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Perspectives of School Speech-Language Pathologists (SLPs) and Principals on the Role  
of SLPs in Spelling Acquisition.

By

Kayla Noelle Knueppel

A Thesis Submitted in  
Partial Fulfillment of the  
Requirements for the Degree of

Master of Science  
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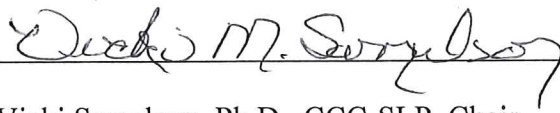
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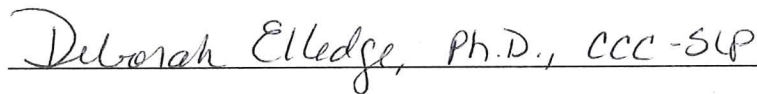
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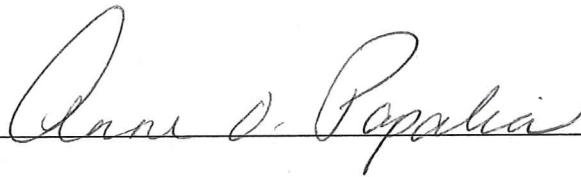
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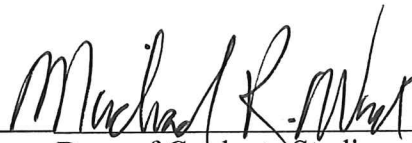


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Perspectives of School Speech-Language Pathologists (SLPs) and Principals on the Role  
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By

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The University of Wisconsin-Eau Claire, 2015  
Under the Supervision of Dr. Vicki Samelson

For several decades, SLPs have engaged in discussions regarding whether or not their scope of practice included the acquisition of spelling skills. Based on the connection between language and spelling, SLPs should have a role in supporting the acquisition of spelling skills with the students on their caseloads. Current research investigating whether school SLPs have a role in spelling instruction and what this role entails is limited. Investigation of their perspectives is important in order to determine if SLPs play a role and what influences the extent of their involvement.

One possible influence is the education and background knowledge of SLPs and principals. An additional potential influence is the school environment and collaboration between professionals as established by the principal. It is possible that SLPs could serve as support staff if collaboration is emphasized in the schools. The aims of the current study were: 1) to examine the relationships between the content and theoretical knowledge students were exposed to in undergraduate and/or graduate school, their participation in professional continuing education, and the SLPs' and principals' views on spelling, 2) to determine the role school SLPs play in supporting the acquisition of spelling skills by the students on their caseloads, and 3) to determine the perspectives of

public school principals in regards to SLPs' role(s) in spelling and literacy instruction, including collaboration between professionals.

Results of the current study showed that most Wisconsin school-based SLPs are not providing spelling intervention. SLPs reported an overall lack of confidence in their education and training related to spelling, when compared to other literacy skills such as phonological awareness. In addition, SLPs and principals reported time constraints for implementation of spelling. The school environments and collaboration between professionals reported by the principals in this study appear to support SLP involvement in spelling intervention.

Debra M. Sampson      05-11-15  
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## **I. Literature Review**

For several decades, Speech-Language Pathologists (SLPs) have engaged in discussions regarding whether or not the inclusion of goals to support the acquisition of spelling skills is within their scope of practice (Constable, 2014). More recent evidence describing the connections between language, literacy, and spelling (e.g., Apel & Lawrence, 2011; Berninger, 2000) has more SLPs examining their role in supporting the acquisition of spelling skills in students with oral language disorders. To date, however, few studies have investigated the current practices of school-based SLPs with regard to spelling acquisition. The purpose of the current study was to investigate the role(s) SLPs employed in the Wisconsin public schools play in spelling acquisition, as well as the factors that influence their role(s).

### **What is the Role of an SLP?**

Most definitions of language are broad and encompass many aspects including both the oral and written modalities. For example, according to the American Speech-Language-Hearing Association (ASHA, 1982), “language is a complex and dynamic system of conventional symbols that is used in various modes for thought and communication” (para. 3). Likewise, language development is a multifaceted process that includes five components: phonology (speech sounds), semantics (word meaning), morphology (word formation), syntax (word combinations), and pragmatics (language in context).

Speech-language pathologists (SLPs) have knowledge and education in each of these language components. The caseloads of SLPs working in the schools frequently

include students with oral language impairments (LI), however there has been a long-standing discussion regarding the scope of practice of SLPs in regard to written language. For over 30 years, SLPs have expressed differing opinions on whether literacy-based written language skills, including spelling, are within their scope of practice (Newman, 2014). For example, a recent exchange between practicing SLPs in ASHA's Language Learning and Education Special Interest Group's online forum included comments regarding the role of SLPs in reading, writing, and spelling. Several SLPs responded with concerns about implementing these areas into practice due to their lack of knowledge on those topics. However, it was also reported that SLPs with knowledge and enthusiasm about literacy are often deterred by their supervisors and administrators from being involved with children who have reading, writing, and spelling concerns (Constable, 2014).

In 2001, ASHA released a document describing its position on the roles and responsibilities of SLPs in the areas of reading and writing.

Appropriate roles and responsibilities for SLPs include, but are not limited to (a) preventing written language problems by fostering language acquisition and emergent literacy; (b) identifying children at risk for reading and writing problems; (c) assessing reading and writing; (d) providing intervention and documenting outcomes for reading and writing; and (e) assuming other roles, such as providing assistance to general education teachers, parents, and students; advocating for effective literacy practices; and advancing the knowledge base. These roles are dynamic in relation to the evolving knowledge base and have implications for research and professional education (p. 18).

Over a decade after ASHA's statement advocating that SLPs should support their students' written language development, it is still unclear whether school-based SLPs are incorporating these recommendations into practice, and whether those SLPs who do engage in literacy and written language interventions also include goals specifically related to spelling.

### **Oral Language and Literacy Development**

To understand the reasons why SLPs should support the development of spelling skills, it is important to explore the relationships between oral language and literacy skills such as reading, writing, and spelling. Oral language skills are directly connected to the acquisition of literacy skills, and are at the foundation for the development of reading and writing, which are more complex processes. As Berninger (2000) discussed, language includes four systems: aural, oral, reading, and writing, each building on the prior system. In typically developing children, aural language development begins with the first sound an infant hears, and oral language development follows with the utterance of the infant's first sound. The remaining two systems, reading and writing, typically begin developing later when the young child is looking at and listening to his or her first book and making first marks on paper. Although each of these systems begins developing early, children continue to refine these systems throughout childhood and adolescence. These four systems develop in overlapping waves with each affecting the other (Berninger, 2000). In other words, children who are challenged by the aural and oral language systems will often also be challenged by learning to read and write. More specifically, knowledge of

the phonological, morphological, semantic, and orthographic systems of language is essential for the development of these literacy skills.

**Phonological knowledge.** A child's level of phonological awareness, or the understanding of sounds within oral language, predicts the development of early literacy skills (Bird et. al., 1995; Mann & Foy, 2007; Rvachew & Grawburg, 2006; Schuele & Boudreau, 2008). Children who have better phonological awareness skills will learn to read at a faster pace than children who struggle with these same skills (Anthony & Lonigan, 2004). Phonological awareness begins with basic sentence and word awareness. As infants, children perceive adult speech and begin to discriminate phonetic differences and stress patterns in the sentences and words they hear. This listening process precedes the production of first words (Kuhl, 2004). Word awareness is refined as the child produces more words and begins to recognize specific words within a sentence. Children then realize that words can be broken into smaller segments as they begin to identify and generate rhymes and syllables. The development of phonemic awareness occurs later and includes identification, segmentation, blending, and manipulation of individual phonemes, or sounds, within the words a child hears. Table 1 below describes examples of each level of phonemic awareness.

Table 1

*Phonemic Awareness*

Type of Phonemic Awareness	Example
Identification	/d/ is the initial sound in “dig”
Segmentation	“dig” → /d/-/ɪ/-/g/
Blending	/d/-/ɪ/-/g/ → “dig”
Manipulation	Say “dig”. Take out the /ɪ/ and put in a /ɔ/. The new word is “dog”.

**Morphological knowledge.** Morphological awareness, or understanding the smallest meaningful units of oral language, also impacts the development of literacy skills, especially in older students. Morphological awareness includes knowledge about base words (i.e., root words) and derivational and inflectional morphemes (i.e., affixes, such as prefixes and suffixes). Derivational morphemes are those from which new words are created by adding a morpheme. For example, adding –al to the base word “nation” changes the word to “national.” In contrast, inflectional morphemes provide minimal change to the meaning of a word. For example, adding –ing to the word “run” changes the tense of the word without changing the entire meaning of the word. As students begin to use their literacy skills to learn, morphological awareness is important for successful higher-level reading and writing (McCutchen, Green, & Abbott, 2008).

**Semantic knowledge.** In addition to the phonological and morphological components of words, students must also develop semantic, or word meaning, knowledge to support their literacy skills. Children develop semantic knowledge through listening to and reading words in context. Because semantic knowledge is based on individual experiences, each child will develop semantic knowledge on a continuum that will impact their vocabulary use in reading and writing. (Christ, 2011). For example, children from a low socioeconomic background are at risk for having limited semantic knowledge that they can access during literacy tasks due to their lack of rich language experiences (Fernald, Marchman, & Weisleder, 2013). In contrast, well-developed semantic knowledge supports the development of reading comprehension and spelling skills (Roth, Speece, & Cooper, 2002).

**Orthographic knowledge.** Orthographic knowledge, or the information required to transform oral language into written language, also supports literacy development. As reading skills begin to develop, the difficulty of skills progresses with a shift in focus to phonics, or the relationship between letters and sounds, which includes phoneme-grapheme correspondence (i.e., pairing sounds with letters). This relationship between oral and written language provides a foundation for the development of written language skills, including spelling. According to Apel (2011), orthographic knowledge consists of two components: (a) orthographic patterns of the language, and (b) mental graphemic representations (MGRs). Orthographic patterns are the rules governing which letters represent certain sounds, including sound combinations and the order of sounds within words. For example, in the English language the combination of 'ck' represents the /k/ sound and is only used at the end of words and 'shp' is not an allowable combination of phonemes. MGRs are the stored representations of written words, or parts of words, that are developed over time. For example, after some exposure to the word "cat," children will store the spelling of that word as c-a-t. The same can be true for parts of more ambiguous words in which children may store the parts of the word that are clear to them. For example, initially the word "tennis" may be stored as t-e-n-s, while the remaining letters in the word will require additional processing using other knowledge bases, such as orthographic. MGRs allow children to quickly store, or "fast-map" while spelling and reading, without having to process each individual letter (Apel, Wolter, & Masterson, 2006). As orthographic knowledge is developed, an individual's written language skills improve, including spelling skills as will be discussed later.

The English language, both oral and written, is a pattern-based language despite the common belief that it is an unpredictable, irregular language. In regard to oral language, English contains several pattern-based elements, including sentence structure (e.g., subject-verb-object), phonological patterns (e.g., rhyming words), prosody and intonation (e.g., rising intonation at the end of questions), and verb usage (e.g., “was” is a singular past tense form of “be”). These patterns of oral language extend to written language as well, however in written language additional patterns (e.g., spelling patterns) become increasingly important. Several researchers have discussed the phonological, orthographic, and morphological patterns of spelling (e.g., Apel & Lawrence, 2011; Masterson & Crede, 1999). Analysis of these patterns within children’s spellings allows teachers and other professionals to create individualized interventions specific to the error patterns (e.g., Masterson & Apel, 2000).

### **Oral Language, Literacy Skills, and Spelling Development**

The relationship between oral language and literacy skills includes spelling acquisition because spelling is a skill supported by oral language and developed as part of the acquisition of both reading and writing skills. Spelling of words in the English language is often believed to be a complicated and illogical task that relies only on the memorization of words and is not directly related to the development of oral and written language skill. Many teachers struggle to teach their students using a language-based spelling approach due to their own misconceptions about the language-based patterns in spelling (Fresch, 2003). SLPs also need explicit knowledge of these relationships in order to provide services that benefit the students on their caseloads with spelling concerns.

**The relationship between spelling and oral language.** In the past, it was popular belief that spelling was simply the memorization of words as opposed to a pattern-based language skill. Several research studies (Apel & Lawrence, 2011; Lombardino, Bedford, Fortier, Carter, & Brandi, 1997; Masterson & Crede, 1999) have shown that learning to spell includes the application of pattern-based phonological, morphological, and semantic knowledge, all of which are components of oral language skill. As spelling acquisition occurs, children generate invented spellings, which are attempts to spell words by making judgments based on prior knowledge. Phonological, morphological, and semantic knowledge, in combination with orthographic knowledge, impact the invented spellings of unfamiliar words by allowing students to develop MGRs of words that will be used throughout their reading and spelling development (Apel, Masterson, & Brimo, 2012). MGRs are useful in spelling acquisition, however if incomplete or inaccurate MGRs are developed, students will need to rely on their phonological, orthographic, and morphological knowledge to spell accurately (Apel, Masterson, & Brimo, 2012).

As previously discussed, phonological awareness, and more specifically phonemic awareness, is an important skill in the acquisition of spelling. Several studies have shown that phonemic awareness instruction improved the spelling skills of children in the primary grades (Ball & Blachman, 1991; Carson, Gillon, & Boustead, 2011; Leask & Hinchliffe, 2007; Tangel & Blachman, 1992). When learning to spell, children use their phonological knowledge to divide words into individual phonemes, or “sound out” the words.

While phonological knowledge allows students to segment the word into individual phonemes, orthographic knowledge provides information about which letters and letter patterns represent these phonemes (Apel, 2011). As previously described, orthographic knowledge impacts written language development through the understanding of the orthographic patterns and MGRs. During reading tasks, typically developing children store, or “fast-map,” the orthographic information of words to create MGRs, which increases their spelling accuracy if the MGRs accurately reflect orthographic patterns (Apel, Wolter, & Masterson, 2006). Children with language impairments (LI), however, often require more exposure to these language patterns before they can accurately map, retrieve, and apply new knowledge (Ukrainetz, 2006).

More recently, morphological awareness, or the understanding of the smallest meaningful units of language, was shown to also have a specific impact on spelling acquisition. (Apel & Lawrence, 2011). Knowledge of morphemes not only provides a method for the individual to think about the parts of each word, especially those for which MGRs are unavailable, but also to understand the necessary modifications required when adding morphemes (Apel, Masterson, & Brimo, 2012; Bourassa & Treiman, 2001). Many English words maintain morphological constancy, which means root word spellings do not change when morphemes are added (Bourassa & Treiman, 2008). Morphological constancy assists spellers due to the consistent nature of the spelling. However, some root words do change, for example, dropping the ‘te’ in educate when adding the suffix –tion. Empirical evidence indicated that children with dyslexia and/or language disorders generate more morphologically based misspellings than their typically developing peers (Bourassa & Treiman, 2008; Bourassa, Treiman, & Kessler, 2006;

Silliman, Bahr, & Peters, 2008). Children with dyslexia typically have oral language skills within the average range, however they have increased difficulty sounding out and recognizing words. If children with dyslexia have a concomitant language disorder, their spelling is also likely to be impacted (Larkin & Snowling, 2008).

Knowledge in these areas of language provides the skills for appropriate combination and manipulation sounds and letters to spell words, but knowledge of word meanings, or semantics, is of equal importance for spelling acquisition. For example, there are numerous homophones in the English language that sound alike, but take on different spellings, such as “two,” “to,” and “too”. Semantic knowledge gives children an understanding of the differing homophone meanings to ensure the spelling represents the correct meaning (Apel, Masterson, & Brimo, 2012). Children with higher semantic knowledge will accumulate more MGRs that will promote accurate and efficient spelling skills. This connection between the semantic and orthographic representations of words is necessary for children to develop accurate spellings. Children with weak semantic-orthographic connections will rely too heavily on their phonological knowledge and representations (McCarthy, Hogan, & Catts, 2012), so as spelling complexity increases, these students will struggle to spell with accuracy and efficiency.

**The relationship between spelling and reading.** Spelling is a written language skill that has a relationship to other literacy skills, such as reading. The underlying language skills that support the development of spelling skills (i.e., phonological awareness, orthographic knowledge, morphological knowledge, and semantic knowledge) each impact reading development from single-word reading to reading comprehension.

Several research studies have indicated that there is a significant relationship between spelling and word-level reading (Apel & Lawrence, 2011; Ball & Blachman, 1991; Ehri & Roberts, 1979; Foorman, Francis, Novy, & Liberman, 1991). The association is in the encoding and decoding process. Spelling is an encoding task that requires the same set of skills to create graphemes out of phonemes and morphemes as word-level reading, which is a decoding task where students process graphemes and morphemes to pronounce words. Ehri and Wilce (1987) found that kindergarteners who were taught to decode single-syllable words both read and spelled the words more accurately than students who were taught grapheme-phoneme correspondence in isolation, suggesting a correlation between reading and spelling.

