high-support scaffolding strategies, so no new high-support scaffolds will be presented.

Implication 2. Despite the use of scaffolding across contexts, the overall number of scaffolds was not high across all areas. Teachers should consider ways to support children across a range of contexts. One way to address this implication is by considering Recommendation 2 and reinforcing the importance of a print rich classroom (e.g., alphabet charts, word walls, sound boards) and the importance of teachers training children to use those resources to support their spelling during independent writing. Further, teachers should continue children to work together during writing time. One strategy would be the promising instructional technique of Peer Assisted Writing Strategies (PAW) (Puranik, Patchan, Lemon, Al Otaibia, 2016). PAW is a peer assisted writing strategy that involves pairing students and teaching them specific prompts, suggestions, and feedback to use with each other. The children are given opportunities to practice using the strategy within a set of highly structured content lessons such as the child is expected to copy a word then the partner checks and gives feedback. Finally, as part of PAWS, the children are actively engaged in writing activities. The use of PAWS or other lessons to teach children to provide feedback to one another would provide an opportunity for children to be supported in their writing when the teacher was unavailable. Also, if the teacher was reassured that children were working together to support their peers, it would allow her to provide multiple, intentional scaffolds to individuals and have meaningful conversations about their writing without rushing to the next student.

Table 12

Recommendation 2: Increasing Children's Opportunities for Supports

Recommendation 2	Existing Practices to Reinforce
Teachers should explore the use of procedures and strategies that will teach children to be independent in using available supports. They should also use strategies to encourage children to work together to provide support to classmates.	• Continue to have a print-rich classroom with print that children can readily access during writing time (e.g., alphabet charts, word walls, sound boards). • Continue to teach children to use the available print during whole group, small group, and independent writing time. • Continue to encourage co-participating during writing.
	Suggestions to Enhance Existing Practices
	General Suggestions
	• Consider training teachers and children on the instruction techniques of Peer Assisted Writing Strategies (PAW) (Puranik, Patchan, Lemon, Al Otaibia, 2016). • Provide all teachers with individual sound boards, individual alphabet charts with upper and lowercase letters and a picture with the corresponding sound, or name plates with the alphabet, and word wall materials. • Encourage teachers to display work written as a group and poems that they are reading and refer to them often. • Include "print-rich environment" as a key component of the environment that principals look for during their observations of kindergarten teachers.

Implication 3. One surprising finding of this study was that teachers did seem to use knowledge about spelling development to inform decisions about reading development and vice versa. Moats (2009) and Piasta, Connor, Fishman, and Morrison (2008) demonstrate findings that supports the idea that specialized knowledge of reading development is essential for providing appropriate differentiated instruction. One

implication of this study's findings is that these teachers would benefit from more training on the synchrony of reading and writing development. Teachers reported children's spelling levels that were not in sync with the reading abilities that are expected. For example, one teacher reported all of her children were at the emergent stage for reading but several children were reported to be at spelling at the within word pattern stage. This report suggests that she does not have a firm understanding of what these stages of development mean; moreover, she does not appear to understand that knowing the child's spelling developmental level would help inform her of the child's reading level. In this case, it is not reasonable that a child could be consistently spelling words correctly with short vowels but simultaneously not have a grasp of the alphabetic principle or a stable COW-T, two defining characteristics of the emergent stage.

Recommendation 3 extends on the professional development suggested Recommendation 1 by focusing on the understanding of reading and spelling development. Prior to training, it would be important to find out what the previous training entailed and also assess teachers' knowledge and use that information to build a powerful training session for teachers. When teachers' knowledge of reading and spelling development is built, their self-efficacy may naturally improve.

Table 13

Recommendation 3: Building Teachers' Knowledge and Self-Efficacy

Recommendation 3	Existing Practices to Reinforce
To build teachers' self-efficacy and improve teachers' knowledge of children's orthographic development, teachers should receive training regarding the development of reading and spelling.	• Teachers should continue to regularly assess students in reading, writing, and spelling. • Teachers should continue to receive support by reading specialists and reading coaches in their building with specific attention to assessment and using assessment results to guide instruction.
	Suggestions to Enhance Existing Practices
	General Suggestions
	• Survey teachers on previous training on reading and spelling (including content and methods of training). • Training should include strategies that complement previous methods that were effective and offer alternatives to strategies that were ineffective. • Training should include an overview of the development of reading and spelling and how the development is related. • Training should include spelling goals for children at each level of development and verbal scaffolds that are appropriate for each level of development. • Training should include an opportunity for teachers to consider the reading and spelling development of their students and how these levels are in sync or not. When not, reading coaches or specialists should be provided support to help the teacher determine the reasons for the discrepancy. • Teachers should be reminded that they are trusted to make instructional decisions about their children's needs.

Implication 4. Research suggests that teachers may benefit from intensive and ongoing professional development that is connected to practice (Darling-Hammond, 2001). After a training on scaffolds that includes modeling and an opportunity to work with peers to determine appropriate scaffolds based on the developmental level of

children, the teachers should return to their classroom with an opportunity to apply what they have learned. It may be appropriate to provide one-on-one coaching to teachers that will include feedback that identifies strengths and ways to improve their practice. Table 14 describes how the ongoing supports may look.

