Evidence Challenges Teaching Words "By Sight"

by Louisa Moats

With the revival of whole language ideas and practices over the last decade, explicit, systematic, code-based reading and spelling programs have fallen out of favor in many districts and classrooms. Instead, "guided reading" practices, broadly construed, are widespread. These approaches either de-emphasize or seriously neglect teaching of the alphabetic code and of language structure in general. Students are expected to read for meaning out of the starting gate—regardless of whether they actually know how to read. They are also expected to read by osmosis—to learn to read by reading, as Smith (1979) and Goodman (1986) argued when whole language was ascendant.

Among the ideas and practices that accompany these approaches are "sight word" teaching practices that are not only ineffective, but that ignore what we know about language itself and about the cognitive-linguistic processes of word learning (Christensen & Bowey, 2005; Ehri, 2014; Kilpatrick, 2015; Moats, 2017, 2010; Seidenberg, 2017). In this article I briefly describe those whole word practices, explain why they are misguided, and urge that they be replaced with a multi-linguistic approach to teaching and learning. That is what will help students read "by sight."

Practices Reflecting Beliefs that Word Learning is Primarily a Visual Memory Function

Although they may not be explicitly stated, underlying beliefs about learning to read can be deduced by observing common teaching practices. Alphabetic word walls, for example, are promoted in "guided reading" (Fountas & Pinnell, 1996, 2008) classrooms and related interventions. The teacher posts each alphabet letter on a bulletin board and lists whole words the students are to learn in a column or bucket under each letter. What happens, typically, is something similar to Figure 1. The first letters of each word are often graphemes or parts of graphemes (th, sh, ou, ea) that represent several different phonemes. The alphabetic word wall does not highlight phoneme-grapheme correspondences; students are expected to learn letter sequences that are untethered to speech. Often, the teacher is advised to draw a line around the outside of each word, as if the outside configuration of a word's shape were a primary cue for identifying and remembering it. In fact, the outside configuration is of almost no help in printed word learning (Seidenberg, 2017). We can read various fonts, lower and upper case, and various individuals' handwriting because we recognize letters as abstract linguistic symbols, not as fixed spatial forms.

Instead of teaching students to map whole printed words to their sounds, teachers are coached to correct student errors by drawing attention to meaning, syntax, and visual cues in the text such as illustrations (Denton, Fletcher, Taylor, Barth, & Vaughn, 2014). Sounding a word out is a strategy of last resort, after looking at pictures, thinking about the whole sentence, or looking at the first letter and guessing at something that would make sense. Language is not analyzed—at any level—oral or written.

Spelling instruction, when it occurs, emphasizes visual memory techniques such as writing a word 10 times in a list, closing the eyes and reciting the letter names, or tracing a model until it can be written from memory. There is no emphasis on understanding orthographic patterns or why the word is spelled the way it is.

Finally, texts given to beginning readers are not controlled for phonic patterns, so if a phonics concept is taught, that correspondence pattern is not reinforced in text reading (Murray, Munger, & Hiebert, 2014). Rather, students are to read high frequency words and words of high interest by sight recognition because they are supported by contextual cues. To understand why these practices contradict what we know about learning to read, and with what they should be replaced, we need to begin by considering whether there is such a thing as a word that must be or can be learned "by sight."

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Ee	Ss	Tt	Oo
eye	she	the	one
egg	see	that	out
eat	shop	this	of
even	seven	to	only
ever	six	two	on
			off

Figure 1. Example of how a word wall might be displayed in a guided reading classroom.

What is a Sight Word?

Teachers often confuse the terms *sight word, high frequency word, and irregular word* as synonymous. For the purposes of this article, a *sight word* is any word known well enough that it can be automatically and accurately identified, without the conscious effort of decoding and without hesitation. If a reader sees a word known by sight flashed on a screen for half of a second, he or she cannot prevent his or her brain from recognizing the word, no matter what font, what case, or what color it is written in.

A high frequency word is one that occurs very often in written language. The 10 most common words in written text are *the, of, and, a, to, in, is, you, that,* and *it*. The 100 most common words in English (Moats & Tolman, 2018, p. 211) include all the function words that provide grammatical glue for sentences: pronouns, conjunctions, articles, prepositions, auxiliary verbs, number words, and some of the most commonly used nouns such as *day, people,* and *water*.