Beyond the basic processes of encoding and decoding, spelling plays a role in reading comprehension. Reading fluency, or the speed and accuracy of reading, is an essential skill for understanding the meaning of the text (Chard, Vaughn, & Tyler, 2002). MGRs, which are also used for storage, or “fast-mapping,” in spelling, ensure rapid retrieval of words, thereby increasing reading fluency (Apel, Masterson, & Brimo, 2012).

**The relationship between spelling and written language.** Because spelling is a written-language skill, there is an obvious connection to the production of written language. In written composition, spelling impacts the fluency and quality of the written work (Berninger, 2000). As stated by ASHA (2001), “to be a fluent writer, one must be a fluent speller,” (p. 25). It is important to have accurate spelling to maintain a high level of readability and professionalism. However, if spelling increases the cognitive demand, then the quality and quantity of other written language components, such as syntax and

semantics, will likely decrease (Dockrell, Lindsay, Connelly & Mackie, 2007; Williams, Larkin, & Blaggan, 2013).

### **Spelling Acquisition Theories**

The development of spelling skills includes knowledge of each of the four previously discussed oral and written language components (i.e., phonology, morphology, semantics, and orthography). Many researchers have theorized about the acquisition of spelling skills in relation to these language components (Bear, Invernizzi, Templeton, & Johnston, 2012; Masterson & Apel, 2000). Two theories that appear in the literature are the stages theory and the foundational language theory. It is important for SLPs to have knowledge of these spelling acquisition theories in order to better understand how spelling skills develop and how to support students who struggle with spelling accuracy.

**Stages theories.** In 1971, Charles Read generated interest in the development of spelling following his investigation of children's invented spellings. Future researchers elaborated on his findings which lead to the creation of the stages theory (Beers & Henderson, 1977). The stages theory of spelling development derived from theories of language development in which skills develop in discrete sequential stages from simple to complex. Although different terminology was used, each researcher believed that children first apply their phonological knowledge to their spelling, followed by orthographic pattern knowledge, and lastly morphological knowledge (Masterson & Crede, 1999; Young, 2007). The original stages theory focused on discrete stages, however more recently researchers have proposed that although students may rely more

heavily on certain language knowledge and skills at different developmental stages, each stage is not independent of the others (Scott, 2000).

Five developmental stages depict the progression of spelling skills: preliterate, letter-name (alphabetic), within-word patterns, syllable juncture, and derivational constancy (Hoffman, 1990; Masterson & Crede, 1999). In the preliterate stage, children begin to use writing utensils to create scribbles, drawings, and some letters. Children also begin to learn directionality of writing and early phonemic awareness. Children in this stage often have a message in mind, however the content of the message is not accurately communicated. For example, a child may be attempting to write “hello,” but instead writes scribbles with some graphemes that do not necessarily coincide with the phonemes in “hello.” Children in the letter-name stage begin to apply their phonemic awareness skills to their invented spellings. Grapheme-phoneme correspondence develops, and invented spellings are based on letter names. In this stage, a child would write a letter for each sound in the word. For example, the word “hello” may be spelled “helo.” As orthographic knowledge develops, children transition to the within-word patterns stage in which orthographic patterns, including spelling patterns for long versus short vowels, develop (Masterson & Crede, 1999). For example, children in this stage will spell the word “take” correctly as they now know the orthographic pattern for long vowels. Children also begin to learn more-complex vowel combinations, such as ‘ou’ in “house.” At the syllable juncture stage, patterns for adding morphemes to words are learned, such as doubling the final consonant prior to adding a suffix, as in the word “running.” In the final stage, derivational constancy, morphological knowledge, including understanding root words and word origins, is fully developed. In this stage, children will

recognize root words and understand that the spelling remains consistent despite changes in the phonemes. For example, the root of the words “signal” and “signify” is “sign”, where the spelling of the root remains consistent despite the pronunciation differences. Supporters of this theory encourage the analysis of children’s invented spellings to determine the developmental stage from which to base spelling instruction (e.g., Ehri, 2000; Masterson & Crede, 1999).

**Foundational language theories.** Rittle-Johnson and Siegler (1999) argued that the stages theory may not be as accurate as believed and that an “overlapping waves model” may better describe spelling development. Under this model, children apply multiple language components to their spelling of words and progress more gradually through their development of spelling skills. For example, students may rely on their phonological knowledge to sound out words, while also using their morphological knowledge to spell word endings, as in the word “going.” These researchers studied the spelling strategies of first and second grade students and found abundant variability, adaptive choice, and gradual changes in the strategies children used, indicating that these students were not operating in discrete stages of spelling, but rather altering their strategies based on each word (Rittle-Johnson & Siegler, 1999). Because the students used a variety of strategies and chose different strategies based on the complexity of the word, it appeared that the students were implementing multiple language components in their spelling.

More recent research on developmental spelling continued to demonstrate that children have the capability to use multiple language components (Apel, Masterson, & Brimo, 2012). This theory relies less on specific stages of development and more on a

multi-linguistic approach to spelling development. Students at different grade levels will use each of the language components differently, but each component will have impact on their spelling at any given time. Although some believe that morphological spelling occurs later, younger children can use their morphological knowledge to spell words, but often rely more heavily on their phonological and orthographic knowledge (Apel, Masterson, & Brimo, 2012). For example, in the word “packed,” younger students will depend on their phonological knowledge to sound out the word, however their orthographic knowledge must be used to spell the /k/ with ‘ck’ and their morphological knowledge must be used for the –ed ending.

Whether educators and speech-language pathologists support the stages theory or the foundational language theories impacts their choice of instructional approaches. Both theories are language-based, however under the stages theory more emphasis may be placed on teaching individual language components as opposed to incorporating a multi-linguistic approach.

### **Spelling Instruction**

Many factors impact the type of spelling instruction that educators use in their classrooms – from district-wide use of published spelling curricula to lack of education about language-based spelling approaches. While there are numerous spelling instruction programs and/or curricula available, each can be described as either traditional or literacy-based instruction.

**Traditional approach.** Traditional spelling instruction is mostly likely what comes to mind when thinking about approaches to teaching spelling. It consists of a

weekly wordlist with a Monday pre-test, followed by drill-practice, and a Friday post-test. There is little to no direct instruction on the language basis of the words. Under the traditional approach, instruction centers on memorization of words. As previously discussed, the English language, both oral and written, contains numerous patterns. For this reason, empirical evidence does not support the use of traditional instruction, however several studies show that many schools continue to use this method (Fresch, 2003; Fresch, 2007; McNeill & Kirk, 2014; Vallecorsa, Zigmond, & Henderson, 1985; Wallace, 2006).

Twenty-three special education teachers were surveyed about their use of spelling instruction techniques (Vallecorsa, Zigmond, & Henderson, 1985). At the time of this study, the traditional model was the preferred instructional method. It was suggested that a test-study-test method be used with the focus on whole-word study as opposed to spelling patterns, and a majority of the respondents indicated use of this method.

As the theoretical basis for spelling development shifted from a single-word memorization process to a language- and pattern-based process, teachers were beginning to understand the language basis of spelling, but implementing this approach into practice appeared more challenging. Fresch (2003) conducted a national survey of 355 teachers to determine theoretical beliefs and instructional practices. This study indicated that 62% of teachers used commercially-created basal spelling programs with weekly tests and 72% used the same list for the entire class (Fresch, 2003). These results indicated that the teachers were following a traditional spelling instruction model with very little input into the creation and/or modification of spelling lists.

When asked about theoretical beliefs, many teachers expressed a need to integrate spelling and literacy. Eighty percent agreed that “spelling is best taught when integrated with writing” (Fresch, 2003, p. 830). Seventy-six percent believed that word sorts should be used, while only 27% actually incorporated word sorts (i.e., sorting groups of words based on similar patterns) into practice. Due to the discrepancies between practice and belief, Fresch (2003) suggested that “continued support, time to plan, and assistance from administrators to move toward more student-centered instruction may provide a greater connection for those teachers whose beliefs and practices are not closely aligned” (p. 838). Because it appears that more support is necessary, SLPs may be a resource for teachers in either a consultative role or a direct role with the students on their caseloads. It remains to be seen whether SLPs believe that their scope of practice should include consultation and direct intervention for spelling challenges and if they have the knowledge to support this role.

A survey based on the Fresch (2003) survey was completed by 405 teachers in New Zealand (McNeill & Kirk, 2014). Responses indicated incongruity between the theoretical beliefs and instructional practices of teachers in regard to spelling. For example, almost all of the teachers believed that phonological awareness and orthographic knowledge contributed to spelling accuracy, however few teachers included direct instruction of these skills (McNeill & Kirk, 2014). Based on the outcomes of this study, it appears that teachers’ knowledge about the language skills that support spelling development more closely aligns with current evidence-based practice, but additional support for effective implementation is necessary.

**Literacy-based approaches.** Teachers appear to support a literacy-based approach to spelling instruction, however constraints, such as time and lack of professional knowledge, impact their use of this instructional approach. A literacy-based approach to spelling includes instruction on the language and literacy components due to the relationships between spelling, reading, writing, and language. There are two types of literacy-based approaches discussed in the literature: transitional and student-oriented (Wallace, 2006).

Transitional methods continue to incorporate a word list and spelling test, however explicit instruction of phonological, orthographic, and morphological knowledge and patterns is also included. An example of a transitional spelling program is *Words Their Way* (Bear, Invernizzi, Templeton, & Johnston, 2012). *Words Their Way* is a series of books for various grade and developmental levels that includes ideas for both assessment and instruction and incorporates phonics, spelling, and vocabulary (Invernizzi, Johnston, & Bear, 2004; Johnston, Bear, & Invernizzi, 2006; Johnston, Invernizzi, & Bear, 2005). This series provides teachers with a more-structured system for teaching spelling and the language components that support it.

Another example of a transitional methods approach is *SPELL-Links* (Wasowicz, Apel, Masterson, & Whitney, 2004). *SPELL-Links* is a multi-linguistic spelling program that focuses on word study to improve reading and writing. With this program, word study, or the learning of spelling patterns of words, is used to teach spelling as opposed to the memorization of unrelated words. Misspellings often contain errors in multiple language components, therefore it is important to focus on each of these components (Apel & Masterson, 2001). The *SPELL-Links* program provides a structured way to teach

spelling that aligns with the current theoretical beliefs regarding the relationship between spelling and language.

While the transitional model includes structured instructional methods, the student-oriented approach emphasizes spelling in the context of reading and writing. According to Heald-Taylor (1998), spelling skill develops through frequent reading and writing opportunities in which the students can apply their knowledge of spelling. There are numerous ways to utilize a student-oriented approach, allowing teachers to be creative and individualize the instruction for varying skill levels. An example of implementation was proposed by Loeffler (2005) who suggested a program in which spelling is measured based on the student's ability to identify spelling errors within his or her written composition. According to Loeffler (2005), traditional spelling tests do not provide insight into the strategies used by the student. Many students will memorize the weekly list without learning the spelling patterns that will allow them to generalize to other words, however by assessing the student's spelling within written composition, teachers and other professionals can better understand the reason for the misspellings and help the student develop strategies to increase spelling accuracy.

Current research evidence would support the use of literacy-based programs due to the explicit instruction of the language components involved in spelling (Apel & Masterson, 2001; Masterson, Apel, & Wasowicz, 2002) In order for SLPs to have a role in supporting their students' acquisition of spelling skills, the school and the SLP must view spelling as a language-based literacy skill in which the SLP can provide valuable support. The type of spelling instruction used in the school may be a reflection of the school's or the school district's beliefs.

### **Impact of Oral Language Impairments on Spelling**

During the 2005-2006 school year, over 1.1 million students received special education services for primary speech and language impairments (National Dissemination Center for Children with Disabilities, 2011). ASHA (1993) defines LI as the following: “The disorder may involve (1) the form of language (phonology, morphology, syntax), (2) the content of language (semantics), and/or (3) the function of language in communication (pragmatics) in any combination” (p. 2).

As indicated by this definition, there is a certain amount of heterogeneity inherent in LI. It is often a challenge to fully understand LI due to the range of language components that may potentially influence a child’s oral and written language development. Children with LI are also at risk for problems in school both socially and academically due to the difficulty of learning and using language, so it is important to address all components of the impairment (Cirrin & Gillam, 2008).

The deficits in language processing that impact the oral language skills of children with LI, including phonological awareness and morphological and semantic development, are also involved in written language, including spelling acquisition. One indicator of LI is delayed semantic development. Sheng and McGregor (2010) studied the semantic organization of children with LI and found that some children with LI who also demonstrated word-finding difficulties had decreased semantic organization. These semantic organization deficits will likely extend to written language, including the ability to develop the aforementioned MGRs necessary for spelling and word-level reading.

As previously discussed, another indicator for the development of literacy skills is phonological awareness. Several studies have found that children with LI have deficits in

phonological awareness indicating potential literacy difficulties (e.g., Bishop & Snowling, 2004; Larkin & Snowling, 2008). In addition, children with LI often have challenges with the morphological development of oral language, including both derivational and inflectional morphology (Leonard, Bortolini, Caselli, McGregor, & Sabbadini, 1992). Lack of well-developed morphological skills prevents children with LI from using grammatically correct word forms in both their oral and written language. Although each child with LI has unique language characteristics and deficits, it appears likely that the acquisition of literacy skills will be impacted in some capacity.

Due to the connection between oral language skill and literacy, it is predicted that development of literacy skills in children with LI will be affected. As previously discussed, there are four language systems: aural, oral, reading, and writing that develop successively, with each system building on the others (Berninger, 2000). Children with LI will often be challenged by the aural and oral systems, which will then potentially cause deficits in the reading and writing systems. For example, Catts, Fey, and Tomblin (2002) found that children with LI as kindergarteners had lower measures of word recognition and reading comprehension as second and fourth graders. These researchers also discovered that an early predictor of future reading concerns was letter identification. In this study, kindergarteners who struggled to identify various letters also had lower reading achievement as they reached second and fourth grade (Catts, Fey, & Tomblin, 2002).

Empirical evidence indicates that spelling is a language-based skill that is best learned through language-based strategies (e.g., Apel & Lawrence, 2011; Loeffler, 2005). If children have a disorder in any of the foundational oral language skills necessary for

learning to spell, it will likely negatively impact their acquisition of spelling skills (e.g., Apel & Lawrence, 2011; Holm, Farrier, & Dodd, 2008; Larkin, Williams, & Blaggan, 2013). If the students on an SLP's caseload have spelling challenges, it may be beneficial for the SLP to support both the teacher and the student in regard to his or her spelling concerns.

A few studies have focused on the impact of LI on spelling acquisition. Mackie and Dockrell (2004) assessed the written compositions of school-age children with LI for spelling errors, in which no statistically significant difference was found between the two groups. However, Mackie and Dockrell's (2004) "qualitative analysis from reports of the LI children suggested that they wrote words that they could spell rather than attempt words that they could not spell" (p. 1478). This strategy may inhibit students with LI from obtaining a higher level of complexity in written composition.

Larkin and Snowling (2008) compared the spellings of children with primary language impairment and primary reading impairment and discovered that children with LI had a more severe impairment in phonetic spelling. The researchers concluded that some children with LI may have a co-occurrence of dyslexia, or difficulty decoding and encoding words due to processing challenges, further impacting their spelling development. A recent study by Larkin, Williams, and Blaggan (2013) found that some children with LI have spelling challenges, while others have a high level of spelling performance. They found that non-word repetition tasks accurately predicted the spelling skills of these children. In other words, the children who had the phonological knowledge to complete non-word repetition tasks more accurately had better literacy skills, including spelling. Larkin and colleagues' investigation of orthographic and morphological

spellings showed that children with LI used accurate orthographic spellings, but had delayed morphological spellings. For example, the children with LI often omitted inflectional morphemes from their spellings (Larkin, Williams, & Blaggan, 2013).

Many children with LI present with written language difficulties. Prior research indicates that individual differences impact whether LI will affect spelling, therefore SLPs must consider the spelling skills of their students to ensure that their spelling does not impede their written composition (Larkin, Williams, & Blaggan, 2013). Several studies showed that children with LI who had deficits in phonological knowledge had decreased spelling skills (e.g., Catts, Adlof, Hogan, & Weismer, 2005; Larkin & Snowling, 2008; Larkin, Williams, & Blaggan, 2013). A specific type of LI that directly impacts phonological knowledge and will, therefore, likely affect spelling acquisition is a phonological disorder.