Scaffolding is difficult because choosing the scaffold is dependent on knowing the child's instructional needs. The teachers may benefit from their own set of scaffolds as they are expected to apply training regarding the use of scaffolds in the classroom. Further, the teachers may benefit from a written list of options for scaffolds at each level and a document that identifies goals for writers at each level of development. These resources will provide teachers a scaffold to remind them of the range of strategies that they can when supporting specific children.

Table 14

Recommendation 4: Providing Ongoing Support For Teachers to Provide Appropriate

Scaffolds

Recommendation 4	Existing Practices to Reinforce
Teachers should be provided training and on-going support regarding their efforts to provide appropriate scaffolds.	• Teachers should continue meeting with small groups to deliver instruction based on children's orthographic knowledge.
	Suggestions to Enhance Existing Practices
	General Suggestions

	• Following a gradual-release model, the teachers should experience a professional development workshop and ongoing training in which:
	  ○ **Modeling:** The teachers should have the opportunity to see examples of scaffolds and discuss why they are appropriate based on the child's developmental level.
	  ○ **Guided Practice:** The teachers should view examples of children's writing or children's questions and identify how they would respond based on the child's level of reading development.
	  ○ **Independent Practice:** The teachers should receive one-on-one coaching in their classroom about the scaffolds that they use with children.
	• Ongoing supports to help the teacher may include a chart of high, medium, and low support scaffold examples or a list of goals for each stage of development.

Limitations

Learning to read and write is a complex process. By narrowing the focus to a 30-minute instructional block, this study could potentially neglect other periods of writing instruction and supports that contribute the process of learning to write. For example, this study does not look at the supports provided during the children's word study time, reading block, or times when the teacher may provide informal writing instruction

throughout the day; however, the choice of looking at the 30-minute writing period was intentional. Thirty minutes of writing is the time period suggested as critical for writing growth (Graham, McKeown, Kiuhara, & Harris, 2012); however, despite this recommendation, observations of full 90 minute blocks of classroom literacy instruction have revealed that only six to ten minutes of writing instruction is occurring (Puranik et al., 2014). The purpose of this study was to see what supports the teacher may provide when the 30 minutes of writing instruction is planned and delivered.

It is important to consider other potential limitations of this study including my influence as the researcher in the classroom. As the author of the curriculum being used in this district, the teachers had knowledge of my beliefs about literacy instruction. Three of the participants were part of the initial training on the curriculum that I had delivered. I worked closely with two of the participants as part of the team of teachers who piloted the curriculum. This experience could have influenced their behaviors or answers during the observations or interviews. It is unknown how social desirability, including my presence, influenced the teachers' answers to survey or interview questions or how it influenced their actions during my observations. Efforts have been made to lessen this influence. For example, I provided a survey to be completed alone, provided the participants with as much information as possible about the study, and spent one month involved with the classroom. Further, as the only researcher, I cannot check for research bias effects by comparing my data collection to that of other researchers.

I intentionally chose to study this kindergarten classroom during the beginning to the year so I could capture how teachers interact with children who are at the very earliest stages of spelling development. This decision lead to a sample that included mostly

children at the emergent stage of development. The findings may have looked different if this study took place at another time period during the academic school year.

It was necessary to know the developmental spelling level at which teachers believed that the students were performing. In this study, these levels were provided by the teacher. She likely used a combination of previous assessments and observations to provide levels. It is possible that these levels are not the same that would be found if a formal assessment was given by a researcher; however, my goal was to learn how teachers respond to students' needs based on their belief about where the child is performing.

Recommendations for Future Research

The research on scaffolding of writing in the kindergarten classroom is limited. Further research is needed to understand the ways that teachers can make effective use of writing time. Specifically, a closer examination of the interaction between the child and teacher could be useful. The question/comment- response pattern that occurs when teachers are scaffolding children's writing attempts makes sequential analysis an ideal technique for this exploration because it allows the researcher to explore if a certain event is likely or unlikely to influence the occurrence of the next event (Bakeman & Gottman, 1997). Using sequential analysis methods, researchers could explore (a) whether the level of scaffold influences the child's mark (correct vs. incorrect) or (b) whether the child's response impacts the subsequent scaffolds. Although the present study begins to provide an understanding of how teachers support children, it is very important to know which, if any, of these supports lead to a positive response from children.

Further, there appeared to be many factors, aside from orthographic knowledge, that may influence a teacher's decision to use a particular scaffold with a child. For example, it is unknown if a teacher provided supports that were too simplistic because of factors outside of considering a child's orthographic knowledge such as the other academic, intellectual, or emotional needs of the children (Henderson et al., 2002). Further, a child's orthographic knowledge is rapidly growing in kindergarten. A teacher's scaffold may be in reaction to a child's performance during a previous lesson and therefore, she is supporting the child based on that knowledge rather than the reported level from the beginning of the year assessment. A qualitative approach could involve teachers reflecting on their decisions about scaffolds during and after a writing lesson so the researcher could capture factors outside of perceived level of orthographic knowledge that may influence a teacher's choice of scaffolds.

