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A Scientific Approach to Sight Word Acquisition in Early Childhood

Emma J. Powers
ejp62@uakron.edu

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Emma J. Powers

Williams Honors College, University of Akron

Honors Research Project

Dr. Sarah Cooey

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Abstract

Teachers have commonly taught sight words through viewing the word as a whole unit and committing it to memory through repetition, but this practice bears little connection to phonics. While this method may work for some, for many students, especially those with specific learning disabilities, it is not enough. The focus of this research article is to analyze new instructional methods based in the Science of Reading, which utilize orthographic mapping, the creating of letter-sound connections (Ehri, 2014), to teach students to read, spell, and produce the meanings of sight words, and to compare these new methods to traditional methods of sight word instruction. The goal is to better understand how to explicitly teach sight words in early childhood for meaningful and automatic recognition.

Key words: sight words, orthographic mapping, phonological awareness

A Scientific Approach to Sight Word Mastery in Early Childhood

Sight words are a hot topic in the world of reading education. From district decisions on which word list to use to debates on whether to teach sight words in isolation or in context, there are certainly many aspects to analyze regarding this topic.

Firstly, what are sight words, and what is their significance? Ehri (2014) defines sight words in two ways. Historically, "People used to regard sight words as limited to high-frequency or irregularly spelled words," for example, *said, to*, and *some,* "but it turns out that all words when practiced become read from memory by sight" (Ehri, 2014, p. 6). The broader definition includes irregular, high-frequency, and regularly spelled words that have been committed to memory through practice. This broader definition is important because it hints at the deeper significance of sight word acquisition. The more words that the reader can read from memory with good automaticity and correctness, the fewer words that the reader needs to decode while reading. When readers are no longer inhibited by the need to slow down and decode the individual words, they are better able to pay attention to the meaning of the overall passage. "Sight of the word activates its pronunciation and meaning immediately in memory and allows readers to focus their attention on comprehension rather than word recognition" (Ehri, 2014, p. 6). After all, comprehension is the ultimate goal of all reading instruction, so the acquisition of sight words in one's memory supports this goal.

Approaches to Sight Word Instruction

Traditional Methods

The historical approach to sight word instruction typically emphasizes the idea that sight words are irregularly spelled and therefore cannot be sounded out. Thus, in these

approaches, the instructor typically focuses on the whole word as a unit. These words are most commonly selected from well-known sight word or high-frequency lists, such as Dolch, which was created in 1936 by E.W. Dolch to emphasize the importance of "tool words" rather than nouns in reading instruction (Dolch, 1936) or Fry's 1,000 Instant Words, which was created in 1979 and named for its author Dr. Edward Bernard Fry (Fry, 1979). In these two sight word/high-frequency lists, the expectation is for the words to be taught and practiced as whole units, not to be decoded. One well-known method in this tradition is to teach sight words using flashcards featuring the sight words, which are repeatedly rattled off by the class in a choral whole group setting. Additionally, sight words are often taught through repeated readings of parts of the word lists. Due to the way that these well-known lists have been taught in the past, even the word lists of new reading programs, such as Orton-Gillingham's Red Flag Words, which are meant to be taught with an emphasis on the grapheme-phoneme connection, are being taught as whole words, which is inconsistent with the reading program's instructions, instead emphasizing the irregular nature of the words rather than their grapheme-phoneme relations. "The message that some teachers are receiving (or perhaps inferring) from word list manufacturers, and therefore conveying to their students, is that these are words that should not or cannot be decoded or that the words do not necessarily need to be decoded to be stored in memory" (Miles, et al., 2017, p. 717).

The problem with this mindset is the fact that studies have shown that a large percentage of the words on the Dolch and Fry word lists, which are being taught as irregular and non-decodable, are in fact spelled using regular spelling patterns. "Of the 40 words on the first Dolch list, 17 (42%) were categorized as regularly spelled," (Miles, et. al.,

2017, p. 719). By their definition, regularly spelled words follow the rules of the most common letter-sound relationships. An additional eight words were labeled as "temporarily irregularly spelled words" denoting that decoding the words requires knowledge of a spelling pattern that the group of students has not learned yet, for example, the vowel plus r pattern in *for*, or *ay* as /ā/ in *play*. Only the final eight words (20% of the list) were labeled as truly irregular. Similar percentages are reflected in the Fry Instant List as well: 11 regularly spelled words (44%), seven temporarily irregularly spelled words (28%), and seven irregularly spelled words (28%) of the 25 in the list (Miles, et al., 2017). Thus, students are being instructed not to attempt to decode sight words, when, in fact, *many* of the words on the list have regular spellings. Miles et al. (2017, p. 715) point out, "Suggestions that these words should not or cannot be sounded out, as subsequently discussed, draw students' attention away from the grapheme-phoneme relations in the word." Would it not be better to call students' attention to the conventional spelling patterns that exist within sight words to assist in reading and spelling them?