**Phonological disorders.** Previous research indicates that children with phonological disorders (a language-based speech sound disorder) often have decreased phonological awareness skills (Bird et. al., 1995; Mann & Foy, 2007; Rvachew & Grawburg, 2006; Schuele & Boudreau, 2008). Given that phonological awareness influences spelling development, decreased spelling skills are common in this population even after remediation of the speech sound disorder (Clarke-Klein & Hodson, 1995; Holm, Farrier, & Dodd, 2008; Meredith, 2002).

Several studies have examined the spelling outcomes of children with a history of phonological disorders. A study by Holm, Farrier, and Dodd (2008) indicated that children with previous phonological disorders, characterized by inconsistent errors, had lower word and non-word spelling scores than their typically developing (TD) peers.

Clarke-Klein and Hodson (1995) analyzed the spelling of third grade students with histories of phonological disorders. Their misspellings consisted of more phonologically-based errors compared to their TD peers. Conversely, Meredith (2002) found that the spelling skills of third and fourth grade students with a history of phonological disorders did not deviate from their TD peers. However, the students with moderate to severe disorder histories had significantly lower spelling scores than both the typically developing students and students with a history of mild phonological disorders. These results indicated that children who had a history of moderate to severe phonological disorders did not reach the same spelling level as their peers.

Although it has been well documented that children with phonological disorders have lower phonological awareness skills, morphological awareness, another language component that impacts spelling, has recently received more attention. Apel and Lawrence (2011) compared the contribution of morphological awareness to the reading and spelling skills of first grade students with and without speech sound disorders. Results revealed that the students with speech sound disorders had decreased morphological awareness skills that also predicted outcomes on a spelling task.

In summary, prior research has shown that children with phonological disorders often have difficulty with phonological awareness and morphological awareness, which can negatively affect their spelling. There were individual differences discussed in each of these studies, however it appears that SLPs should emphasize these other language-based skills in addition to speech production. Intervention with children who have phonological disorders often focuses on correcting the speech sounds without considering the underlying LI. Although phonological disorders have an impact on speech sound

production, it is important to monitor other language components, including phonological and morphological awareness, as these language skills can also potentially impact the development of literacy skills.

### **Spelling and the SLP**

Based on current theoretical perspectives and research evidence regarding the relationship between language and spelling, SLPs should play a role in supporting the acquisition of spelling skills with the students on their caseloads. SLPs have proficient knowledge in the areas of language and literacy development. Their expertise on these topics would provide support for teachers and students. Currently, there is limited research available regarding the process and approach SLPs should take to implement their support.

Hoffman (1990) offered suggestions for incorporating a whole-language perspective in regard to spelling and phonological instruction. Like Ukrainetz (2007), Hoffman (1990) believes in language intervention within natural contexts. For this reason, he suggests that SLPs use their knowledge of spelling and phonological development to: (a) consult with teachers about invented spelling, (b) monitor the spelling development of children with phonological disorders, and (c) implement whole language activities, including written language, into phonological therapy.

Scott and Brown (2001) discussed the role of the SLP in supporting the acquisition of spelling skills for students with spelling challenges. According to Scott and Brown, spelling was not a topic that received attention in undergraduate/graduate training programs or continuing education, however due to increased knowledge about the impact

of oral language skill on the acquisition of spelling skill, the topic has been gaining interest among SLPs and researchers. Based on a review of the research literature, Scott and Brown composed a set of best practices in spelling intervention to guide the practice of SLPs. They suggested that spelling instruction occur early and be individualized for each student's needs. The lists used should incorporate high-interest words as well as words used in the student's writing, which would allow for in-the-moment teaching during writing tasks. In addition, it was recommended that spelling instruction emphasize the patterns inherent in the spellings of English words, as well as explanations for irregular spellings (e.g., word origins).

Concurrently, ASHA (2001) released a position statement reflecting the roles and responsibilities of SLPs relative to literacy skills. According to ASHA, the document was created based on questions from ASHA members regarding the roles SLPs should play in reading and writing, as well as:

[T]he need for: (a) SLPs with the knowledge and skills to provide assessment and intervention for children whose persistent language difficulties frequently involve problems with learning to read and write; (b) understanding and advocating for the direct role SLPs should play in providing literacy instruction; and (c) collaborative partnerships between SLPs, teachers, administrators, and others to foster literacy acquisition among general education students at risk for or experiencing reading and writing disorders (p. 18).

This statement indicates that SLPs had concerns regarding their knowledge base and role in supporting students with reading and writing difficulties, including spelling. Although the research indicates that SLPs should provide support for students with spelling

difficulties and researchers have provided some recommendations, it is unclear what role school SLPs actually have on a day-to-day basis in collaborating with teachers to support students' spelling acquisition.

While research indicates that SLPs should have a role in spelling, many SLPs do not have the knowledge and training to support their involvement in spelling intervention. Blood, Mamett, Gordon, and Blood (2010) surveyed 599 SLPs on their perceptions in regard to their training, knowledge, and confidence in the assessment and treatment of written language disorders. SLPs perceived themselves to be knowledgeable in most written language and literacy areas, however items related to spelling were rated low in comparison, indicating that SLPs require continuing education to provide effective written language services to students on their caseloads.

### **Spelling, School Environment, and Principal Support**

In order for SLPs to play a role in spelling acquisition, the school environment, as established by principals and other administrators, must acknowledge the relationship between language and spelling, as well as support a collaborative environment between teachers and other professionals. Service delivery for students who require special education services has changed to reflect inclusion of students in the general education classroom. Under this inclusionary model, collaboration between professionals is crucial for success. A study by Cooley-Nichols and Sheffield (2014) investigated the relationships of co-teachers and the role of administration in supporting these relationships through a professional development activity. Many teachers discussed the need for opportunities to develop stronger relationships in order to better understand the

culture of their co-teachers and overcome potential barriers during collaboration. Another common theme amongst the teachers in this study was the need for administrator support to ensure consistent and efficient collaboration.

The leadership roles of principals in supporting a collaborative environment that promotes literacy development has also been discussed in the literature (e.g., Cosner, 2011; Danridge, Edwards, & Pleasants, 2000). Both studies indicated that principals often have the role of ensuring that evidence-based practices are being implemented, as principals often feel the pressure of improving test scores by implementing best practices. Students receiving services from an SLP will benefit from a collaborative relationship between their SLP and teachers. For example, if a student has an articulation disorder, it is important for the teacher to understand the disorder and how to help the student within the classroom. In regard to spelling acquisition, this collaborative relationship is equally as important. Students on an SLP's caseload who struggle with spelling will benefit if the SLP and teacher work together to support spelling acquisition.

### **Current Study**

**SLPs' beliefs and education.** As a result of the differing approaches to spelling intervention (i.e., traditional memorization-based approaches versus language-based approaches), many teachers are struggling to implement appropriate, evidence-based practices with their students. The instructional practices used in the schools may limit the role of the SLP in regard to spelling, however SLPs need to advocate for involvement in spelling intervention with the students on their caseloads who are at risk for written language and spelling disorders. That said, if SLPs lack confidence in their

knowledge of written language, their involvement is less likely to occur. It remains to be seen how confident Wisconsin school-based SLPs are with written language interventions and whether or not they are incorporating written language and spelling goals into their practice.

Although current coursework in Communication Sciences and Disorders (CSD) undergraduate and graduate training programs often includes content in literacy and phonological awareness, it appears that more-specific information regarding written language and spelling is necessary. The current study seeks to determine SLPs' views on their role in spelling instruction in relation to their educational and theoretical backgrounds, as it is unknown if spelling instruction is being incorporated into school-based speech and language services in the state of Wisconsin.

**Role of SLPs in written language development.** A survey from the Wisconsin Department of Public Instruction (2006) indicated that SLPs spent approximately 25% of their time treating students with language disorders, more than any other disorder. Due to the language basis of spelling and literacy acquisition, SLPs who have significant background knowledge in the area of language development should have a role in supporting students with written language disorders, including in spelling acquisition. As previously discussed, ASHA (2001) stated that SLPs should have a role in identifying, assessing, and providing intervention in the areas of reading, writing, and spelling, as well as collaborating with other professionals and advocating for effective literacy practices. Although ASHA's guidelines provide information for SLPs about their role in written language, it is unknown whether SLPs in the schools are applying these practices with students on their caseloads. The current study surveyed SLPs working in

the public schools in Wisconsin to determine their perceptions on their role, specifically in regard to spelling.

**Role of principals in promoting SLP input.** There is limited research investigating the perspectives of principals in regard to spelling, including the role that SLPs should have in spelling acquisition. As discussed in Fresch (2003) and McNeill and Kirk (2014), teachers are struggling to implement effective, evidence-based spelling instruction despite their theoretical beliefs supporting literacy-based approaches. SLPs may be a potential source for providing additional language- and pattern-based spelling interventions, however it is also important to understand the viewpoints of principals in regard to literacy and collaboration, as their perspectives will likely have an impact on the types of roles SLPs will have in supporting their students with spelling challenges. The current study also surveyed principals working in Wisconsin public schools to explore their perspectives on collaboration and more specifically the role SLPs should have in spelling interventions.

**Aims of the current study.** Under current theoretical perspectives, SLPs who have knowledge in language and literacy development can and should address spelling concerns with the students on their caseloads. To date there is limited research on the roles SLPs play in supporting children with spelling challenges. The aims of the current study were: (a) to examine the relationships between the content and theoretical knowledge SLPs were exposed to in undergraduate and/or graduate school, their participation in professional continuing education, and the SLPs' and principals' views on spelling; (b) to determine the role(s) school-based SLPs currently play in supporting the acquisition of spelling skills by the students on their caseloads; and (c) to determine the

perspectives of public school principals in regard to SLPs' role(s) in spelling and literacy instruction, including collaboration between professionals. A survey was distributed to SLPs in the Wisconsin public schools to obtain information on these objectives. A similar survey was distributed to principals in the Wisconsin public schools to obtain their perspectives. The purpose of the present study was to determine Wisconsin school-based SLPs' and principals' perceptions on spelling and how their perceptions relate to their background knowledge in oral language, literacy, and spelling.

## II. Methods

The impact of oral language skills on the acquisition of literacy skills, including spelling, has been discussed in the literature (e.g., Apel & Lawrence, 2011; Apel, Wolter, & Masterson, 2006; Lombardino, Bedford, Fortier, Carter, & Brandi, 1997; Masterson & Crede, 1999). Studies show that spelling acquisition involves several language components, including phonology, morphology, and semantics. Based on the connection between oral language and spelling, speech-language pathologists (SLPs) should have a role in supporting the acquisition of spelling skills with the students on their caseloads. However, no current research has investigated whether public school SLPs working in the state of Wisconsin have a role in spelling instruction and what this role entails.

Students with language impairments often struggle with spelling so it is important for SLPs to be involved with the spelling acquisition process. Investigating SLPs' perspectives is important in order to determine if SLPs play a role and what influences the extent of their involvement. The aims of the current study were: (a) to examine the relationships between the content and theoretical knowledge SLPs were exposed to in undergraduate and/or graduate school, their participation in professional continuing education, and the SLPs' and principals' views on spelling; (b) to determine the role school-based SLPs play in supporting the acquisition of spelling skills by the students on their caseloads; and (c) to determine the perspectives of public school principals in regard to SLPs' role(s) in spelling and literacy instruction, including collaboration between professionals.

## Participants

The survey population consisted of 2,047 SLPs and 1,883 principals employed in public school systems in the state of Wisconsin. These populations were chosen for two reasons: (a) school-based SLPs work with students who have language impairments and may struggle with spelling and (b) principals have an impact on the school environment and the involvement of various professionals in literacy development. Principals from all Wisconsin public school districts were contacted via an email distribution list obtained from the Department of Public Instruction (DPI). Each principal was asked to complete the principal survey, as well as distribute a separate survey to the SLPs in the district. Some school districts required an additional approval process for distributing the survey in their district. The requirements did not correspond with the timeline of this project; therefore these school districts were not included in the survey sample. Eleven percent (n=202) of principals and 9% (n=186) of SLPs employed in the Wisconsin public schools completed the survey. The responses of participants who started, but did not complete the survey were not included in the final data set. The participants will be referred to as “respondents” as these individuals provided responses to the survey questions.

Upon receiving the survey, respondents were informed that participation was voluntary and withdrawal from the study at any time was an option. SLPs and principals who chose to participate followed a link provided within the email. The final analyses of the survey data included the responses from all who completed the survey. Following completion of the survey, respondents had the opportunity to enter their email address into a drawing for a \$25 gift card. One respondent from each survey was randomly

selected to receive the gift card. Survey responses of these respondents remained anonymous.

### **Materials**

Both surveys were created using Qualtrics, an Internet survey software tool available to faculty and students at the University of Wisconsin – Eau Claire. A survey research method was chosen to obtain information from school-based SLPs and principals in Wisconsin due to the capability of reaching a larger sample within the population. Other qualitative methods, such as a focus group or interview, would have sampled a smaller number of participants. The aims of the current study were to obtain the perspectives of a broader sample of SLPs and principals employed in the Wisconsin public schools. Although the survey sample did not contain every individual from the population, the results from these larger samples provided a more extensive view of current practices in the schools that can potentially impact future research.

Data collection for survey research can occur via personal interview, group administration (i.e., completing the survey in person within a group), telephone, mail, or Internet. Fowler (2014) stated that self-administered surveys completed via mail or Internet have higher the response rates, especially for sensitive topics. Personal interview and telephone delivery methods would require researcher administration, which could possibly decrease the response rate. Respondents may feel less comfortable answering questions in these researcher administered delivery methods and may not respond to questions that may be viewed as socially undesirable. In addition, group administration was not a feasible option for the current study given the wide range of respondent

locations throughout the state of Wisconsin. Based on the recommendations from Fowler (2014), an email survey was considered to be the most appropriate delivery method for this study, due to the efficiency and cost-effectiveness compared to mail delivery.

**Minimizing error.** According to Fowler (2014), survey research is vulnerable to two types of error: sampling error and bias. Sampling error is caused when only part of an entire population is included in the survey. When a sample of a population is used, there is always possible sampling error in that it may not be a representative sample. Sampling error may have impacted the results of this study due to the exclusion of three of Wisconsin's largest school districts who required an additional approval process. With the exception of these districts, all Wisconsin public school principals and SLPs were included in the sample frame, or the group of individuals who have a chance of being included in the study. The results were not applied to any other populations.

In addition to sampling error, bias within the responses is another potential source of error in survey research. Fowler (2014) offers three steps of data collection in which bias could occur: (a) selection of the sample frame, (b) lack of random sampling, and (c) failure to collect answers from the entire sample frame. If every individual in the population does not have an equal chance at being selected, then it is considered a biased sample. As previously mentioned, the current survey population included all Wisconsin public school principals and SLPs, so this bias is not of major concern. It is important to keep in mind, however, that the principals also helped determine the sample frame because each principal decided whether or not to distribute the survey to SLPs in his/her school district. If, for example, principals from urban school districts were less likely to

distribute the survey to their SLPs than principals from rural districts, the data could be biased.

Random selection of a sample is also important to ensure that bias is not introduced. The sample of principals and SLPs who participated in the study was based on their decision to volunteer for the study. As Fowler (2014) mentioned, individuals who volunteer may have different viewpoints than individuals who do not volunteer, therefore the sample in the current study has the potential to contain bias. For example, SLPs who feel strongly about their involvement in literacy skills, including spelling, may be more likely to respond to the survey.

The final step mentioned by Fowler (2014) is related to nonresponse error. Nonresponse error occurs when all individuals within the sample frame do not participate in the survey. There are several reasons for a lack of response, which can generate bias into the data collected. Individuals who are uninterested in the survey topic are less likely to participate than those with a strong interest. Also, in internet surveys, the response depends upon the individual's access to and ability to use the internet (Fowler, 2014).

In the current study, nonresponse error causes more concern than sampling error and the other biases. According to Fowler (2014), prediction of the nonresponse error for an entire survey is unreliable because each item will be affected differently. In other words, each individual survey item could produce its own nonresponse error that is not affected by the nonresponse error of the entire survey. Groves (2006) indicated that response rate, or the number of individuals who complete a survey, and nonresponse error have a correlation of 0.33; therefore response rate does not predict the nonresponse error. This means that a survey with a low response rate may produce similar results as a

survey with a high response rate. It is most beneficial to consider each survey item independently for nonresponse. Based on Fowler's (2014) recommendation, in this study the level of nonresponse was reported for each question with greater than a 5% nonresponse rate.