Final Thoughts

Children continue to struggle with literacy development across the country and at startling rates. One way to support children's literacy development is through bolstering their orthographic knowledge, which includes spelling, during the writing time. This study sought to explore the ways teachers were supporting the development of orthographic knowledge during the writing period and if they were considering the children's existing orthographic knowledge when providing these supports. The findings of this study revealed that teachers do use scaffolding strategies, although limited, to support children in their development of orthographic knowledge. They use a range of strategies that offer low, medium, and high support for children; however, these supports may not always be matched to what is perceived as their level of development. Further,

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teachers may lack a firm understanding of the connection between spelling and reading and therefore, they may not be maximizing this opportunity. Taken together, the findings of this study suggest that teachers may benefit from more training on the connection between spelling and reading and how to best support children during writing time to maximize the potential of writing time to promote orthographic development.

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Appendix A

Research Invitation Email

Hello, I am hoping to partner with you for a study that I am conducting. I am asking you to consider participating in this study. In this study, I will be observing writing instruction. I would like to observe your formal writing block once per week for eight weeks. While I am in your classroom, I will try to avoid disrupting the learning process as much as possible. I may take photographs of items in your classroom and may also ask for student writing samples. I may need you to remove the names from the writing samples and provide those to me. At one point during the study, I will ask you to complete a survey and participate in an interview. This interview will last less than an hour. If this is something that you might be interested in doing, please let me know and I would be happy to talk further with you about the details. Thank you for considering this request.

Sincerely,

Stefanie B. Copp

Appendix B

Writing Into Literacy Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in the study.

Purpose of the research study: The purpose of this study is to explore the ways in which teachers interact with students in the context of formal writing time.

You have been selected for this study because you are a teacher of kindergarten students that has a daily writing time with her students. This project is part of the requirements for my dissertation.

Research has shown that writing instruction can influence early reading skills of kindergarten students. My research will extend existing work by focusing on the ways in which teachers support orthographic growth among different learners during kindergarten writing instruction time. Understanding the ways in which teachers currently support students will inform district leaders on how to support teachers in continuing to improve literacy instruction.

What you will do in the study: If you agree and are able to take part in this study, you may participate in the following research activities:

- Observations of your normal writing instruction (30 minutes) two days per week for approximately four weeks. The anticipated timeline is September – October 2016. Total observation per classroom will be approximately four hours.
- Complete a survey. In addition to other information, you will be asked to provide information about your grouping of students for reading and writing (30 minutes to one hour). If you feel uncomfortable, you can skip any question or may stop the survey at any time.
- Participate in an interview near the end of the study (30 minutes to one hour). If you feel uncomfortable, you can skip any question or may stop the interview at any time.
- Allow audiotaping of the observations and interviews to use be used to cross check notes against the audiotape.

Time required: The total amount of time required for this study is about 5-6 hours over about a four-week period:

- Enrollment in the study for about four weeks.
- Observations of your classroom for 30 minutes two days per week for four weeks.
- Completing the survey will take about 30 minutes to one hour.
- Participating in the interview will take about 30 minutes to one hour.

Risks: There are no known risks.

Benefits: There are no direct benefits to you for participating in this research study. The study may help us understand ways teachers can best support students during writing time.

Confidentiality: Teachers and children will not be personally identified in any reports or publications that may result from this study. A special number (code) will be used to identify you in the study and only the investigator will know your name. We will keep the collected information in databases stored on a secure server and/or in locked cabinets. Only research staff will be able to access data. Any personal information about you or your students that is gathered during this study will remain confidential to the fullest extent possible.

Data linked with identifying information:

The information that you give in the study will be handled confidentially. Your information will be assigned a code number. The list connecting your name to this code will be kept in a locked file. When the study is completed and the data have been analyzed, this list will be destroyed. Your name will not be used in any report. The interview and observations will be audiotaped and these digital files will be deleted after the study is complete and data have been analyzed.

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty.

How to withdraw from the study: Your decision to take part is voluntary. You may decide to stop taking part in the study at any time. If you choose to withdraw from the study after data collection, your data will be used unless you specify otherwise.

Payment: You will receive no payment for participating in the study.

If you have questions about the study, contact:
Stefanie Copp
1030 Cossman Court Forest, VA 24551
Telephone: (434)8418547
copp@virginia.edu

Sonia Cabell
Research Assistant Professor
Center for Advanced Study of Teaching and Learning
Curry School of Education, University of Virginia
405 Emmet Street South
Charlottesville, VA 22904
Telephone: (434) 243-7757; Email: Sonia@virginia.edu

If you have questions about your rights in the study, contact:
Tonya R. Moon, Ph.D.

Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr Suite 500
University of Virginia, P.O. Box 800392
Charlottesville, VA 22908-0392
Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs
Agreement:
I agree to participate in the research study described above.
Signature: _____ **Date:** _____

Appendix C

Parent Notification Letter

Dear Parent,

My name is Stefanie Copp and I am conducting a research study in your child's class. I am interested in studying how writing instruction is delivered in kindergarten classrooms. I will be in your child's class once each week for eight weeks for about thirty minutes per session. While I'm in the classroom, I will observe the teacher's instruction methods, take notes, and audio record the lesson. I may also take photographs of objects in the room, but will not photograph your child. I will not record your child's name or any other materials that will identify your child. I may collect writing samples, but I will have the teacher remove your child's name before giving them to me. Your child will not do anything outside of his/her normal classroom activities and there is no risk to your child. Your child's participation will not affect his/her grade.

If you have any questions or concerns about the study, or if you would like to withdraw your child from the study, please contact me at:

Stefanie Copp
copp@virginia.edu
434-841-8547

If you have questions about your rights as a research participant, please contact:
Tonya R. Moon, Ph.D.,
Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr Suite 500
University of Virginia, P.O. Box 800392
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Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs

Sincerely,

Stefanie B. Copp

Appendix D

Data Accounting Log

	Site/Participant A	Site/Participant B	Site/Participant C	Site/Participant D
Consent Signed	09/01/16	09/01/16	09/01/16	09/01/16
Survey Delivered	09/01/16	09/01/16	09/01/16	09/01/16
Observation 1	09/06/16	09/06/16	09/07/16	09/07/16
Observation 2	09/08/16	09/08/16	09/09/16	09/09/16
Observation 3	09/14/16	09/14/16	09/13/16	09/13/16
Observation 4	09/15/16	09/15/16	09/14/16	09/14/16
Observation 5	09/20/16	09/20/16	09/19/16	09/19/16
Observation 6	09/22/16	09/22/16	09/21/16	09/21/16
Observation 7	09/26/16	09/26/16	09/27/16	09/27/16
Observation 8	09/28/16	09/28/16	09/29/16	09/29/16
Survey Collected	09/21/16	09/22/16	09/07/16	09/07/16

Interview	09/26/16	09/26/16	09/27/16	09/27/16

Appendix E

Field Note Template

Setting: **Time:** **Number of students:** **Adults:**	

FIELD NOTES	ANALYTIC NOTES
Physical Environment/Context: Physical Setting : Whole Group, Small Group, Individual Description of Participants Materials Visual supports	Questions to Self Interpretations Emerging Hypotheses Emerging Themes

Observation:	
Look specifically for evidence of supports of orthographic development. Sequence of activities Description of activities Description of students that engage with teacher (include description of their writing or reading) Teacher/Student comments in quotes Description of student/teacher interactions Description of teachers' actions during teacher led activities	
REFLECTIVE JOURNAL	

Appendix F
Survey
Adapted from Cutler & Graham (2008)

Section I: Please complete the following questions

1. Name _____
2. School _____

3. How many years have you taught? _____

4. Please circle your highest educational level:

   Bachelor's   Bachelor's +   Master's   Master's +   Doctorate

4. What was area of specialization for your highest degree?

   _____

5. Please circle your gender: male   female

6. Please circle all races that apply: White   Black   American Indian
   Asian   Pacific Islander   Hispanic   Other

7. Please circle your evaluation of the **quality** of the preparation you received for teaching writing within your teacher certification program. If you did not attend a teacher certification program, check here. ____

exceptional   very good   adequate   poor   inadequate

8. How many children are in your classroom? _____

9. How many children in your classroom receive a free or reduced lunch? ____
   don't know_____

10. How many of the children in your classroom are: _____ White
    _____ Black _____ American Indian _____ Asian
    _____ Pacific Islander _____ Hispanic
    _____ Other _____ Multiracial

11. How many of the children in your classroom receive special education services? _____

11. Circle how often do you have a designated writing time with your class.

I	I	I	I	I	I	I	l
Never	Several Times a Year	Monthly	Several Times a Month	Weekly	Several Times a Week	Daily	Several Times a Day

11. Consider the overall writing achievement level of all students in your classroom. List the names of students who fit within each classification. Write 0 if you have no students within a particular classification. The combination of your answers should total the number of students in your classroom.

Students who **draw and scribble**: _____

Students who write with **letters and letter-like forms**: _____

Students who write with **salient & beginning sounds:** _____

Students who write with **beginning and ending sounds:** _____

Students who write with **beginning, middle, and ending sounds:** _____

Students who write with **simple long vowel patterns:** _____

11. Consider the overall reading achievement level of all students in your classroom. List the names of students who fit within each classification. The basal, Guided Reading, and Reading Stages have been provided; however, if you use another classification system, please feel free to write your list on the back of this paper. Write 0 if you have no students within a particular classification. The combination of your answers should total the number of students in your classroom.

Students at **Readiness/Guided Reading A-B/Emergent-Early Letter Name Level**:

_____

Students at **Preprimer 1/Guided Reading C/Early Beginning Level:**

_____

Students at **Preprimer 2-3/Guided Reading D-E/Middle Beginning Level:**

_____

Students at **Primer/Guided Reading F-G/Late Beginning Level:**

_____

Students at **First/Guided Reading H-I/Early Transitional Level:**

_____

Students at **Second or higher/Guided Reading J+/Transitional-Advanced Level:**
_____

12. Please list what you do for writing instruction.

_____

_____

_____

Section II: Please circle the appropriate response.