Orthographic Mapping in Sight Word Acquisition

As teachers make the shift from teaching sight words as whole units through repetition to teaching sight words by orthographically mapping them into the students' memories, it is important to note a few key points. Firstly, what is orthographic mapping? Orthographic mapping, as defined by Ehri (2014), "involves the formation of letter-sound connections to bond the spellings, pronunciations, and meanings of specific words in memory. It explains how children learn to read words by sight, to spell words from memory, and to acquire vocabulary words from print" (Ehri, 2014, p. 5). Two important components of orthographic mapping are grapheme-phoneme knowledge (the

relationships between a letter or letter pattern and the sound it represents) and phonological awareness (the ability to segment, blend, delete, add, and manipulate sounds within spoken language).

When teachers utilize orthographic mapping in the instruction of sight words, they teach students to attend to each sound within the word, which is often aided by Elkonin boxes, a row of boxes in which each box represents a sound in the spoken word. For example, in the Science of Reading's "Say It, Tap It, Map It" method, as seen below in Figure 1, the teacher begins by saying the word aloud. The student then repeats the word. Next, the teacher has the student tap a box for each sound in the word while producing that sound orally. Last, they fill in the letter(s) to represent each sound in the word.

Figure 1
"Say It, Tap It, Map It"

Step 1: "Say It"	"this"		
Step 2: "Tap It"			
Step 3: "Map It"	th	i	s

The "Say It, Tap It, Map It" method facilitates the acquisition of sight words because in the components of this method, "spellings became bonded to pronunciations, clarified their phonemic constituents, and strengthened their phonological representations in memory" (Ehri, 2014, p. 16). The Elkonin boxes used in this method of instruction assist students in attending to all sounds within words, helping them to avoid skipping sounds —

and therefore letters — within the words. This tool emphasizes the fact that for each sound in the spoken word, there is a letter — or combination of letters — that represents that spoken sound within the written word. The results of a 2008 study by Rosenthal and Ehri showed, "orthographic mapping better explained the acquisition of new vocabulary words including their pronunciations than phonological working memory" (Ehri, 2014, p. 18). By segmenting pronunciations into phonemes, the learner is connecting the graphemes (written letters) to the phonemes that they hear within the word. In the case of words that are truly irregular, for example, said, the student "maps" the known letters onto the sounds — *s* for /s/ and *d* for /d/ — and then only needs to focus his/her attention on the part of the word that does not follow conventional spelling patterns, in this case, *ai* as /ĕ/. This special part of the word that defies the rules of English is sometimes referred to the "heart part" because it must be memorized by heart (Farrell, Hunter & Osenga, 2019). It is important for educators to keep in mind that while some "heart parts" are truly irregular, others simply mark spelling patterns that are regular but are unfamiliar to students at their current level of development.

Phases of Development in Word Reading and Spelling

Just as students progress through the different stages of spelling as they gain new skills, so too do they progress through different phases of development in word reading abilities. In 2005, Ehri proposed her connectionist theory regarding the phases in the development of word reading and spelling abilities, beginning at prealphabetic.

In the prealphabetic phase, the students may or may not know letters. They lack phoneme awareness and do not yet make grapheme-phoneme connections between spellings and spoken words. They cannot analogize, which is to use one word's spelling to

decode another. At this phase all words are spelled in a way that does not reflect phonics, and the student can only make sense of unfamiliar words using context, not decoding. Next comes the partial alphabetic phase of development.

In this phase of development, the student knows most of the letter shapes and names, but his/her knowledge of grapheme-phoneme connections is limited, as is their phonemic awareness. At this stage, students benefit from not only hearing and seeing the letter-sound connections, but also in seeing the mouth positions (articulatory features) that accompany the associated sounds. The student's sight word memory is defined by confusion between similarly spelled words. At this point, the student is still unable or hardly able to decode words. The student is, however, beginning to be able to use analogies for word spellings and predicts unfamiliar words using their initial letters and their context. To spell, the student relies on inventive spellings and is not often able to correct their spellings from memory. The next phase of development is the full alphabetic phase.

Students in the full alphabetic phase know most of the grapheme-phoneme connections of the writing system, as well as having full phonemic awareness, which includes the ability to segment and blend words. Their grapheme-phoneme connections are fully formed. When it comes to sight words, these students learn them by recalling the complete grapheme-phoneme connections, and their sight word memory is accurate and automatic, but limited to shorter words. The students are growing in their ability to decode unfamiliar words, including nonsense words. The ability to analogize is still developing but is inhibited by the students' small sight vocabulary. When attempting to read unfamiliar words, students in this phase rely on decoding and use context to self-correct. When spelling, the students use spellings that are phonetically correct and utilize grapheme-

phoneme connections. Their memories for correct spellings are growing in this tertiary phase as they move toward the consolidated alphabetic phase.