Additional efforts to limit nonresponse error were used. Reducing nonresponse error for Internet surveys is best accomplished by creating a well-designed survey that entices individuals to participate. The survey questions were clear and concise while remaining comprehensive. In addition, Fowler (2014) suggests repeated contact as a way to remind individuals to complete the survey and minimize possible nonresponse error. Internet surveys also bring about additional concerns regarding credibility. Survey requests sent from a recognizable institution had higher response rates (Fowler, 2014). In the current study, each of these measures was used as a precaution to decrease nonresponse error.

**Increasing validity.** Validity refers to how well the survey measures what it expects to measure (Fowler, 2014). In survey research, validity is often affected by the format of the survey, the format and content of the questions, and the response accuracy (Fowler, 2014; Meline, 2010). Development of a survey takes time and careful consideration of the questions being asked to ensure a high level of validity. In this study, questions were carefully worded using straightforward and concise language in order to decrease confusion that can cause misinterpretation (Fowler, 2014).

In addition to question design, another threat to validity in survey research is social desirability bias. Social desirability bias refers to the respondents' answers being affected by what they believe the researcher views as correct, as opposed to their own

beliefs (Fowler, 2014). To ensure that respondents feel comfortable answering honestly and social desirability bias is therefore reduced, Fowler suggests using non-judgmental language that emphasizes the need for accuracy, implementing a self-administered survey that increases confidentiality due to the private completion of the survey, and ensuring anonymity and confidentiality by not including identifiers at any time within the survey.

**Survey questions.** As described previously, survey research requires thoughtful planning to minimize possible error and increase the response validity (Fowler, 2014; Meline, 2010). In order to make reliable and valid comparisons, each question must be worded unambiguously to ensure consistent interpretation by all respondents. By creating a straightforward survey with clear and concise questions, completion of the survey was easy and appealing to the respondents. Questions with inadequate description or complex wording, as well as vague questions, were avoided.

In addition to considering the wording of the questions, the types of questions used must also be considered. Closed-ended questions are those that are answered by selecting from given responses, while open-ended questions give the respondent the opportunity to provide their own answers. There are advantages and disadvantages of choosing either type.

On self-administered surveys, closed-ended questions are commonly used to increase the ease of completion and response rate. Closed-ended questions allow respondents to answer more consistently, therefore this study consisted of mostly closed-ended questions. The content of the closed-ended questions was examined to ensure that the questions were easy to comprehend and complete. A Likert, or direct rating scale format, was used throughout this study. In Likert scales, answers are provided on a 5-

point continuum of negative feeling to positive feeling. For example, potential Likert scale descriptors could include: “very unlikely,” “somewhat unlikely,” “neither likely nor unlikely,” “somewhat likely,” and “very likely.” For these questions, the descriptors within the scale must be clearly worded to limit variability in interpretation across respondents.

While closed-ended questions were the primary type of question used in this study, an open-ended response option was provided for some questions. For example, the option of selecting “Other (Please specify)” was offered on several closed-ended questions to allow for increased flexibility that may reflect the respondent’s true opinion. Open-ended questions are less reliable than closed-ended questions due to inconsistencies across responses, however the use of open-ended response options within closed-ended questions provides a good balance (Fowler, 2014).

Certain types of questions were avoided to create a clear and simple survey that would increase the probability of reliable and valid responses. According to Maxwell and Satake (2006), there are several types of questions that should be avoided to minimize error and increase validity, including double-barreled questions which contain two questions in one (e.g., “Do you think SLPs should work with students on written language and spelling?”), loaded questions containing emotional language (e.g., “How important is literacy in supporting the future of America?”), and leading questions that push the respondent in a certain direction (e.g., ASHA believes that all school SLPs should include written language intervention into their practice. Do you agree?). Fowler (2014) also mentioned that “why” questions tend to cause problems when used in survey research because respondents' answers are influenced by each individual’s frame of

reference. Each of these questions types was avoided in this study to minimize confusion and potential error.

As previously discussed, rating scales were used on several closed-ended questions throughout the study, however the “agree-disagree format” was avoided. This format is problematic in survey research because this question format is not only complex and confusing for respondents, but it can also be challenging to compare levels of and rationale for agreement or disagreement across respondents (Fowler, 2014). For example, two respondents may disagree with a statement, but for opposing reasons. All agree-disagree questions can be written as direct rating tasks, which will likely produce more interpretable results. Based on this suggestion by Fowler, direct rating scales were used in this study as opposed to the “agree-disagree format.” A copy of the SLP survey questions can be found in Appendix A. A copy of the principal survey questions can be found in Appendix B.

**Survey format.** Qualtrics, the Internet survey software tool used in this study, controlled the format of the survey, however the organization of the questions was selected by the researcher. The purpose of the format and organization was to make the survey as easy to use and self-explanatory as possible (Fowler, 2014). Questions were grouped based on topic area and organized in a logical order. The SLP survey consisted of 27 questions organized into the following topic areas: current involvement in language assessment and intervention, education and training in various areas of literacy, and future interest in implementing spelling intervention. The principal survey consisted of 20 questions organized into the following topic areas: perspectives on collaboration,

perceptions of an SLP's scope of practice, and education and training. Respondents were transitioned from group to group via a brief statement introducing the topic.

Similar question forms were consistently used throughout the survey to allow the respondents to become familiar with the question format and decrease the likelihood of confusion. Demographic questions were placed at the end of each survey because these questions are personal and tend to be less interesting. If asked at the beginning of the survey, individuals might discontinue the survey before answering the content questions.

Prior to distributing the survey to the participants, a pilot survey was completed to verify the appropriateness and clarity of the format and content of the questions, as suggested by Fowler (2014). The pilot survey was administered to three professors in the Communication Sciences and Disorders Department and one professor in the Special Education Department at the University of Wisconsin – Eau Claire. Feedback was obtained and used to make alterations to the survey that improved ease of use and comprehensibility of the questions, as well as the format of the survey.

## **Procedure**

The Institutional Review Board (IRB) at the University of Wisconsin – Eau Claire approved this survey research as safe and acceptable for human participation on October 14, 2014. The survey included a cover letter to explain the purpose of the survey (see Appendix C). By completing the survey, respondents indicated their consent to participate.

Three contacts were made to the sample population throughout the study. An initial invitation that described the rationale and timeline of the study and requested

principals to forward the survey link and cover letter to the SLP(s), was distributed to the principals on October 21, 2014. The initial invitation with a link to the principals' survey was also distributed to the principals on October 21. On November 4, 2014, a second contact was made to thank those individuals who already responded and invite those who had not yet responded to complete the survey. A final contact was initiated following the closing of the survey on November 19, 2014 to thank all who participated. Appendix D contains copies of each of these email contacts.

**Analyzing results.** For each survey, responses to the closed-ended questions were compared across the survey sample. Descriptive statistics conveying and comparing percentages were reported and used to identify themes in the responses. Comparisons were also made between the SLPs' and principals' responses to similar questions in the two surveys. The results were only used to describe the two populations within the current study and were not generalized to other populations.

Subjective data was gathered from the open-ended responses to some of the closed-ended question on both surveys. These responses were used as anecdotal data due to the difficulty in coding and comparing open-ended answers across respondents (Fowler, 2014).

### III. Results

The purpose of this study was to determine the perceptions of SLPs and principals in regard to spelling and collaboration and how their perceptions were impacted by their background knowledge in oral language, literacy, and spelling. Their perspectives helped establish a potential need for and interest level in SLP involvement in spelling intervention. Although the current study only surveyed SLPs and principals in the state of Wisconsin, the survey could be used to gather information about the role of SLPs in spelling intervention from SLPs and principals in other states.

The survey of SLPs in the Wisconsin public schools aimed to do the following:

(a) determine the SLPs' background knowledge and education about phonological awareness, written language, and spelling; (b) determine the respondents' current involvement and future interest in spelling intervention; and (c) determine current practices in regard to collaboration between SLPs and other professionals.

The survey of principals serving in the public schools in the state of Wisconsin aimed to do the following: (a) determine the principals' background knowledge and education about language, literacy, and spelling; (b) determine principals' beliefs about an SLP's scope of practice, specifically in regard to literacy skills; and (c) determine the current practices in regard to collaboration between all professionals in the public schools.

Data from the two surveys was recorded and analyzed separately. Demographic data was collected to obtain additional information about the respondents and was reported using descriptive statistics including percentages, means, ranges, and standard deviations. Closed-ended questions were analyzed with descriptive statistics, specifically

percentages. Open-ended questions were used as anecdotal data that was presented subjectively. According to Fowler (2009) survey items with nonresponse rates greater than 5% should be reported, as a nonresponse rate above this level may indicate bias in the results. In the current surveys, no survey items had a response rate higher than 5%, therefore nonresponse rates were not reported.

### **SLP Survey Demographics**

There are currently 2,047 SLPs employed in the Wisconsin public schools. A total of 186 SLPs responded to the survey, resulting in an overall response rate of 9%. A more-precise response rate for the SLP survey could not be obtained because the number of SLPs who received the survey email from their principal(s) was unknown. Although the distribution method used in the current study limited the ability to calculate a precise response rate, it was the most effective way to distribute the survey and potentially reach every SLP in the Wisconsin public schools.

Eight percent of the respondents reported practicing as an SLP in the schools for less than a year, 21% for one to five years, 15% for six to ten years, 19% for 11 to 15 years, 11% for 16 to 20 years, and 25% for 20 or more years. In a multiple response option, respondents reported working with the following grades: 82% in elementary schools, 64% in early childhood, 43% in middle schools, and 36% in high schools. The average caseload of the respondents was 37 students, with a range of 10 to 73 students (mean=37; SD=11.5). Caseload sizes reported in this survey are consistent with the median caseload reported by ASHA for school-based SLPs in the state of Wisconsin in 2012 (ASHA, 2014)

### **Principal Survey Demographics**

An estimated 1,882 principals received the survey invitation. A total of 202 principals responded to the survey, resulting in a response rate of 11%. Five percent of the respondents reported serving as a principal in the public schools for less than a year, 32% for one to five years, 19% for six to ten years, 22% for 11 to 15 years, 12% for 16 to 20 years, and 9% for 20 or more years. When asked about their prior occupation, 42% of respondents reported being a middle or high school general education teacher, 30% were elementary general education teachers, 8% were special education teachers, and 2% were SLPs. Eighteen percent reported having other occupations, including school psychologist, reading specialist, school counselor, and physical education or music teacher.

### **Education and Background Knowledge**






The education and background knowledge of both SLPs and principals is an influencing factor on current practices within their schools. To begin to understand potential reasons for the current practices of school-based SLPs, the SLP survey included several questions about their education, training, and background knowledge in phonological awareness, written language, and spelling.

In regard to phonological awareness, 164 SLPs (89%) reported receiving education or training, while 21 (11%) did not receive education or training. In a multiple response option, the 164 SLPs who had education or training in phonological awareness were asked where they received their education or training. A majority of the SLPs received their education or training in either their undergraduate (42%, n=69) or graduate (72%, n=118) programs. Forty-five percent (n=74) learned about phonological awareness

on the job, while 44% (n=72) received continuing education about phonological awareness. Table 2 below depicts the responses with the pre-graduate training programs depicted in red and the post-graduate in blue.

Table 2






*Where did you receive the education or training on phonological awareness?  
(Question 12a)*

SLP Response	Bar Graph	Number of Responses	Percent of Responses
Undergraduate program		69	42%
Graduate program		118	72%
On the job		74	45%
Continuing education		72	44%
Other (Please specify)		6	4%

Similarly, SLPs were asked about their education and training in written language assessment and intervention. Only 33% of SLPs (n=61) received education or training in written language, while 67% (n=122) did not receive any education or training. The 61 SLPs who received education or training were asked in a multiple response option where their education or training occurred. Most SLPs (64%, n=39) learned about written language in their graduate programs, while only 31% (n=19) did in their undergraduate programs. Forty-four percent of SLPs (n=27) received continuing education about written language and 38% (n=23) learned about written language on the job. Table 3 below shows these results with the pre-graduate training programs depicted in red and the post-graduate education or training experiences in blue.

Table 3





*Where did you receive the education or training on written language assessment and/or intervention (NOT including spelling)? (Question 10a)*

SLP Response	Bar Graph	Number of Responses	Percent of Responses
Undergraduate program		19	31%
Graduate program		39	64%
On the job		23	38%
Continuing education		27	44%
Other (Please specify)		2	3%

In addition, SLPs were asked about their education and training in spelling assessment and intervention. Only 11% of SLPs (n=20) responded that they received education or training specifically focused on spelling, while 89% (n=162) did not receive education or training in spelling. In a multiple response option, the 20 SLPs who received education or training were asked where this education or training occurred. Seventy percent of SLPs (n=14) reported on the job training and 50% (n=10) received continuing education related to spelling assessment or intervention. Only 35% (n=7) learned about spelling in their graduate program, while 5% (n=1) received instruction in an undergraduate program. Table 4 shows the results of this question with pre-graduate programs shown in red and post-graduate education or training experiences in blue.

Table 4

*Where did you receive the education or training on spelling assessment and/or intervention? (Question 13a)*

SLP Response	Bar Graph	Number of Responses	Percent of Responses
Undergraduate program		1	5%
Graduate program		7	35%
On the job		14	70%
Continuing education		10	50%
Other (Please specify)		0	0%

To obtain additional information about the SLPs' training and education, all respondents to the SLP survey were also asked about their confidence in providing assessment and intervention in the areas of phonological awareness, written language, and spelling. For phonological awareness, most SLPs (42%, n=77) reported feeling “somewhat confident,” while 24% of SLPs (n=44) reported feeling “very confident.” Seventeen percent of SLPs (n=31) responded to being “neither confident nor unconfident.” Only 10% (n=18) reported being “very unconfident” and even fewer SLPs (7%) responded feeling “somewhat unconfident.” Table 5 below displays these responses.

Table 5

*How confident do you feel providing phonological awareness assessment and/or intervention? (Question 8)*

SLP Response	Bar Graph	Number of Responses	Percent of Responses
Very unconfident		18	10%
Somewhat unconfident		13	7%
Neither confident nor unconfident		31	17%
Somewhat confident		77	42%
Very confident		44	24%
Total		183	100%

In regard to written language, 28% of SLPs (n=52) reported feeling “somewhat confident” providing assessment or intervention, while 27% (n=49) responded “somewhat unconfident.” Twenty-two percent of SLPs (n=40) were “neither confident nor unconfident.” Sixteen percent of SLPs (n=29) reported feeling “very unconfident,” and only 7% (n=13) responded feeling “very confident.” Table 6 displays the results.

Table 6






*How confident do you feel providing written language assessment and/or intervention? (Question 11)*

SLP Response	Bar Graph	Number of Responses	Percent of Responses
Very unconfident		29	16%
Somewhat unconfident		49	27%
Neither confident nor unconfident		40	22%
Somewhat confident		52	28%
Very confident		13	7%
Total		183	100%

When asked about their confidence levels in providing spelling assessment and intervention, 32% of SLPs (n=57) responded being “neither confident nor unconfident” and 29% (n=53) reported feeling “somewhat unconfident.” Twenty-one percent of SLPs (n=38) responded “very unconfident.” Only 18% of SLPs (n=32) reported being either “somewhat confident” or “very confident” with only seven of those being “very confident.” Table 7 displays these results.

Table 7

*How confident do you feel providing spelling assessment and/or intervention?  
(Question 14)*







SLP Response	Bar Graph	Number of Responses	Percent of Responses
Very unconfident		38	21%
Somewhat unconfident		53	29%
Neither confident nor unconfident		57	32%
Somewhat confident		25	14%
Very confident		7	4%
Total		180	100%

In a similar question, SLPs were asked whether or not they felt that they required additional training in phonological awareness, written language, and spelling. More SLPs responded “yes” to requiring additional training in written language (62%, n=113) and spelling (64%, n=114), however over half (54%, n=98) also responded that additional training is required in phonological awareness. In addition, SLPs were asked if they have read published research about the relationship between spelling and oral language skills. Forty-three percent (n=77) responded that they read about the relationship, while 57% (n=102) did not read about it.

In addition to obtaining information about the SLPs' educational background, principals were asked about their education and background knowledge in literacy, spoken language development, and spelling, as this may impact the school environment. When asked about literacy intervention, 76% of principals (n=153) replied that they received education or training, while 24% (n=49) did not. The 153 principals who responded "yes" were asked where they received their education or training and these results are displayed in Table 8 with the pre-graduate training programs shown in red and the post-graduate experiences shown in blue. Seventy-three percent (n=112) learned about literacy intervention on the job, while 58% (n=89) received education in an undergraduate program. Fifty-six percent of principals (n=86) reported receiving continuing education on literacy intervention. Fewer principals (39%, n=60) responded to receiving training or education in a graduate program and only 7% (n=11) reported learning from the SLP in his or her building.