        SD-Strongly Disagree
        MD-Moderately Disagree
        DS-Disagree Slightly
        AS-Agree Slightly
        MA-Moderately Agree
        SA-Strongly Agree

1. I like to teach writing.	**SD**	**MD**	**DS**	**AS**	**MA**	**SA**
2. I effectively manage my classroom during writing instruction.	**SD**	**MD**	**DS**	**AS**	**MA**	**SA**
3. I like to write.	**SD**	**MD**	**DS**	**AS**	**MA**	**SA**

4. I am effective at teaching writing.   **SD   MD   DS   AS   MA   SA**

Section III: Please complete each question below

1. Please indicate what percent of your 30-minute instructional time for writing is involved with whole group, small group, and/or individual writing.

   whole group _____ %
   small group _____ %
   individual writing group _____ %

2. Do you use a commercial program to teach writing, handwriting, spelling, or any other aspect of composing?   _____ Yes   _____ No

   What programs?

Please respond to each question about your designated writing time.

1. Please list the top **three** activities that you use most often during writing time.

   _____

   _____

   _____

2. Please list the top **three** ways you help children who have difficulty with a writing task.

   _____

   _____

   _____

3. Please list the top **three** ways that you motivate children to write.

   _____

_____

_____

4. Please describe your most common response to "how do I spell this word?"

_____

_____

_____

If you have any additional information about your writing program that you would like to share with us, please do so here.

Appendix G

Semi-structured Interview Protocol

<u>Introduction</u>:

Hello, thank you for taking the time to talk with me today. As you know, I am conducting research in "Anderson" County in order to describe writing instruction in the kindergarten classroom. I am also interested in finding out how writing can support reading. I am especially interested in your ideas about writing instruction and the things that you consider to be important.

The information that you give in my research will be handled confidentially. Your information will be assigned a pseudonym and your name will not be used in any report. If I ask you anything that you do not feel comfortable answering please feel free to tell me that you do not want to answer that question.

I would like to tape record the interview and will take notes in case it fails. Is that okay with you?

Do you have any questions for me before we begin?

<u>Follow-up questions from the survey:</u> In the survey, you described writing instruction in your classroom. I want to give you a few minutes to look over the survey, is there anything that you would like to add?

<u>Topic 1:</u> Teacher Instruction

- <u>Question 1:</u> In the survey, I asked about modeling writing for your students, will you tell me more about what decisions you make when you are planning to model for students?
    - o <u>Probe 1:</u> Can you give me an example of when you modeled writing in a small group and how your plans change for each of your groups?

- o Probe 2: What makes you change your plans for each group?

- o Probe 3: How do you know if a child understands what you modeled?

- o Probe 4: How do you decide which words to have students write interactively?

- Question 2: Question 9 asks about individual conversations, how do you figure out how to respond to what a child says during an individual conversation about their writing?

  - o Probe 1: Can you give me an example of when you helped a child with a word that he or she didn't know how to spell?

  - o Probe 2: How do you decide if a child needs an individual conference or one-on-one instruction?

Topic 2: Student Practice

- Question 1: What would you consider to be important things to say to help students be successful with their writing when they are working individually?

  - o Probe 1: What would you say are important materials for students to use to help them move forward in their writing development?

  - o Probe 2: Let's look at Section 4 of your survey. You marked X and X as practices that you use most often. Why do you use these the most?

  - o Probe 3: How do you decide which supports to provide for different students?

- Question 2: How would you describe "best practices" for teaching kindergarten students how to write?

Topic 3: Using assessment data to respond to individual student needs

- Question 1: Please look at this student sample. If you were going to tell a student teacher about the needs of this student, what would you say?
  - o Probe 1: What other information would you want to describe this student's needs?
- Question 2: How would you use the information from this sample you just shared to plan instruction for this student?
  - o Probe 1: What supports might you provide to help this child be successful?
  - o Probe 2: What would you say if this child asked you to help her spell (misspelled or in sample)? What else might you do if she did not respond appropriately?
- Question 3: How do you see writing relating to reading?
  - o Probe 1: Do you see an overlap in your reading and writing groups? In what ways?
  - o Probe 2: Do you see any practices that you use in reading to be similar to those that you use in writing?
- Wrap-up: Is there anything else that you would like to tell me at this point?

Thank you so much for your time today!