In the consolidated alphabetic phase, the final phase of development, students know their grapho-syllablic spelling units, and their grapho-syllabic connections are successful. They use their grapho-syllabic connections as their main strategy to learn sight words, and their sight word memory is distinguished from the previous phase in that multisyllabic words are now easier to learn. Students in this phase are proficient in decoding both unfamiliar words and nonsense words. They use analogizing as a strategy for unknown words. When faced with unfamiliar words, they use context, decoding, and/or analogy and then self-correct using the context. Lastly, their spelling is produced using both grapho-syllabic and grapheme-phoneme units to create spellings (Ehri, 2005). Their memory for correct spellings has now reached the proficient level.

Orthographic Mapping for Students with Reading Deficits

Using orthographic mapping as a tool for sight word instruction benefits not only typical learners, but also learners with reading deficits, such as those seen in students with specific learning disabilities. Traditionally, teachers have often selected sight words by their number in given list — for example the Fry Instant Words or Dolch list — however, in the case of students in Tier 2 and Tier 3 reading intervention, this sequence bears little connection to phonics instruction. “In essence, high-frequency word instruction is often fully divorced from phonics instruction. While this method works for many students, it is an abysmal failure with others” (Farrell, Hunter & Osenga, 2019, p. 1). Students with reading deficits require explicit instruction and a strategic sequence for their instruction. Farrell, Hunter & Osenga (2019) reported, “These students [in Tier 2 and Tier 3

instruction] could read words that followed spelling patterns they had learned and practiced, but they struggled learning words that made no sense to them from a sound–spelling viewpoint. We suggested that the students learn high-frequency words according to spelling patterns, and not according to frequency number or theme" (p. 1). Once the words had been grouped according to spelling pattern and matched to the students' phonics lessons, the students were far more successful in correctly encoding the sight words. Rather than viewing the entire word as a unit to memorize, students were taught to orthographically map the regular parts of the word and save their memory for only the phonetically irregular part of the words. "With this approach, students had an easier time learning to read the word *said* because they knew that only the letters **ai** are an unexpected spelling. Students also soon stopped confusing was and saw because they learned to think about the first sound before reading or spelling those words" (Farrell, Hunter & Osenga, 2019, p. 1). With this knowledge of orthographic mapping and implementation of a more strategic sequence for instruction, both typical readers and struggling readers can be more successful in reading and writing sight words.

When teachers are armed with a good understanding of their students' current level of knowledge regarding grapheme-phoneme connections and decoding ability, they can better explain sight words and convert everyday words into learning experiences with the goal of those words entering sight word vocabulary and becoming automatic and accurate for their students. Once equipped and informed, teachers can select heart parts that are appropriate for their group of learners. For example, in the word this, the *th* may be referred to as a heart part in Kindergarten since students have not yet learned that the digraph *th* can produce /th/. Later, in the older grades, *th* would not be considered a heart

part because it follows the conventions of English. Similarly, in the case of vowel teams, the vowel team within a word may be considered a heart part in lower grade levels since it has not yet been taught, whereas in 2nd and 3rd grade the vowel team would be viewed as regularly spelled. For this reason, as well as others, it is important to consider the scope and sequence of phonics instruction when determining how best to instruct students in sight word acquisition.

Conclusion

It is essential to students' reading development that they expand their sight word vocabulary. Many methods have been employed over the years in pursuit of this objective. The view that sight words are irregularly spelled words that should not or cannot be decoded is erroneous and leads students away from the grapheme-phoneme connections that exist within many sight words. Through orthographically mapping sight words, students can form connections between the spoken words and the letters and spelling patterns that represent them. The better the student's ability to produce words from their sight word memory, rather than needing to slow down and decode individual words, the more concentration the student can place on understanding the overall meaning of the passage being read. Students, guided by knowledgeable teachers who instruct them to look for similarities and sound-letter relationships within words, will become successful readers.

References

Dolch, E. W. "A Basic Sight Vocabulary." *The Elementary School Journal*, vol. 36, no. 6, 1936, pp.456-460.

Ehri, L. (2014). Orthographic mapping in the acquisition of sight word reading, spelling memory, and vocabulary learning, *Scientific Studies of Reading*, *18:1*, 5-21, DOI: 10.1080/10888438.2013.819356

Fry, E. (1979). *1000 Instant Words: The most common words for teaching reading, writing, and spelling*. ISBN 0809208806.

Farrell, L., Hunter, M., & Osenga, T. (2019). *A new model for teaching high-frequency words*. Retrieved from Reading Rockets: https://www.readingrockets.org/article/new-model-teaching-high-frequency-words

Miles, K. P., Rubin, G. B., & Gonzalez-Frey, S. (2017). Rethinking sight words. *The Reading Teacher, 71*(6), 715-726.

Rosenthal, J., & Ehri, L. (2008). The mnemonic value of orthography for vocabulary learning. *Journal of Educational Psychology*, *100*(1), 175-191. DOI: 10.1037/0022-0663.100.1.175