Table 8







*Where did you receive the education or training on literacy intervention (e.g., phonological awareness, reading comprehension)? (Question 10a)*

Principal Response	Bar Graph	Number of Responses	Percent of Responses
Undergraduate program		89	58%
Graduate program		60	39%
On the job		112	73%
From the SLP(s) in my building(s)		11	7%
Continuing education		86	56%
Other (Please specify)		10	7%

Although many principals received education or training in literacy, when asked about spoken language development, only 35% of principals (n=65) reported that they received education or training. Sixty-eight percent of principals (n=136) were not educated or trained in spoken language development. The 65 principals who received education or training were asked where this education or training occurred. Sixty-nine percent of principals (n=45) learned about spoken language development in an undergraduate program, while only 26% (n=17) received information in a graduate program. Approximately half of the principals (48%, n=31) learned about spoken language on the job with 38% (n=25) responding to learning from an SLP in his or her school. Thirty-five percent of principals (n=23) received continuing education about spoken language development. Table 9 below depicts these results with the pre-graduate training programs shown in red and the post-graduate education or training shown in blue.

Table 9







*Where did you receive education or training on spoken language development?  
(Question 11a)*

Principal Response	Bar Graph	Number of Responses	Percent of Responses
Undergraduate program		45	69%
Graduate program		17	26%
On the job		31	48%
From the SLP(s) in my building(s)		25	38%
Continuing education		23	35%
Other (Please specify)		3	5%

Principals were also asked about their education and training in spelling assessment or intervention. Fifty-three percent (n=106) reported that they did not receive education or training, while 47% (n=95) responded that they received education or training. When the 95 principals were asked where they received the education or training in spelling, 71% (n=67) reported learning on the job. Fifty-four percent (n=51) had continuing education on spelling. Forty-seven percent of principals (n=45) had coursework in an undergraduate program, while only 24% (n=23) had coursework in a graduate program. Only 7% of principals (n=7) learned from an SLP in his or her building. These results are shown below in Table 10 with the pre-graduate training programs depicted in red and the post-graduate experiences depicted in blue.

Table 10

*Where did you receive the education or training on spelling assessment and/or intervention? (Question 12a)*

Principal Response	Bar Graph	Number of Responses	Percent of Responses
Undergraduate program		45	47%
Graduate program		23	24%
On the job		67	71%
From the SLP(s) in my building(s)		7	7%
Continuing education		51	54%
Other (Please specify)		4	4%

Similarly, principals were asked if they have read about the relationship between oral language and spelling. Only 24% reported that they read about this relationship while 76% did not. At the end of the principal survey, principals were asked to provide any additional comments about the topics in the survey. One principal commented on the

influence of her education on her role as a principal. The principal stated, “[I] worked as a former SLP for ten years before becoming an administrator. That has been very helpful in my own learning in looking at the various roles and responsibilities of staff in the building and how each can contribute to the learning of others for the sake of students.”




### **Scope of Practice of an SLP**

The background knowledge and education that SLPs and principals have previously received potentially impacted their current practices and beliefs regarding the scope of practice of SLPs. In order to determine the current involvement of SLPs in the development of literacy skills, SLPs were asked to report their implementation of written language, phonological awareness, and spelling interventions. Of the 175 SLPs with students who have language disorders on their caseloads, 51% (n=89) reported having goals for written language. In contrast, 75% of the SLP respondents (n=140) reported implementing phonological awareness interventions. Only 12% of SLPs (n=23) indicated implementing spelling interventions with the students on their caseloads.

The SLPs who implemented spelling interventions were asked with which disorder types spelling was targeted. As displayed in Table 11, 86% work on spelling with students who have articulation disorders, 73% with students who language impairments, and 68% with phonological disorders.

Table 11













*For which impairment types do you implement spelling intervention? (Question 5b)*

SLP Response	Bar Graph	Number of Responses	Percent of Responses
Language Impairment		16	73%
Phonological Disorder		15	68%
Articulation Disorder		19	86%

To further understand the SLP's role in spelling intervention, these SLPs were also questioned about the types of instructional methods they use for spelling. As shown in Table 12, the most commonly used strategies were discussing spelling patterns (78%, n=18) and using teachable moments during other language-based activities (61%, n=14). Few SLPs reported creation of unique spelling lists (17%, n=4) or the use of lists from other subjects (26%, n=6), as the majority (52%, n=12) responded that they used lists from the spelling curriculum. Drill practice (26%, n=6) was the least reported instructional method used by SLPs. Despite reporting the use of various spelling intervention techniques, only 39% (n=9) of the 23 SLPs who reported working on spelling responded that they wrote goals specifically targeting spelling.

Table 12

*Which of the following spelling intervention techniques do you use? (Question 5a)*






SLP Response	Bar Graph	Number of Responses	Percent of Responses
I use teacher-created spelling lists.		8	35%
I use lists from the spelling curriculum.		12	52%
I use curriculum-based lists from other subjects (e.g., science, math, etc.).		6	26%
I create my own spelling lists.		2	9%
I create unique spelling lists for individual students.		4	17%
I use drill practice.		6	26%
I discuss word patterns with my students.		18	78%
I incorporate spelling into interventions for morphological deficits.		9	39%
I use teachable moments for spelling during other language-based activities.		14	61%
I incorporate spelling into other literacy tasks, such as reading a story.		9	39%
I correct misspelling in student's written work.		10	43%
Other (Please specify)		2	9%

Although few SLPs were currently targeting spelling with the students on their caseloads, all respondents on the SLP survey were asked about the likelihood of future involvement in spelling intervention. Only 23% of SLPs (n=43) responded that they were likely to provide spelling intervention. Fifty percent of SLPs (n=92) reported being either

“somewhat unlikely” (27%) or “very unlikely” (23%), and 26% (n=48) responded being “neutral.” Table 13 below displays these results.

Table 13

*How likely are you to provide spelling intervention in the future? (Question 18)*

SLP Response	Bar Graph	Number of Responses	Percent of Responses
Very Unlikely		43	23%
Somewhat Unlikely		49	27%
Neutral		48	26%
Somewhat Likely		30	16%
Very Likely		13	7%
Total		183	100%






In addition to surveying SLPs about their current and future practices, principals were surveyed about their beliefs regarding an SLP’s scope of practice, including which disorders they believed were within an SLP’s scope of practice. Of the 202 respondents, 99% (n=201) selected speech sound disorders and 98% (n=198) selected language impairments. Fewer principals (75%, n=152) believed that literacy challenges were within an SLP’s scope of practice. Several principals provided additional areas in response to an open-ended choice, which included social communication, processing, and comprehension.

The 152 principals who viewed literacy challenges as within an SLP’s scope of practice were asked more specifically about which literacy skills an SLP should target. A majority of principals (95%, n=144) believed that phonological awareness should be targeted by an SLP, while a lesser majority (80%, n=122) selected reading. Only 64% of

principals (n=97) selected writing and spelling as literacy skills for SLPs to target. Table 14 below depicts these results.

Table 14

*Which literacy skills do you believe SLPs should target? (Question 5a)*

Principal Response	Bar Graph	Number of Responses	Percent of Responses
Phonological awareness		144	95%
Reading		122	80%
Writing		97	64%
Spelling		97	64%
Not sure		6	4%

All principals were asked a similar question regarding which professionals should provide spelling instruction. Ninety-eight percent (n=198) believed that it is the general education teacher's role, while 90% (n=181) also believed that special education teachers should provide spelling instruction. Although 72% (n=146) chose reading specialists, only 57% (n=115) selected SLPs as having a role in providing spelling instruction.









Additionally, both principals and SLPs were asked comparable questions on their respective surveys about the benefits of and factors preventing SLPs from working on spelling with the students on their caseloads. As shown below in Table 15, when SLPs were asked about the factors preventing them from working on spelling, 31% of SLPs (n=57) did not believe that spelling assessment and intervention is within their scope of practice. Thirty-one percent (n=57) also reported that there is a lack of education about spelling. Nineteen percent (n=35) reported challenges with collaboration among

professionals, while 15% of SLPs (n=27) reported a lack of administrator support for their involvement in spelling. Only 8% (n=14) reported already providing spelling intervention without any challenges.

Several SLPs (25%) provided open-ended responses regarding the factors preventing them from implementing spelling intervention. The most commonly reported responses referred to a lack of time, students having higher priority speech and language needs, and spelling being targeted by other professionals. One SLP stated that caseload needs are specific to speech and language and should not address services students are receiving from other professionals.

Table 15

*Which of the following factors prevent you from working on spelling with the students on your caseload? (Question 22)*







SLP Response	Bar Graph	Number of Responses	Percent of Responses
I already provide spelling intervention for students on my caseload and don't experience challenges.		14	8%
I don't believe that SLPs should provide spelling assessment and intervention to students on their caseloads.		57	31%
Lack of education and/or preparation in spelling		57	31%
Lack of administrator support for SLP involvement in spelling		27	15%
Challenges in collaborating with other professionals		35	19%
I don't perceive any challenges.		8	4%
Not sure		23	13%
Other (Please specify)		46	25%

When principals were asked a similar question about the factors preventing SLPs from working on spelling, half of the principals (n=101) reported a perceived lack of time to collaborate with other professionals. Twenty-nine percent of principals (n=59) reported a lack of SLP education in regard to spelling. Twenty-two percent of principals (n=44)

did not perceive any challenges for SLPs. Only 8% of principals (n=17) reported that they do not believe spelling intervention should be provided by SLPs, while 8% (n=16) reported that SLPs do not believe that they should provide spelling intervention. Fourteen percent of principals (n=29) provided open-ended responses, which included reports of overall time constraints and high caseload sizes. Table 16 below shows these results.

Table 16

*Which of the following factors do you believe prevent SLPs from working on spelling with the students on their caseloads? (Question 9)*

Principal Response	Bar Graph	Number of Responses	Percent of Responses
I don't believe that SLPs should provide spelling intervention.		17	8%
My SLPs don't believe that they should provide spelling intervention.		16	8%
Lack of SLP education and/or preparation in spelling		59	29%
Lack of time to collaborate with other professionals		101	50%
I don't perceive any challenges.		44	22%
Other (Please specify)		29	14%








Both groups were also asked to report any potential benefits of SLP involvement. The SLP responses are shown in Table 17 below. On the SLP survey, 67% (n=122) indicated that the integration of intervention between the classroom and speech and language goals was a benefit. Sixty-two percent (n=114) responded that students will benefit from the ability to address all areas affected by the language impairment, while

57% (n=104) perceived benefit in the opportunity to collaborate with other professionals.

Only 5% (n=9) SLPs did not perceive any benefits of SLP involvement in spelling intervention.

Table 17

*What do you believe are the benefits of SLPs' involvement in spelling instruction?  
(Question 21, SLP survey)*








SLP Response	Bar Graph	Number of Responses	Percent of Responses
Opportunity to collaborate with other professionals		105	57%
Ability to address all areas affected by language impairment		114	62%
Increased amount of spelling practice for students		69	38%
Integrate intervention approach (classroom and speech/language goals)		122	67%
I don't perceive any benefits.		9	5%
Not sure		20	11%
Other (Please specify)		9	5%

In response to a comparable question about the benefits of SLP involvement in spelling intervention, 83% of principals (n=167) viewed the integrated intervention approach of classroom and speech and language goals as beneficial. Eighty-two percent (n=165) perceived benefit in the ability to address all areas affected by the language impairment and 71% (n=144) thought the opportunity to collaborate with other professionals was beneficial. Approximately half (52%, n=105) of the respondents saw

the increased amount of spelling practice as a benefit and 39% of principals (n=78) thought SLP involvement may improve test scores. Only 6% (n=12) did not perceive any benefits of SLPs being involved in spelling intervention. Table 18 below depicts these results.

Table 18

*What do you believe are the benefits of SLPs' involvement in spelling instruction?  
(Question 8, Principal survey)*

Principal Response	Bar Graph	Number of Responses	Percent of Responses
Opportunity to collaborate with other professionals		144	71%
Ability to address all areas affected by language impairment		165	82%
Increased amount of spelling practice for students		105	52%
Integrated intervention approach (classroom and speech/language goals)		167	83%
Improved test scores		78	39%
I don't perceive any benefits		12	6%
Other (Please specify)		7	3%

In addition to answering several closed-ended questions about their current practices, many SLPs (n=42) responded to an open-ended question at the end of the survey asking them to provide any additional information about the topics discussed in the survey. The comments were varied, including some in support and some against SLPs having a role in spelling acquisition. Table 19 below provides an overview of the

comments based on the theme of SLPs expressing different viewpoints on whether or not they should be involved in spelling intervention.

Table 19

*Comments from SLPs about their role in spelling intervention*

<b>In Support</b>	<b>Against</b>
<p>“No specific spelling intervention is used with my students, but I often encourage them to sound out the letters. I also try to include the spelling of words when I am teaching irregular verbs/plurals as well as when working on ending sounds that are spelled one way but sound another. For example, walked sounds like walkt and boys sounds like boyz”</p>	<p>“I feel that any student would benefit from additional spelling practice from any adult (parents, teachers, SLPs, assistants, etc.). However, I feel that the same is true for math, science, etc. as well. I do understand that there is a strong correlation between reading/spelling/phonological awareness and communication. However, that is why we work in a team. We each work on our own part, and then it is a part of our job to collaborate with other teams members to make sure we cover all of our bases.”</p>
<p>“I think this is a great discussion topic- spelling intervention as well as writing intervention and the role of the SLP. I have several therapists in my district who insist that the role of the SLP is ONLY in verbal communication skills- that we have no role in written language/spelling development.”</p>	<p>“We have not targeted written language or spelling directly in the past as that would just expand our scope of practice here in the school. We barely have time for the needs of the oral language, articulation, augmentative and alternative communication students.”</p>

<p>“I feel that the Speech and Language Pathologists within the schools are vital in the role of spelling intervention simply because of our background in phonological awareness. It would be wrong to leave it all up to the teachers who might not recognize the error-ed patterns in a student's spelling and or decoding while reading. We must work as a team in order to truly benefit our struggling students.”</p>	<p>“With limited time to see students and other goals it is hard to put a priority on spelling for SLPs in the schools when they are getting instruction on this in the general education classroom.”</p>
<p>“I work with spelling only when speech/language students are experiencing difficulty. We practice memory strategies, patterns and phonological awareness. We use the words from weekly spelling units/tests.”</p>	<p>“It is my belief that if a child has difficulty with writing that is a learning disability and not a speech/language disability. It does have an effect on their speech/language; however, if we start to take on the role of spelling as well then our list will never end. Speech and language disabilities effect so many areas, but when it begins to impact math and spelling that is a learning disability.”</p>

### **School Environment and Collaboration**

Although SLPs and principals reported several challenges for SLPs to be involved in spelling intervention, collaboration with a team of professionals can help ensure that all of a student’s needs are met. To determine the amount of collaboration currently occurring between professionals, principals and SLPs were both asked similar questions on their respective surveys about the school environment and collaboration.







On the SLP survey, SLPs reported which service delivery models they used to provide services. Eighty-five percent (n=156) reported consultation with teachers, while fewer (75%, n=138) reported collaboration with other professionals. A majority of SLPs

(84%, n=155) reported providing services with a combination of pull-out and in the classroom services. Thirty-eight percent (n=70) reported only pull-out direct intervention, while only 14% of SLPs (n=26) reported providing direct intervention in the classroom only. Five SLPs replied with “Other” open-ended responses, including community-based services, whole class lessons, and the 3:1 model.

To compare, principals were asked which service delivery models they believed SLPs should use. Ninety-four percent of principals (n=190) believed that SLPs should use a combination of pull-out and in the classroom services. Eight-five percent (n=172) responded that collaboration with other professionals should be used, while 81% (n=164) responded to consultation with teachers as a service delivery model. Only 16% of principals (n=33) responded that only pull-out direct intervention should be used and fewer (8%, n=17) responded that direct intervention in the classroom only should be used. Five principals responded with “Other” open-ended responses, including co-teaching and choosing a service delivery model based on the students’ needs. Table 20 below depicts the comparison between current practices as reported by the SLPs and principal beliefs.