Appendix H

Artifact Record Excerpt

Artifact Name	Context of Collection	Date	Analytic Note	Summary of Content
090816 What Writers Do chart A	In whole group meeting area on easel	90816	This chart was generated by the class in a previous lesson. It shows one of the scaffolds that this teacher encourages children to do- "help each other". It may also serve as an example of the way she accepts pictures/words or wherever the child is developmentally.	What Writers Do Chart
092816 alphabet chart	Site 1	92816	This artifact shows an alphabet chart that the teacher provided a student to provide support of letters/sounds that were unknown. These were not always present, but the teacher used this as a resource.	alphabet chart

Appendix I

Initial Start Codes

CATEGORY: CODE-RELATED LITERACY	ABBREV-IATION: CR	DESCRIPTION	Example:
CR: PHONOLOGICAL AWARENESS	**CR-PA**	**Any phonological awareness activity.**	
RHYME	CR-PA-R	Awareness that words sound the same at the end	"What other word we know that sounds like sat?"
SENTENCE SEGMENTATION	CR-PA-SS	Awareness that a sentence can be broken into individual words	"How many words are in our sentence?"
SYLLABLES	CR-PA-S	Awareness that words can be broken into larger chunks	"Let's write one part of our word at a time. Let's clap out the parts."
ALLITERATION	CR-PA-A	Awareness that words can sound the same at the beginning	"Write the first sound you hear in 'teenager'." "Listen to me say like, llllike. What do you hear?"
ONSET-RIME	CR-PA-OR	Awareness that words can be divided by a beginning sound and a chunk	"What is the first part you hear? /b/ Now what do you hear next? /at/"
PHONEMIC AWARENESS	CR-PA-P	Awareness of the smallest unit of sound within the word (phoneme level)	"Listen for all the sounds you hear in this word."
CR: ALPHABET KNOWLEDGE	CR-AK	Any activity or interaction relating to the identification or production of a letter name or sound. Subcodes	"He wrote the letter W. Good."
			"You are right about that j sound, but in this word /j/

		may include letter sounds (CR-AK-S) or letter names (CR-AK-N).	is spelled with a g.”
			“What sound did you hear?”
			“You said /p/. What letter says /p/?”
CATEGORY: SCAFFOLDS	**ABBREV- IATION: S**	**DESCRIPTION: Any speech only or joint and speech gesture used to support children's developing orthography.**	**EXAMPLE**
ELICITING	S-E	The teacher models the answer to elicit a response. The keywords will be the ideal response.	*Listen to the word /ppp/uppy. What is the first sound you hear? /ppp/uppy.*
REDUCING CHOICES	S-R	The teacher asks a question and asks them to select from two or three choices. Key words will be *or* or *which*.	*Which sound do you hear at the beginning of puppy? Is it /s/ or /p/?*
CO- PARTICIPATING	S-C	The teacher provides support by having students work together to answer the question.	*Turn and tell a friend what you hear at the beginning of puppy.*
GENERALIZING	S-G	The teacher asks students to extend their thinking beyond the content by connecting it to other words. Key words will include *you, your, other times, other words,* or *remember.*	*Think of another word that starts like puppy. Paul starts like puppy, so what letter will I write?*
EXPLAINING/ REASONING	S-R	The teacher asks the student to explain what, why, or how. Key words include *how do you know, why did you, what,* or *think.*	*How did you know to write a p at the beginning of the words puppy?*

CATEGORY: RESEARCH BASED PRACTICES	ABBREV-IATION:P	DESCRIPTION	EXAMPLE
WRITING IN DAILY SCHEDULE	P-S	Writing is included in the daily schedule and writing happens during that time.	The teacher has the writing block on her schedule. She conducts the lesson during that time.
EXPLICITLY MODELS WRITING	P-M	Writes in front of the students and explicitly draws attention to the process of what and why she is writing.	Teacher will model writing a word or sentence in front of the students. She comments on her decisions about her writing (e.g., I wrote s because I heard the /s/.)
ENCOURAGES INVENTED SPELLING	P-IS	Encourages and/or accepts invented spellings.	Teacher may say "write the sounds you hear." Teacher may say "Good, you wrote the sounds you heard."
MAKES WRITING OPPORTUNITIES MEANINGFUL	P-M	Teacher sets a purpose for the writing with the intention to motivate.	Teacher may say "We are practicing adding pictures to words because that is what good writers do and you are a good writer." Teacher may say "I chose to have the kids write about

			Easter because they are excited about the holiday."
WRITING MATERIALS ARE AVAILABLE	P-M	Paper (lined/unlined), pencils, markers, pens, crayons, white boards	Items may be observed in student use or teacher may say "You can use the lined paper on the shelf."
ENGAGED IN GROUP WRITING ACTIVITY	P-G	All students are supported to be involved in the writing activity.	Individual student may be asked to help write part of an idea that the group is generating.
			As the teacher is modeling writing, students may be asked to write part of the sentence or word on their white board.
WRITING AT HOME	P-H	Attempts are made to educate parents on the process of invented spelling.	A newsletter or homework may include a note about expecting invented spelling.
USE OF TECHONOLOGY	P-T	Interactive white board, document camera, or computer is used to support student's writing	A teacher may use an interactive white board during a group writing experience.