Table 20

*Which of the following service delivery models do you believe SLPs should use/do you use to provide services? (Questions 4/6)*

Response	Bar Graph	Principal Beliefs (blue)	SLP Current Practices (red)
Pull-out direct intervention only (based in the SLP's room)		33 (16%)	70 (38%)
Direct intervention in the classroom only		17 (8%)	26 (14%)
Some pull-out and some in the classroom		190 (94%)	155 (84%)
Collaboration with other professionals		172 (85%)	138 (75%)
Consultation with teachers		164 (81%)	156 (85%)
Other (Please specify)		5 (2%)	5 (3%)

A school environment that fosters collaboration between professionals is often established by principals. For this reason, principals were questioned about the ways collaboration occurs between professionals in their schools. Ninety-seven percent of principals (n=195) reported collaboration through face-to-face conversations and 91 (n=183) reported the use of email conversations. Eight-nine percent of principals (n=179) responded that scheduled team meetings are used, and 78% (n=158) responded that professionals share resources. Fewer principals (38%, n=77) reported that professionals observe other professionals. Only 4% of principals (n=8) responded that there are limited opportunities for collaboration in their school. Several principals provided open-ended

responses to the ways in which collaboration occurs, which included Professional Learning Community (PLC) meetings, Google Docs, and data review days.

To further understand the collaboration in schools, all principals were asked if collaboration between general education teachers and other professionals occurs in different subject areas. In regard to reading intervention, 89% of principals (n=180) reported that general education teachers collaborate with other professionals, while 4% (n=9) responded “No” and 6% (n=13) responded “Sometimes.”

A follow-up question, regarding the types of professionals general education teachers collaborate with, was asked of the 180 principals who reported that collaboration was occurring. The most common response was special education teachers (92%, n=165), followed by reading specialists (86%, n=154) and SLPs (73%, n=131). Twenty-two principals provided open-ended responses about other professionals with whom general education teachers collaborate for reading intervention. The most common responses included school psychologists, English-Language Learner (ELL) teachers, and other general education teachers.

When asked about general education teachers collaborating with other professionals in regard to spelling intervention, 47% of principals (n=94) responded “Yes” and 45% (n=90) responded “No.” Seventeen principals responded “Sometimes” and provided open-ended responses including in some grade levels, the use of technology limits the need, and spelling not being the primary focus. The 94 principals who responded “Yes” were asked with which professionals general education teachers collaborate with regarding spelling intervention. Ninety-five percent of principals (n=89) responded that general education teachers collaborate with special education teachers,

84% (n=79) responding reading specialists and only 63% (n=59) responding SLPs. Ten principals responded with the choice of “other” and provided open-ended responses, including other general education teachers, ELL teachers, principal, and diagnosticians.

On the SLP survey, SLPs who reported working on spelling were asked if they collaborate with general or special education teachers in regard to spelling intervention. Of the 23 respondents, 65% (n=15) responded that they collaborated, while 35% (n=8) responded that they did not collaborate in regard to spelling. The fifteen SLPs who collaborate on spelling instruction were asked how many times per week collaboration occurs. A majority (87%, n=13) responded once per week or less than once per week, while one SLP responded to collaborating two to three times per week. The remaining SLP reported collaborating daily.






The eight SLPs who responded that they do not collaborate regarding spelling instruction were asked about the reasons they feel that collaboration is not occurring. Fifty percent responded that there is limited time for collaboration. One SLP responded that there is limited common planning time between professionals, however none of the SLPs responded having limited support from the principal. Three SLPs responded with open-ended responses regarding the reasons for the lack of collaboration. One SLP stated that spelling is typically targeted more in conjunction with other areas.

Although a majority of SLPs reported that they were unlikely to provide spelling intervention in the future, SLPs were also asked about the likelihood that they would collaborate with general or special education teachers in regard to spelling instruction. A majority of the SLPs responded to being either “somewhat likely” (36%, n=66) or “very likely (17%, n=31).” Twenty percent of SLPs (n=37) replied “somewhat unlikely” and

16% (n=30) were “neutral.” Only 10% of SLPs (19%) reported being “very unlikely” to collaborate about spelling instruction.

Table 21

*How likely are you to collaborate with general or special education teachers about spelling instruction? (Question 19)*

SLP Response	Bar Graph	Number of Responses	Percent of Responses
Very Unlikely		19	10%
Somewhat Unlikely		37	20%
Neutral		30	16%
Somewhat Likely		66	36%
Very Likely		31	17%
Total		183	100%

### Summary

The results of this study provide information about the perceptions of both principals and SLPs in the Wisconsin public school system on spelling and collaboration. Overall, SLPs reported higher confidence levels in phonological awareness than writing and spelling, which is consistent with the education and training they received in these topic areas. More SLPs are providing phonological awareness intervention with the students on their caseloads than writing and spelling intervention. While few are currently providing spelling intervention, slightly more SLPs reported interest in future involvement in spelling intervention.

When compared to the responses of SLPs, fewer principals reported that they do not believe SLPs should target spelling. Nonetheless, more principals believe that reading and phonological awareness are within the scope of practice of SLPs than writing and spelling. In general, principals and SLPs agree about the benefits of SLP involvement in

spelling, however the majority of each sample cited an overall lack of time for SLPs to provide spelling assessment and intervention, as well as to collaborate with other professionals. Further implications of these results on current practices will be discussed in the next chapters.

#### IV. Discussion

In the current study, SLPs and principals working in the Wisconsin public school system were surveyed to obtain their perspectives on an SLP's role in the acquisition of spelling. The aims of the current study were: (a) to examine the relationships between the content and theoretical knowledge SLPs were exposed to in undergraduate and/or graduate school, their participation in professional continuing education, and the SLPs' and principals' views on spelling; (b) to determine the role(s) school-based SLPs currently play in supporting the acquisition of spelling skills by the students on their caseloads; and (c) to determine the perspectives of public school principals in regard to SLPs' role(s) in spelling and literacy instruction, including collaboration between professionals.

Based on the responses to both surveys, conclusions can be made regarding Wisconsin public school SLPs' and principals' current practices regarding spelling and the impact of their education and background knowledge on their current practices. Due to the 11% response rate of the principals and the unknown response rate of the SLPs, the responses and results of this survey may not be representative of all SLPs and principals in the Wisconsin public schools. While the results are valid and relevant to the experiences and opinions of the individuals who responded, the results should not be extended beyond the two samples in this study.

Demographic data regarding the SLPs' caseload sizes and grades served and the principals' prior occupations and years of experience were obtained. Demographic information may influence an individual's responses to survey questions based on his or her experiences. The average caseload reported by SLPs in this survey was 37 students,

which is consistent with the median caseload size of 40 students reported by ASHA for school-based SLPs in the state of Wisconsin in 2012 (ASHA, 2014). Additional statistical analyses of demographics and responses would be an area of future interest, however these additional analyses are not necessary for the purpose of the current study.

### **Education and Background Knowledge**

The current practices of both SLPs and principals in the Wisconsin public schools is likely impacted by the education and background knowledge of these professionals. The need for additional education in spelling is evidenced by the reported lack of education in spelling as cited by SLPs as one of the factors preventing them from working on spelling. Very few SLPs (11%) received education focused on spelling, while a vast majority (89%) received education or training on phonological awareness. More SLPs (33%) received education or training on written language than spelling, however this number was still much lower than those who received education or training on phonological awareness.

For most SLPs their education on phonological awareness and written language occurred in pre-graduate training programs as opposed to spelling, which more SLPs learned about in post-graduate experiences such as on the job or in continuing education. The literature agrees that spelling is not commonly addressed in both pre-graduate training programs and continuing education (Scott & Brown, 2001). More opportunities for education and training on the relationship between oral language and spelling skills, and the SLP's role in spelling acquisition could help SLPs provide spelling intervention.

As expected, due to their lack of education SLPs feel less confident in their skills to provide spelling intervention than phonological awareness and written language interventions. Only 18% of SLPs feel confident providing spelling intervention compared to 35% having confidence in providing written language intervention and 64% for phonological awareness. These responses are consistent with the responses of SLPs in the survey conducted by Blood, Mamett, Gordon, and Blood (2010). The SLPs in that study rated their knowledge and confidence lower on items related to spelling compared to other areas of written language and literacy. The contrast in confidence levels is potentially an effect of the differences in education and training across the subject areas. Their lack of confidence in spelling due to their limited education and training may reduce the likelihood of their involvement with spelling intervention.

Training in all three areas could help SLPs understand their role in each area and how to implement a productive intervention system collaboratively with other school professionals that will benefit the students on their caseloads. As anticipated, SLPs in the current study believe additional training in written language and spelling is needed, however over half also believe that they require additional phonological awareness training despite receiving more education in this topic area. This indicates that SLPs have a desire to learn more about all literacy skills as it could help them better serve their students. Ultimately, SLPs need exposure to various resources that can help them establish their role in literacy intervention, particularly spelling intervention, as it relates to the development of oral language.

Although many SLPs have not received specific training on spelling assessment or intervention, they do have the background knowledge of the language components that

influence the spelling of English words, such as phonology, morphology, and semantics. For many SLPs, explicit education or training on how these oral language skills impact spelling may be necessary to help them better understand their role in the acquisition of spelling knowledge and skills. Only 43% of the SLP respondents have read published research about the relationship between spelling and oral language skills. Optimistically, however, a greater percentage of SLPs have read about this relationship than the percentage of SLPs who currently target spelling. This indicates that more SLPs are aware of this relationship, yet may not consider their expertise as worthwhile or beneficial to the development of spelling skills.

Another factor influencing the SLP's role in literacy is the school environment as established by principals and other administrators. The nature of the school environment is likely impacted by the background knowledge and education of principals, which might also impact the role of an SLP in the school. For example, a school environment that fosters collaboration and emphasizes literacy may involve all professionals, including the SLP, in the development of literacy skills. A majority of principals (75%) have received education or training on literacy intervention with only half receiving education and training in spelling. Even fewer principals (35%) have learned about spoken language development.

While it is not critical for principals to be educated on spoken language development, it is important that they understand the relationship between spoken language and literacy. Very few principals (24%) have read any published research about the relationship between spelling and oral language skills, which may impact their views on the SLP's scope of practice and more specifically the SLP's role in spelling

acquisition. If principals are not aware of the relationship between spelling and oral language, SLPs need to provide this information as a way to support their involvement in the development of these skills with the students on their caseloads.

### **Scope of Practice of an SLP**

The scope of practice of a school-based SLP can encompass many areas. The focus of this study was to determine whether SLPs are including literacy skills, particularly spelling, in their scope of practice. According to this survey, a majority of Wisconsin school-based SLPs do not provide spelling intervention. Only 12% of the respondents provide spelling intervention to the students on their caseload, while more than half provide written language (51%) and phonological awareness (75%) interventions. Based on these percentages, it appears that Wisconsin school-based SLPs are beginning to target other literacy skills with their students, however the implementation of spelling intervention continues to remain low. This discrepancy may be due to the previously discussed lack of education and background knowledge of SLPs in the relationship between oral language skill and spelling.

Over a decade ago, ASHA (2001) advocated for the involvement of SLPs in reading and writing, including spelling. It appears that SLPs in the state of Wisconsin play a role in providing intervention for some literacy skills, such as phonological awareness, but their role in the acquisition of other skills, such as spelling, is minimal. By including education and training in pre-graduate training programs, it is possible that future SLPs would feel better equipped to play a role in reading, writing, and spelling as recommended by ASHA.

Although many SLPs are not targeting spelling, those respondents who are providing spelling interventions reported using language-based strategies as opposed to the traditional model focused on memorization, as suggested by current research evidence (Apel & Masterson, 2001; Masterson, Apel, & Wasowicz, 2002). Most of the SLPs discuss word patterns with their students and use teachable moments during other language-based activities, while very few incorporate drill practice. These responses indicate that those SLPs who are incorporating spelling into their current practices are utilizing evidence-based methods that could be successfully implemented by a greater number of SLPs based on their background knowledge in language.

In addition, the impairment types for which the SLPs in this study implement spelling intervention are consistent with the impairments discussed in the literature. The SLPs target spelling with language impairments, phonological disorders, and articulation disorders. As described in the literature, students with these impairment types are more likely to have difficulty with the acquisition of spelling skills and may warrant the additional assistance of an SLP to improve these literacy skills (Apel & Lawrence, 2011; Catts, Adolf, Hogan, & Weismer, 2005; Holm, Farrier, & Dodd, 2008; Larkin & Snowling, 2008; Larkin, Williams, & Blaggan, 2013; Leonard, Bortolini, Caselli, McGregor, & Sabbadini, 1992; Mackie & Dockrell, 2004; Sheng & McGregor, 2010).

While very few Wisconsin school-based SLPs currently provide spelling intervention to the students on their caseloads, a few more SLPs (23%) reported being likely to provide spelling intervention in the future. However, a majority of SLPs remain neutral or unlikely to provide spelling intervention in the future. Although the future involvement of most SLPs in the acquisition of spelling skills appears unlikely, it is

promising that more SLPs are interested in future involvement than the number who are currently providing spelling intervention. The reasons for a higher likelihood of future involvement are unclear, but it may suggest that some SLPs realize the value of their knowledge in language development in improving spelling skills.

The future involvement of SLPs in spelling may also be impacted by principals' beliefs about an SLP's scope of practice. Nearly all Wisconsin principals who responded to this survey believe that speech sound disorders and language impairments are within an SLP's scope of practice. Fewer principals (75%) believe SLPs should play a role in literacy development, however this percentage still shows that a majority of principals believe that there is a role for SLPs in the acquisition of literacy skills. Most of the principals who support an SLP's role in literacy development believe that SLPs should target phonological awareness and reading, with fewer principals (64%) supporting writing and spelling. Given the previously discussed lack of education about the relationship between spelling and oral language, their views on an SLP's role in writing and spelling are expected. For this reason, it is important for SLPs to advocate for their involvement in literacy development, including writing and spelling.

Despite the limited support for SLP involvement in spelling intervention, nearly all principals and SLPs perceive benefits from an SLP involvement. Most principals (83%) and SLPs (67%) agree that the integrated intervention approach between the classroom and speech and language goals, as well as the ability to address all areas affected by the impairment, will benefit the student. Current research concurs that literacy-based programs that integrate multiple areas (e.g., classroom and speech) and

focus on the language patterns are beneficial to all students (Apel & Masterson, 2001; Masterson, Apel, & Wasowicz, 2002; Scott & Brown, 2001).

The varied perspectives on an SLP's role in the schools is further evidenced by the factors preventing SLPs from working on spelling as reported by both the SLPs and principals. Very few SLPs and principals do not perceive any challenges for SLPs working on spelling, which may contribute to the lack of SLP involvement in spelling. A majority of SLPs cited a lack of education or preparation in spelling as an influencing factor, as previously discussed. The same percentage of SLPs believes that SLPs should not play a role in spelling assessment or intervention. Interestingly, a lesser percentage of the principals reported that same belief.

The most common open-ended response by both SLPs and principals was lack of time. This response is similar to the responses of teachers in the survey research conducted by Fresch (2003) and McNeill and Kirk (2014), which indicated that all types of school professionals are struggling with time constraints.

### **Collaboration and the School Environment**

Due to the lack of time to address specific areas such as spelling, as reported by the SLP respondents, it appears that school professionals could use support from each other to ensure that a student's needs are met. Although most school-based SLPs are not directly providing spelling assessment and intervention with the students on their caseloads, it is important to consider their role in collaboration with other professionals. Most of the SLPs who work on spelling (15 out of 23) reported that they collaborate with other professionals in regard to spelling. The SLPs who do not collaborate in regard to

spelling cited limited time for collaboration and lack of common planning time as reasons for not collaborating.

Despite citing a lack of time for collaboration on spelling, most SLPs are currently engaging in collaborative practices in other areas for the students on their caseloads. A majority of the SLP respondents reported using collaboration and consultation to interact with other professionals, which is consistent with the principals' beliefs about service delivery models. SLPs are most commonly using a combination of some pull-out and some classroom-based services. While few SLPs are using only pull-out direct intervention, this percentage is greater than the percentage of principals who believe only pull-out services should be used. This could be indicative of principals supporting more collaborative, inclusive practices while some SLPs are still unsure of how to incorporate these practices with students on their caseloads. It is important to note that these data could also reflect the practices of the particular subset of SLPs and principals who chose to respond to the survey as opposed all SLPs and principals in the Wisconsin public schools.

Based on the results, it appears that the Wisconsin principals who responded to the survey are creating school environments that foster collaboration. Very few principals reported that there are limited opportunities for collaboration in their school. Principals reported a variety of ways in which collaboration occurs. Specifically, they most commonly reported face-to-face conversations, email conversations, scheduled team meetings, and shared resources. The literature states that these collaborative environments that promote literacy development benefit students (Cosner, 2011; Danridge, Edwards, & Pleasants, 2000).

Even though principals are creating collaborative environments, this collaboration does not appear to be occurring in all subject areas. A vast majority of principals reported collaboration between general education teachers and other professionals in regard to reading intervention, however less than half reported the same for spelling intervention. Also, fewer principals reported that general education teachers collaborate with SLPs on spelling than reading. It is likely that the limited role of SLPs in the acquisition of spelling impacts their involvement in collaboration. If SLPs felt confident in their skills with regard to spelling, they might be more likely to promote their involvement in the acquisition of spelling knowledge and skills.

Principal support to develop stronger relationships between professionals will help enhance collaboration in all subject areas. Many professionals desire a stronger relationship with other professionals in order to better understand the culture and scope of practice of their colleagues (Cooley-Nichols & Sheffield, 2014). According to the results of the current study, general education teachers are not taking full advantage of the expertise of SLPs on language development and the connection to literacy. Principals consistently reported that general education teachers collaborate less with SLPs than other professionals in regard to reading and spelling. Without a greater understanding of each other's roles, professionals will not utilize all of the support available to them. Again, it is imperative for SLPs to advocate for themselves about their scope of practice and their role in literacy development.

## Conclusions

Based on the results of this study, it appears unlikely that SLPs practicing in the Wisconsin public school system will implement direct spelling assessment and intervention. According to the respondents in this study, lack of time and education are the main factors influencing their limited involvement in spelling acquisition. It is clear that many SLPs need additional education or training on how they can support the literacy development of the students on their caseloads, including spelling. The literature indicates there is a role for SLPs in spelling, however it appears that SLPs are not yet confident in how to put that information into practice or not enough SLPs are aware of the literature (Apel & Lawrence, 2011; Carson, Gillon, & Boustead, 2011; Leask & Hinchliffe, 2007; Lombardino, Bedford, Fortier, Carter, & Brandi, 1997; Masterson & Crede, 1999; Scott & Brown, 2001).

For SLPs, increasing their involvement in other academic areas impacted by a speech and language impairment, such as spelling, will take time. According to this study, time constraints restrain SLPs' ability to be involved in these areas. While the lack of time may be overwhelming, it is important for SLPs to be involved in all areas affected by the speech and language impairment, whether it is through direct intervention or collaboration.

Collaboration could be an effective way for SLPs to be involved in multiple areas while reducing the time constraints. SLPs could share their ideas on how to assist the students on their caseload with their spelling, while not having an extensive direct role that will take increased time. The principals in this study report that they have already established collaborative environments in most subject areas and many support the role of

SLPs in some literacy skills, but SLPs need to be proactive in order to become involved in this process.

Overall, school-based SLPs in the state of Wisconsin appear to be on the right track in their involvement with literacy development. While their role in spelling is limited, with increased education and collaboration, spelling intervention can be applied by SLPs in school settings, and students can benefit from the additional practice opportunities.

### **Limitations**

Every research study has limitations that need to be discussed. In the current study it is important to note that the response rate of the SLP survey was unable to be obtained due to the distribution method. A limitation of this study was that the number of SLPs who received the survey from their principal was unknown. This distribution method was selected because it provided the best opportunity to reach every school-based SLP in the state of Wisconsin.

In addition, several urban school districts had additional requirements for approval to conduct research within their districts. The timeline of this study did not correspond with the timelines of these districts, therefore a few urban districts in the state of Wisconsin were not included in this study. This limitation may indicate that the data is not representative of the largest districts in the state, and may reflect a response bias.

### **Future Directions**

The results of the current study have provided information about the current practices of a subset of Wisconsin school-based SLPs. Additional research on the education and training and the collaborative practices of school-based SLPs is necessary to determine how SLPs could be supported to increase their involvement in spelling intervention. One limitation to this study was the exclusion of the largest school districts in Wisconsin. A future study could ensure that the additional requirements for approval in those districts are met, thus allowing their SLPs and principals to respond to the survey. The inclusion of these districts would provide more accurate results for the state of Wisconsin.

In addition to including the urban districts in a future study, SLPs and principals from other states could be sampled. Future research could target states with higher median caseloads to determine the effect of caseload size on SLP involvement in literacy development, particularly spelling. A survey population that includes more states will allow for further generalization of the results.

To address the lack of education and training on spelling intervention, future research could survey speech-language pathology training programs throughout the state of Wisconsin to determine their views on the SLP's role in the acquisition of literacy skills. This could be an area to investigate in depth to determine which areas of literacy are being addressed in training programs. This information will provide a better understanding of the training SLPs receive and how training programs could make improvements, if necessary.

Beyond conducting additional survey research, alternative research methods that closely investigate the collaboration between SLPs and other professionals in the school setting could be used. For example, a case study examining a school's current methods for collaboration could be beneficial in helping determine areas in which schools need assistance to enhance collaboration. Future research could focus on incorporating strategies for developing strong relationships among professionals while investigating the impact on collaborative practices.

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## Appendix A

### SLP Survey Questions

The following survey addresses your training and involvement in phonological awareness, written language, and spelling intervention, and your perspectives on the role SLPs should play in spelling acquisition. The scope of practice for SLPs will vary from district to district depending on caseload and school environment.

*The following questions relate to your current involvement in language assessment and intervention.*

1. Do you currently provide services for students with language impairments?
  - Yes
  - No
  - 1a. Approximately how many students on your current caseload have language impairments? \_\_\_\_\_
  - 1b. Do any of these students on your caseload have goals targeting written language?
    - Yes
    - No
    - i. At approximately what grade level do you begin implementing written language goals?
      - Kindergarten to 2<sup>nd</sup> grade
      - 3<sup>rd</sup> to 5<sup>th</sup> grade
      - 6<sup>th</sup> to 8<sup>th</sup> grade
      - 9<sup>th</sup> to 12<sup>th</sup> grade
2. Do you currently provide services for students with speech sound impairments, including articulation impairments and phonological disorders?
  - Yes
  - No
  - 2a. Approximately how many students on your current caseload have phonological disorders? \_\_\_\_\_
3. Do you currently provide phonological awareness intervention?
  - Yes
  - No

3a. For which impairment types do you teach phonological awareness skills?  
(Please check all that apply).

- Language Impairment
- Phonological Disorder
- Articulation Disorder
- Other (Please specify)\_\_\_\_\_

*The following questions relate to your current involvement in spelling intervention.*

4. Which best describes the type of spelling program used in your school's general education classrooms?

- Traditional (pre-test/post-test, focus on memorization of words)
- Language-based lists (lists based on language patterns)
- Literacy-focused (individualized spelling lists based on students' written work)
- Not sure
- Other (Please specify)\_\_\_\_\_

4a. What is the name of your school's spelling program?

- \_\_\_\_\_
- Unknown

5. Do you currently implement spelling intervention with any students on your caseload?

- Yes
- No

5a. Which of the following spelling intervention techniques do you use?  
(Please check all that apply).

- I use teacher-created spelling lists
- I use lists from the spelling curriculum
- I use curriculum-based lists from other subjects (e.g., science, math, etc.).
- I create my own spelling lists.
- I create unique spelling lists for individual students.
- I use drill practice.
- I discuss word patterns with my students
- I incorporate spelling into interventions for morphological deficits.
- I use teachable moments for spelling during other language-based activities.
- I incorporate spelling into other literacy tasks, such as reading a story
- I correct misspellings in student's written work
- Other (please specify)\_\_\_\_\_

5b. For which impairment types do you implement spelling intervention?  
(Please check all that apply).

- Language Impairment
- Phonological Disorder
- Articulation Disorder
- Other (Please specify)\_\_\_\_\_

5c. Do any of these students on your caseload have goals specifically targeting spelling?

- Yes
- No

5d. At approximately which grade level do you begin implementing spelling goals?

- Kindergarten to 2<sup>nd</sup> grade
- 3<sup>rd</sup> to 5<sup>th</sup> grade
- 6<sup>th</sup> to 8<sup>th</sup> grade
- 9<sup>th</sup> to 12<sup>th</sup> grade

5e. Do you currently collaborate with general or special education teachers in regards to spelling instruction?

- Yes
- No

i. How many times per week do you collaborate with general or special education teachers on spelling instruction?

- Less than once per week
- Once per week
- 2-3 times per week
- 4 times per week
- Every day

ii. In what ways does this collaboration between professionals occur in your school? (Please check all that apply).

- Scheduled team meetings
- Face to face conversations
- Email conversations
- Sharing resources
- Observations other professionals
- Other (please specify)\_\_\_\_\_

iii. Why do you feel that collaboration with general or special education teachers regarding spelling instruction is not currently occurring [if they responded *no* above]?

- limited time for collaboration
- limited common planning time
- limited support from principal
- Other (please specify)\_\_\_\_\_

6. Which of the following service delivery methods do you use to provide services? (Please check all that apply).

- Pull-out direct intervention only (based in the SLP's room)
- Direct intervention in the classroom only
- Some pull-out and some in the classroom
- Collaboration with other professionals
- Consultation with teachers
- Other (please specify)\_\_\_\_\_

*The following questions relate to your education, training, and background in phonological awareness, written language, and spelling assessment and intervention.*

7. Have you received education or training on phonological awareness?

- Yes
- No

7a. Where did you receive the education or training on phonological awareness? (Please check all that apply).

- Undergraduate program
- Graduate program
- On the job
- Continuing education
- Other (Please specify)\_\_\_\_\_

8. How confident do you feel providing phonological awareness assessment and/or intervention?

- Very unconfident
- Somewhat unconfident
- Neither confident nor unconfident
- Somewhat confident
- Very confident

9. Do you feel you need additional training in phonological awareness assessment and intervention?

- Yes
- No

10. Have you received education or training on written language assessment and/or intervention (NOT including spelling)?

- Yes
- No

10a. Where did you receive the education or training on written language assessment and/or intervention (NOT including spelling)? (Please check all that apply).

- Undergraduate program
- Graduate program
- On the job
- Continuing education
- Other (Please specify) \_\_\_\_\_

11. How confident do you feel providing written language assessment and/or intervention?

- Very unconfident
- Somewhat unconfident
- Neither confident nor unconfident
- Somewhat confident
- Very confident

12. Do you feel that you need additional education or training in written language assessment and/or intervention?

- Yes
- No

13. Have you received education or training that focused specifically on spelling assessment and/or intervention?

- Yes
- No

13a. Where did you receive the education or training on spelling assessment and/or intervention? (Please check all that apply).

- Undergraduate program
- Graduate program
- On the job
- Continuing education
- Other (Please specify)\_\_\_\_\_

14. How confident do you feel providing spelling assessment and/or intervention?

- Very unconfident
- Somewhat unconfident
- Neither confident nor unconfident
- Somewhat confident
- Very confident

15. Do you feel that you need additional education and training in spelling assessment and/or intervention?

- Yes
- No

16. Have you read any published research about the relationship between spelling and oral language skills?

- Yes
- No

16a. From which sources have you read about the relationship between spelling and oral language skills? (Please check all that apply).

- Peer-reviewed journal articles
- Websites
- Handouts from continuing education
- Blogs
- Other (please specify)\_\_\_\_\_

17. Which of the following professionals do you believe should provide spelling instruction and/or intervention? (Please check all that apply).

- General Education Teacher
- Special Education Teacher
- Reading Specialist
- Speech-Language Pathologist
- Other (Please specify)\_\_\_\_\_

*The following questions relate to your interest in implementing spelling services.*

18. How likely are you to provide spelling intervention in the future?
- Very unlikely
  - Somewhat unlikely
  - Neutral
  - Somewhat likely
  - Very likely
19. How likely are you to collaborate with general or special education teachers about spelling instruction?
- Very unlikely
  - Somewhat unlikely
  - Neutral
  - Somewhat likely
  - Very likely
20. Do you think any students on your caseload would benefit from individualized spelling instruction?
- Yes
  - No
21. What do you believe are the benefits of SLPs' involvement in spelling instruction? (Please check all that apply).
- Opportunity to collaborate with other professionals
  - Ability to address all areas affected by language impairment
  - Increased amount of spelling practice for students
  - Integrated intervention approach (classroom and speech/language goals)
  - I don't perceive any benefits.
  - Not sure.
  - Other (please specify)\_\_\_\_\_
22. Which of the following factors prevent you from working on spelling with the students on your caseload? (Please check all that apply).
- I already provide spelling intervention for students on my caseload and don't experience challenges
  - I don't believe that SLPs should provide spelling assessment and intervention to students on their caseloads.
  - Lack of education and/or preparation in spelling
  - Lack of administrator support for SLP involvement in spelling
  - Challenges in collaborating with other professionals
  - I don't perceive any challenges.
  - Not sure.
  - Other (please specify)\_\_\_\_\_

23. If you have any additional comments related to the topics in this survey please provide them here: \_\_\_\_\_

*The following questions relate to demographics. Please keep in mind that all responses are confidential and anonymously coded*

24. What is the highest level of education you received?

- Bachelor's degree
- Master's degree
- Doctoral degree

24a. What year did you receive your Bachelor's degree? \_\_\_\_\_

24b. What year did you receive your Master's degree in Speech-Language Pathology? \_\_\_\_\_

24c. What year did you receive your Ph.D. [if they responded *doctoral degree* above]? \_\_\_\_\_

25. How many years have you been a practicing Speech-Language Pathologist in the schools?

- Less than a year
- 1 to 5 years
- 6 to 10 years
- 11 to 15 years
- 16 to 20 years
- 20+ years

26. For which grade(s) do you provide services? (Please check all that apply.)

- Early Childhood (3 to 5 year olds)
- Elementary (Kindergartener to 5<sup>th</sup> grade)
- Middle (6<sup>th</sup> to 8<sup>th</sup> grade)
- High (9<sup>th</sup> to 12<sup>th</sup> grade)

27. How many students are currently on your caseload? \_\_\_\_\_

## Appendix B

### Principal Survey Questions

Speech-language pathologists (SLPs) have knowledge in speech and language development including the impact of oral language skill on literacy development. SLPs are trained to work collaboratively with other professionals, including teachers, to support the academic development of students with lower literacy achievement. The scope of practice for SLPs will vary from district to district depending on caseload and school environment. The purpose of this survey is to obtain information about your perspectives on collaboration and on the role SLPs should play in spelling acquisition.

*The following questions relate to your perspectives on collaboration within your school.*

1. In your building(s) do general education teachers currently collaborate with other professionals in regard to reading intervention (e.g., phonological awareness, decoding, reading comprehension)?

- Yes
- No
- Sometimes (Please explain) \_\_\_\_\_

1a. If yes, with which types of professionals do they collaborate? (Please check all that apply).

- Reading specialists
- Special education teachers
- Speech-language pathologists
- Not sure
- Other (please specify) \_\_\_\_\_

2. In your buildings(s) do general education teachers currently collaborate with other professionals specifically in regard to spelling intervention?

- Yes
- No
- Sometimes (Please explain) \_\_\_\_\_

2a. If yes, with which types of professionals do they collaborate? (Please check all that apply).

- Reading specialists
- Special education teachers
- Speech-language pathologists
- Not sure
- Other (please specify) \_\_\_\_\_

3. In what ways does collaboration between professionals occur in your school? (Please check all that apply).

- Scheduled team meetings
- Face to face conversations
- Email conversations
- Sharing resources
- Observations of other professionals
- There are limited opportunities for collaboration.
- Not sure
- Other (please specify)\_\_\_\_\_

4. Which of the following service delivery models do you believe SLPs should use to provide services? (Please check all that apply).

- Pull-out direct intervention only (based in the SLP's room)
- Direct intervention in the classroom only
- Some pull-out and some in the classroom
- Collaboration with other professionals
- Consultation with teachers
- Other (please specify)\_\_\_\_\_

*The following questions relate to your perceptions of an SLP's scope of practice.*

5. Which of the following areas do you believe are within an SLP's scope of practice?

- Speech sound disorders
- Language impairments
- Literacy challenges
- Other (please specify)\_\_\_\_\_

5a. If you responded *literacy challenges* above, which literacy skills do you believe SLPs should target? (Please check all that apply).

- Phonological awareness
- Reading
- Writing
- Spelling
- Not sure
- Other (please specify)\_\_\_\_\_

6. Have SLPs in your school expressed interest in targeting spelling skills for students with language impairments?

- Yes
- No

Please provide any additional comments regarding question #6:

\_\_\_\_\_

7. Which of the following professionals do you believe should provide spelling instruction? (Please check all that apply).

- General Education Teacher
- Special Education Teacher/Resource Room Teacher
- Reading Specialist
- Speech-Language Pathologist
- Other (please specify) \_\_\_\_\_

8. What do you believe are the benefits of SLPs' involvement in spelling instruction? (Please check all that apply).

- Opportunity to collaborate with other professionals
- Ability to address all areas affected by language impairment
- Increased amount of spelling practice for students
- Integrated intervention approach (classroom and speech/language goals)
- Improved test scores
- I don't perceive any benefits
- Other (please specify) \_\_\_\_\_

9. Which of the following factors do you believe prevent SLPs from working on spelling with the students on their caseloads? (Please check all that apply).