Appendix J

Descriptive Code Book with Data Excerpts

Scaffolding Codes Adapted from Conner et al. (2005)

Code	Description	Sample Excerpts
High Support		
Instructing	This parent code reflects a group of high-level scaffold that includes eliciting, co participating, direct questioning, modeling, and orienting.	
Modeling	The teacher exposes the child to a model (e.g., write words for the child to copy, name letters, rereading the words for the child, taking dictation).	Teacher: *played /p/ /p/ /p/ like in penguin /p/ /p/.* Teacher touches the p for the child to write.
Eliciting	The teacher models and extends the model by asking the child to imitate. It includes a repetition of the question, words such as "now your turn", or "now I want you to…".	Teacher: *Let's do our vowel song. A says /a/ E says /e/ I says /i/ u says /u/* as she points to the alphabet chart. *Oh! What letters says /u/?* She points the u on to alphabet chart. *What letters says /u/?* Child: *U*
Direct Questioning	The teacher directs the child to a specific action or response by asking a closed question. When the question is not explicit, it will be determined by the presence of an answer by the child. For example,	*What do you hear at the beginning of green? /g/ /g/ /g/*

		What do you hear in vegetable/s/. The child responds, *s*.	
	Co-Participation	The teacher encourages the child to work with her or a peer to complete a task.	Teacher: *Ask your neighbor, say, can you help me with /th/?*
	Orienting	The teacher suggests tools or strategies to facilitate the child's performance (e.g., verbally describes how to perform a task or draws attention to relevant aspects of the situation. (e.g., look at your name tag, check the word wall).	Child: *What makes a /th/ sound?* Teacher: *That's a hard one. Think about Thursday.* She points to the calendar. Child: *th*
	Task Regulation	This parent code reflects high-support scaffolds in which the teacher modifies certain aspects of the situation to facilitate the child's mastery by increasing the value or simplifying or clarifying the task (i.e., making more concrete or reducing the alternatives).	
	Making More Concrete	The teacher adjusts the situation by decreasing the level of symbolic representations and memory demands by providing visual other nonlinguistic cues (e.g., lines for writing, putting up fingers for words in sentence, or touching a body part for each phoneme in a word).	*Did /ddd/ What else do you hear for did? Do you hear a d? Let's do head and shoulders for did.* /d/ (touched head) /i/ (touched shoulder) /d/ (touched waist).

	Reducing Choices	Giving the option of two or more choices.	*If I have this whole big sheet of paper? Where do I start writing? Over here?* (points to the right). *No, I start at the top left.*
Medium Support			
	Holding In Memory	This parent code reflects a group of medium-support scaffolds in which the teacher shares part of the memory demands to help the student focus on the response or solution to the problem.	
	Summarize and Reminders	The teacher summarizes events and actions and offers important information to help the child complete a task.	*Now write pig. Stretch it out.*
	Cognitive Structuring	This parent code is a medium level scaffold. It includes sequencing and contradictions.	
	Sequencing	The teacher helps the child find a starting point or continue an action in the correct sequence.	1. *What is the first thing you hear?* 2. *What is your next word?*
	Contradictions	The teacher helps the child recognize inconsistencies between actions, events, or facts.	*You told me a t but you wrote an r.*
Low Support			

Open-Ended Questioning	This parent code reflects a group of low-level scaffold. It encompasses generalizing.	
Generalizing	The teacher reminds the child of an earlier learning experience or something that is not tangible.	Child: *How do I write a d?* Teacher: *You know how to write a d. It's in your last name.*
Providing Feedback	This parent code reflects a group of low-support scaffolds that include encouragement, reasoning, and acknowledgement and informational talk.	
Encouragement	The teacher offers verbal encouragement and praise to boost the child's confidence and sense of self-competence. The encouragement will include a positive affirmation (good, nice job, I'm proud of you for...).	*Good. You tracked it and found the letter i.*
Reasoning	The teacher asks the child to explain the decision.	Teacher: *Read what you have? What's here?* Child: *E* Teacher: *For what word?* Child: *Story* Teacher: *Oh! I see. Stor-e That's the E for story.*
Acknowledgement and Information Talk	The teacher acknowledges the child's writing attempt or statements by making appropriate comments or	*I see how you are making lines and putting down letters that you hear.*

	describing the child's action.	
Context		
Whole Group	The children were all seat together and participating in a teacher-directed activity. Typically the teacher is in the front of the room and the children are seated on the rug or at their desks.	Students were seated on the rug facing the TA and the easel. On the easel was the list of What do Writers Do and reminders about sharing with friends.
Whole Group-Independent	During a whole group activity, the teacher provides support to an individual.	She calls on children to read their writing to the class. Thomas. Thomas told his story about working in the shop on a truck.
Small Group	The teacher works with several children while the rest of the class works on a different activity.	She called 4D, 3D, 6D, 19D, 13D to her table.
Small Group-Independent	During the small group activity, the teacher provides support for an individual.	She went around and asked each child what they were writing about. Each child told her.
Independent	The teacher assigns an activity and the children work at their desks at their own pace to complete the assignment.	She hands out papers and students go back to their seats to write. She reminded children that she would be meeting with 3 people today but that they could raise their hands if they needed her.