- I don't believe that SLPs should provide spelling intervention.
- My SLPs don't believe that they should provide spelling intervention.
- Lack of SLP education and/or preparation in spelling.
- Lack of time to collaborate with other professionals.
- I don't perceive any challenges.
- Other (please specify) \_\_\_\_\_

*The following questions relate to your education, training, and background.*

10. Have you received education or training on literacy intervention (e.g., phonological awareness, reading comprehension, etc.)?

- Yes
- No

10a. Where did you receive the education or training on literacy intervention (e.g., phonological awareness, reading comprehension, etc.)? (Please check all that apply).

- Undergraduate program
- Graduate program
- On the job
- From the SLP(s) in my building(s)
- Continuing education
- Other (Please specify) \_\_\_\_\_

10b. Do you feel that you need additional training on literacy intervention?

- Yes
- No

11. Have you received education or training on spoken language development?

- Yes
- No

11a. Where did you receive the education or training on spoken language development? (Please check all that apply).

- Undergraduate program
- Graduate program
- On the job
- From the SLP(s) in my building(s)
- Continuing education
- Other (Please specify)\_\_\_\_\_

11b. Do you feel that you need additional training on spoken language development?

- Yes
- No

12. Have you received education or training on spelling assessment and/or intervention?

- Yes
- No

12a. Where did you receive the education or training on spelling assessment and/or intervention? (Please check all that apply).

- Undergraduate program
- Graduate program
- On the job
- From the SLP(s) in my building(s)
- Continuing education
- Other (Please specify)\_\_\_\_\_

12b. Do you feel that you need additional training on spelling assessment and/or intervention?

- Yes
- No

13. Have you read any published research about the scope of practice for school-based SLPs?

- Yes
- No

14. Have you read any published research about the relationship between spelling and spoken language skill?

-Yes

-No

15. If you have any additional comments related to the topics in this survey please provide them here: \_\_\_\_\_

*The following questions relate to demographics. Please remember all responses are confidential and anonymously coded.*

16. Which of the following best describes the type of spelling program/curriculum used in your school's general education classrooms?

-Traditional (pre-test/post-test, focus on memorization of words)

-Language-based lists (lists based on language patterns)

-Literacy-focused (individualized spelling lists based on students' written work)

-Not sure

-Other (Please specify)

16a. What is the name of your spelling program?

- \_\_\_\_\_  
-Unknown

17. What is the highest level of education you received?

-Graduate degree

-Graduate degree and administrative certificate

-Doctoral degree

18. What was your undergraduate program major?

- \_\_\_\_\_ (open-ended)

19. What was your occupation prior to becoming a principal?

-Elementary school general education teacher

-Middle/High school general education teacher

-Special education teacher

-SLP

-Other (please specify) \_\_\_\_\_

20. How many years have you been a principal in the public schools?

-Less than a year

-1 to 5 years

-6 to 10 years

-11 to 15 years

-16 to 20 years

-20+ years

## Appendix C

### Cover Letter

Dear Participant:

As a graduate student in Communication Sciences and Disorders at the University of Wisconsin-Eau Claire, I invite you to help with my thesis research project titled: *Perspectives of school speech-language pathologists (SLPs) and principals on the role of SLPs in spelling acquisition*. The purpose of my study is to determine the current involvement of SLPs in Wisconsin in spelling instruction and intervention, and to examine the relationship between the beliefs of SLPs and principals. As an (SLP/principal) in the Wisconsin public schools you have been invited to participate.

If you choose to participate in this study, you will be asked to complete an online survey administered by the Qualtrics software program. You will be asked questions regarding your perspectives on the role of an SLP in written language interventions, primarily spelling. Participation in this study may benefit you by giving you an opportunity to contribute to research in the field of speech and language pathology that may influence future practice models in regards to literacy.

The survey is anonymous and your name or school's name will not appear anywhere within the survey; therefore the data will not personally identify with you or your school. The IP addresses of all participants will be removed from the data set by the Qualtrics software.

It is estimated that the survey will take approximately 10 minutes to complete. Your participation in this survey is completely voluntary and you may withdraw from the survey at any time without negative consequences. **By completing and submitting the survey you are giving your consent to participate in this study.**

At the end of the survey, you will be provided with the opportunity to enter your email address into a drawing for a \$25 gift card to your choice of Amazon or iTunes. Your participation in this drawing is completely voluntary and you may complete the survey without entering the drawing. Your survey responses will remain anonymous and will not be connected to your email address.

Thank you for your time and consideration!

Sincerely,

Kayla Knueppel, Graduate Thesis Researcher

If at any time you have question about the study, you may contact:

Kayla Knueppel  
Department of Communication Sciences and Disorders  
Human Sciences and Services Building  
University of Wisconsin-Eau Claire

Eau Claire, WI 54702  
knueppkn@uwec.edu

or

Vicki Samelson, Ph.D.  
Department of Communication Sciences and Disorders  
HSS 119  
University of Wisconsin-Eau Claire  
Eau Claire, WI 54702  
715-836-4919  
samelsvm@uwec.edu

If you have questions or concerns about the treatment of participants in this study you may call or write:

Michael Axelrod, Ph.D., Chair  
Institutional Review Board for the Protection of Human Subjects  
Schofield 17  
University of Wisconsin-Eau Claire  
Eau Claire, WI 54702-4004  
715-836-2373

## Appendix D

### Survey Contacts

#### Initial Invite (Principals)

Dear colleague,

My name is Kayla Knueppel and I am a second-year graduate student at the University of Wisconsin-Eau Claire, studying Speech-Language Pathology. As a principal in the Wisconsin public schools, you are invited to participate in survey research for my thesis project entitled *Perspectives of school speech-language pathologists (SLPs) and principals on the role of SLPs in spelling acquisition*. The purpose of my study is to determine the current involvement of SLPs in Wisconsin in spelling instruction and intervention, and to examine the relationship between the beliefs of SLPs and principals. As a principal in the Wisconsin public schools you have been invited to participate.

In addition to completing a principal survey, I am also requesting that you distribute a different survey to the SLP(s) working in your school(s). Attached to this email is a copy of the SLP survey questions for your information. An additional email containing an invitation for SLPs to participate, as well as the survey link for SLPs will be sent now and again later this month. Please feel free to include your own message encouraging SLPs to participate when you forward the survey!

After completing the survey, you will be provided with the opportunity to enter your email address into a drawing for a \$25 gift card to your choice of Amazon or iTunes. Your participation in this drawing is completely voluntary and you may complete the survey without entering the drawing. Your survey responses will remain anonymous and will not be connected to your email address.

If you wish to participate in the principal survey, please click the link below and follow the survey instructions.

(Survey Link)

I truly appreciate your time and willingness to help with my research.

Sincerely,

Kayla Knueppel  
Graduate Student  
UW-Eau Claire  
knueppkn@uwec.edu

**Initial Invite (SLPs)**

Dear colleague,

My name is Kayla Knueppel and I am graduate student at the University of Wisconsin – Eau Claire studying Speech and Language Pathology. I would like to invite you to participate in survey research for my thesis project entitled *Perspectives of school speech-language pathologists (SLPs) and principals on the role of SLPs in spelling acquisition*. With this research, school SLPs in the state of Wisconsin are being surveyed to determine your perspectives on the role SLPs should play in the acquisition of spelling skills.

After completing the survey, you will be provided with the opportunity to enter your email address into a drawing for a \$25 gift card to your choice of Amazon or iTunes. Your participation in this drawing is completely voluntary and you may complete the survey without entering the drawing. Your survey responses will remain anonymous and will not be connected to your email address.

If you wish to participate, please click the link below and following the survey instructions. Your opinions and responses are valued!

(Survey Link)

Thank you for your time and participation; it is truly appreciated.

Sincerely,

Kayla Knueppel  
Graduate Student  
UW-Eau Claire  
knueppkn@uwec.edu

**Second Follow-Up Invite/Thank you (Principal)**

Dear colleague,

On (date) I sent you an invitation to participate in my thesis project survey research regarding the role of SLPs in spelling instruction and intervention. If you have not already done so, I invite you to share your opinion! The brief survey will be available for approximately two more weeks.

After completing the survey, you will be provided with the opportunity to enter your email address into a drawing for a \$25 gift card to your choice of Amazon or iTunes. Your participation in this drawing is completely voluntary and your survey responses will remain anonymous.

For those who have already participated, thank you! Your responses are valued.

(Survey Link)

Thank you again for your time and participation; it is truly appreciated.

Sincerely,

Kayla Knueppel  
Graduate Student  
UW-Eau Claire  
knueppkn@uwec.edu

**Second Follow-Up Invite/Thank you (SLP)**

Dear colleague,

On (date) I sent you an invitation to participate in my thesis project survey research regarding the role of SLPs in spelling instruction and intervention. If you have not already done so, I invite you to share your opinion! The brief survey will be available for approximately two more weeks.

After completing the survey, you will be provided with the opportunity to enter your email address into a drawing for a \$25 gift card to your choice of Amazon or iTunes. Your participation in this drawing is completely voluntary and your survey responses will remain anonymous.

For those who have already participated, thank you! Your responses are valued.  
(Survey Link)

Thank you again for your time and participation; it is truly appreciated.

Sincerely,

Kayla Knueppel  
Graduate Student  
UW-Eau Claire  
knueppkn@uwec.edu

**Final Thank You (Principal)**

Dear colleague,

If you were able to complete the survey regarding the role of school SLPs in spelling acquisition, I would like to thank you for your participation. Your time and responses are highly valued. I would also like to thank you for distributing an additional survey to the SLP(s) in your school(s). If you have any additional questions regarding the survey or my thesis project, please feel free to contact me at knueppkn@uwec.edu.

Once again, thank you for your interest and input!

Sincerely,

Kayla Knueppel  
Graduate Student  
UW-Eau Claire  
knueppkn@uwec.edu

**Final Thank You (SLPs)**

Dear colleague,

If you were able to complete the survey regarding the role of school SLPs in spelling acquisition, I would like to thank you for your participation. Your time and responses are highly valued. If you have any additional questions regarding the survey or my thesis project, please feel free to contact me at [knueppkn@uwec.edu](mailto:knueppkn@uwec.edu).

Once again, thank you for your interest and input!

Sincerely,

Kayla Knueppel  
Graduate Student  
UW-Eau Claire  
[knueppkn@uwec.edu](mailto:knueppkn@uwec.edu)

## Appendix E

### Additional Survey Data

Which best describes the type of spelling program used in your school's general education classrooms?			
SLP Response	Graph	Number of Responses	Percent of Responses
Traditional (pre-test/post-test, focus on memorization of words)		25	14%
Language-based lists (lists based on language patterns)		48	26%
Literacy-focused (individualized spelling lists based on students' written work)		25	14%
Not sure		59	32%
Other (Please specify)		25	14%
<b>Total</b>		<b>182</b>	<b>100%</b>

Other (Please specify)
high school level
Word Work
both traditional and language-based
content based spelling
language and literacy based
Phonics based - pattern words
emerging spelling
every teacher seems to have their own type
depends on grade level and teacher
None
not formal program
Word sorts
varies
combination of the above
Sitton Spelling
Pattern based
No common district/school wide spelling program at this time
our language arts program includes spelling words
high frequency
Words Their Way
Most of it is traditional, but some of it is language-based
words their way
Word Work



Principal Response	Graph	Number of Responses	Percent of Response
Traditional (pre-test/post-test focus on memorization of words)		45	22%
Language-based lists (lists based on language patterns)		62	31%
Literacy-focused (individualized spelling lists based on the students' written work)		57	28%
Not sure		16	8%
Other (Please specify)		21	10%
Total		201	100%

Other (Please specify)
no specific spelling program at the HS level
Traditional in 3rd grade, but we use the others in other grade levels.
At this point in the child's education, we focus on vocabulary development and roots.
Direct Instruction
combination of #1 and #2
We do not have a spelling program
All three of those are used within my building. It is dependent on the teacher.
Morphographs
High School curriculum rarely addresses spelling.
common words and word patterns
pre-school - just learning letters and simple words
Mixture of 1-3 above
none in middle school
depends on the grade level;
Direct Instruction
9th & 10th grade 'Word of the Day' acquisition.
We are struggling to find a program that fits in our school
A combination of the above
Word Their Way
Sitton Spelling
Stems

**What is the name of your spelling program?**

SLP Response	SLP Response
Rebecca Sitton	I don't know I am a new therapist in the state of Wi and I have only been in my school for 4 weeks. I don't have everything figured out yet.
Spelling Connections	Words Their Way
I work in a high school and we don't have a spelling program	Different approaches are taught within different classes or with different needs of students.
Unsure (new to school)	Words Their Way
Words Their Way	Not sure
Words Their Way	Spelling their way
Words their Way	No idea
It varies	Embedded in Reading Curriculum -
unsure	Words Their Way
N/A	Treasures
Not sure	Words Their Way
don't know	Not sure of name it is phonics based
Imagine It embedded into reading.	Super Kids for young elementary through 2nd grade, then each grade has their own program
we design our own but use Words Their Way as a Foundation	Words Their Way
none	Words Their Way
varies by grade	I don't know
not sure	Not sure
Unknown	Word Study
Houghton Mifflin Harcourt Journeys	Words Their Way
It goes with their Houghton Mifflin Reading Program I think, and L.D.	Words Their Way
LEAD 21	I believe they use Words Their Way and create spelling lists based on the child's spelling level
Wilson	SBA
Words Their Way	It's based off of the Basil
Sitton	Sitton
Based on the Imagine It reading	2nd grade words their way

Words Their Way	Words Their Way
N/A	Word Work
No formal spelling program	We don't have a spelling program. It is
Words Their Way	Imanine It reading program
Super Kids	do not know
Words their Way	Sitton High Frequency Spelling
Words Their Way	Words Their Way/ Houghton Mifflin
Word work	Words their way
Words Their Way	Journeys
I serve only students 3-5 so this doesn't	Words their Way
Don't know	Words Their Way
?	Words Their Way
Words their way	Words Their Way
Houghton-Mifflin Journeys Spelling	Unsure
Words Their Way is often used.	we don't have a specific program.
our school is only 4K and does not have	Sitton Spelling
Words Their Way	Don't know
no specific program.	Sitton
not known	Need to know words
?	Words Their Way
There is no specific spelling program.	It goes with the reading program which
word their way	Combined programs, however, some grades are using the "Journey's" Program which contains spelling within it. MindPlay is used here for reading.
Unsure	Not sure.
Words their way	SuperKids
Spelling Mastery	

Principal Response	Graph	Number of Responses	Percent of Responses
Provide name here:		99	52%
Not sure		93	48%
Total		192	100%

Principal Response	Principal Response
Part of our Literacy Collaborative Framework	Literacy Collaborative
Words Your Way	Varies By Grade Level
Rebecca Sitton	We are a Literacy Collaborative School receiving direct support from Iren Fountas (Lesley College) and Gay Sue Pinnell (Ohio State University).
SuperKids & Spelling Connectinos	created it using various resources
Words Their Way	Houghton Mifflin Reading Program & Words Their Way
Words Their Way	Spelling Mastery & Wonders Spelling
LEAD 21	Words Their Way
Words Their Way	Words Their Way
Words Their Way	LEAD 21
no special program	Words Their Way
No name - it is part of our balanced literacy program	core knowledge language arts
Journeys	Developmental
Phonics & Words Their Way	Journeys
Words Their Way	Lead 21
words their way at elementary and middle school level	Imagine It
Words Their Way	literacy by design
lucy caukins	Sitton
Journeys	depends on grade level-journeys
Words Their Way	Words Their Way
Words Their Way	Word Works
Words Their Way	words their way
Zaner-Bloser is the publisher we use	Literacy Collaborative
Words their way	Direct Instruction SRA
We don't use a spelling program.	No program - using Literacy Collaborative framework
Houghton Mifflin	Words Their Way

Spelling Mastery	Words Their Way
Treasures	Words Their Way
Words Their Way	Words Their Way
Lead 21 - spell board	Spelling Mastery, Morphs
We do not have a spelling program	Houghton Mifflin Journeys
Words Their Way	Benchmark Literacy
Words your way	Benchmark Literacy
DOL	Word Their Way
Words Their Way	Sitton Spelling
Word their way	Words Their Way
Words Their Way	Words Their Way
Wonders	Not a packaged program
Bev Tiener Word Study	words their way
Spelling Mastery	Lucy Caulkins
Word Work	Handwriting Without Tears
Sitton	Sitton
houghton Mifflin Spelling	Benchmark
Wonders Reading	Houghton Mifflin
Morphographs	Sitton
Sitton	Words Their Way
Words Their Way	Developmental Spelling
Words Their Way	Words There Way
Columbia Univ Teacher college word study (I think)	Part of the Journeys Resources
Words Their Way	skill builders