Phonological Awareness	This parent code reflects a group of codes that requires the child to use their phonological awareness.	
Sentence Segmentation	A scaffold that that requires the child to segment the words within a sentence.	*I want to show you how I would go about writing a sentence. I want to write the sentence. I like pizza. Let's clap that out. All clap and say the sentence. Let's count those words. All put up fingers and say the sentence. How many words is that?*
Beginning Sounds	A scaffold that requires the child to identify the beginning sound of the word.	*The word is house. Can you help me think of the beginning sound?*
Phonemic Awareness	A scaffold that requires the child to identify the smallest unit of sound in a word (phoneme level).	*What else do you hear in pig? Teacher holds up one finger for each phoneme. /p/ /i/ /g/*
Print Knowledge	A scaffold that requires the child to use their knowledge of how print words (e.g., print direction).	*Where am I going to start writing?* Points to top left.
Alphabet Knowledge	A scaffold that requires the child to use only letters or letter sound knowledge	1. Child: *How do I write a g?* Teacher: Tracks the letters until they get to

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		the g. *That is a g.*
		2. Teacher: *What else do you hear in cream? /m/. What letter says /m/?*
		3. Teacher: *What else, /d/?* Child: *D*
Phonological Awareness and Alphabet Knowledge	A scaffold that requires the child to use both their phonological awareness and alphabet knowledge to complete the task.	What do you hear at the beginning of hair?
Concept of Word	A scaffold that requires the child to practice his or her concept of word. Typically, this included when the teacher or child was finger pointing to the words.	As she wrote the words she said them. After she wrote a, she asked "what do I put between this word and the next one? Space! She then said the word teacher and wrote it. She then read the words I like to as she touched them.

Appendix K

Specific Data Sets In Use	Procedural Steps	Decision Rules	Analysis Operation			Conclusions	Research Comments (Reflections)
			Readying for Analysis	Drawing Conclusions	Confirming Conclusions		
Teacher A Day 1-2 Field Notes; jottings; analytic notes	I used the existing code set, but after applying it to the data, I found that 10 out of 31 codes were coded as other scaffolds so I returned to the analytic notes and jottings for all observations and compared that to the original scaffolding resource: *Ladders to Literacy: A Preschool Activity Book* (O'Conner et al., 2005) and found several more codes to add to my existing list.	Recode all existing data using the new set of codes.	x			Added codes: Encouragement, Acknowledgement, Sequencing, Matches Interests/Experiences, Direct Questioning, Orienting, Modeling	See Reflective Journal

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Analytic Log

(Miles, Huberman, and Saldana, 2014, p. 318)

Appendix L

Reflective Journal Excerpt

10/23/16
Today I entered the Teacher A field notes into Dedoose. I decided to enter all field notes for each teacher upon the advice in the Saldana Coding Manual for Researchers. As I began coding, I quickly realized that the set of codes that I started with will not be sufficient. There are so many scaffolds that don't fit with the start codes. I went back to *Writing Into Literacy* and spent some time thinking about how these would fit with what I am seeing. The analytic log reflects my decisions around codes as I had to add some new codes that Justice and Pentimonti did not use in the shared reading research. Most of the added codes were high supports and a few were low or medium. The bulk of the codes are either high or low. The teacher is either providing feedback (low) or instructing (high). Most of the interactions center around alphabet knowledge (n=38) as compared to PA (n=10) and both (n=15). The Letter and Letter Like Form students were scaffolded most often (n-61) but that is not surprise as 8/17 students were reported as letter and letter like forms. Salient and Beginning Sounds cam in next at 25 occurrences. During independent writing time, she had twice as many encounters with LLL form students as S and Beginning Sounds. Again, it is important to note that there were the most students in this level, so this may account for the difference. With the LLL Form group, the most frequently used scaffolding strategy was from the set of instructing scaffolds. Modeling, Direct Questioning and Orienting were used most commonly. Co participating was used less and eliciting was not used at all. Although not as many instances, the same scaffolds were used for the salient and beginning sounds group. With the higher group (BME) there were fewer instances because only two students were in this group, but the teacher still used high and low scaffolds although not as much variation was used. Again, this could be due to the difference in numbers. My next step is going to be to look at the excerpts for co-participating, modeling, and eliciting and be sure that I am clear on how those items will be coded. I will make notes in the analytic log and in the coding book. My concern about those categories at this point is that there is some inherent overlap so I want to just be sure I am consistent with my definition and how those are coded.

Match and Mismatch Criteria

	Match	Mismatch
Drawing/Scribbling	Drawing vs. Writing, Print Direction, letter formation, pointing to words (COW), copying words	Writing with beginning sounds or beyond
Letters & Letter Like Forms	Space between words, use letters, writing the salient sound or beginning sounds, write with more letters, return sweep	Previous, writing with medial or ending sound (unless it is the salient sound)
Salient and Beginning Sounds	Writing the salient or beginning sound, write multiple sounds for each word, ending sound, concept of word, the teacher may provide the beginning sound bat /b/ as a model	Medial vowels or complex features (blends, digraphs) (except ch,sh,wh,th)
Beginning and Ending	Ending sound, beginning and ending sound for each syllable, using word families, write the medial vowel in a cvc word, ch,wh,th,sh, COW	Providing the beginning sound (bat /b, b, b/), copying words
Beginning, Middle, and Ending	Medial vowel in a cvc word, blend, digraph at beginning or the end of a word	Providing the ending sound
Simple Long Vowel Pattern	Long vowel in a cvce word, simple long vowel patterns, r controlled vowels	Complex long vowel patterns, inflected endings