An *irregular word* is one that does not conform to the regular spelling patterns of English. Here, however, is a slippery conceptual slope. What do we mean by *irregular*? Is the word *has* irregular because the s represents /z/, not /s/? Is the word *most* irregular because the vowel is long, not short? Is the word *put* irregular because the vowel is /oo/ as in *look*, not /ŭ/ as in *but*? Is the word *have* irregular because it is a VCe pattern in spelling, but a short vowel in the spoken word?

A very common belief in classroom reading instruction is that all high frequency words should be taught by rote visual memory or "by sight" techniques, regardless of the predictability of their spellings. For example, many reading programs and teaching manuals advise teachers to put the high frequency words on flash cards and drill students until they can recognize the words on those cards. Most of the high frequency words, however, are regularly spelled or conform to common spelling patterns that can be taught in a sequential phonics and decoding program.

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Further, as we sort out these confusions, it is important to remember that all words needed for proficient reading must be known by sight, for automatic recognition, whether regularly spelled or not. Automaticity in word recognition is the mark of consolidated reading skill (Ehri, 1998, 2014). We can address the value of a special "visual" approach for teaching that "sight" vocabulary by considering the nature of the spelling system in English, and whether words can be reliably classified as regular or irregular.

Some Facts about English Orthography

Phoneme-grapheme correspondences. Written alphabetic symbols were invented over millennia to represent speech. Speech is the starting point for understanding orthography. English has 44 speech sounds, including schwa, for which there are about 80-120 teachable spellings (Moats, 2020). A teachable spelling, or grapheme, is a letter or letter combination that represents a phoneme. A grapheme may be one, two (ea, oi), three (igh, eau, dge), or four letters (ough, eigh, aigh). The long historical evolution of English spelling, combined with changes of pronunciation, resulted in several ways to represent many phonemes (Venezky, 1999). This is especially true of the 18 vowel phonemes (see Table 1).

Position-based spellings. The option for spelling any given speech sound is often constrained by the position of the phoneme in a word or syllable. For example, the *ai* spelling for long *a* is never used at the end of a syllable, whereas the *ay* option is usually found in syllable-final or word-final position (*sail, maid, say, maybe*). This pattern generally holds for *oi* and *oy* (*boil, boy*) and *au* and *aw* (*laud, law*).

Orthographic patterns. Spelling patterns in English include many redundant patterns, conventions for letter sequences, and constraints on the placement of adjacent graphemes. No English word ends in the letters *v* or *j*—a convention established by type-setters centuries ago to avoid visual confusion with the letters *u* and *i*. Words such as *love*, *have*, and *give* follow these constraints. Certain letters such as *i*, *h*, *x*, and *y* are never doubled. The letter combinations *ng*, *ck*, *ll*, *ff*, *ss*, and *dge* occur right after single vowel letters that usually represent short vowels; we can explain to children that short vowels seek extra consonant guards at the ends of syllables.

Most children start to notice and internalize these patterns (known as graphotactic characteristics) of orthography as soon as they gain experience with print (Bourassa & Treiman, 2014; Treiman, 2017). According to Seidenberg (2017), one characteristic of students who fail to automatize word recognition is their inattention to and poor memory for print patterns. This is one reason why effective instruction for students with dyslexia provides abundant practice with each major correspondence pattern and its use in real words.

Morphology and etymology. Morphemes are the smallest units of meaning. Words may be composed of one or many morphemes. A single morpheme may be one syllable (*bat*), or more than one (*tiger, banana*). Some morphemes are single phonemes, not pronounceable syllables, such as plural s, /s/ (*cats*) or /z/ (*dogs*), or two forms of the past tense –ed, /t/ (*wished*) or /d/ (*hummed*).

Written forms of words often reveal their underlying morphological structures. We spell by sound-symbol correspondences and meaning (Carlisle & Goodwin, 2014). For example, *stepparent* has *pp* because it is a compound word. *Attract* has *tt* because it has a Latin prefix *at* (a variation of *ad*, "to" or "toward") and a Latin root *tract*. *Mnemonic* begins with *mne* because that was the base of the Greek word for memory. All of these linguistic features, beyond the basic alphabetic code, are

TABLE 1. Inventory of vowel graphemes most often used to spell English vowels

Vowel Phoneme	Examples of Words	Most Common Vowel Graphemes in Order of Frequency of Use
ē (long e)	happy, me, see, meat	y, e, ee, ea
ĭ (short i)	itch, gran*i*te, gym	i, i_e, y
ā (long a)	*a*corn, date, pay, pail	a, a_e, ay, ai
ĕ (short e)	echo, dead	e, ea
ă (short a)	*a*pple	a
ī (long i)	ride, idol, cry, night	i_e, i, y, ight
ŏ (short o)	*o*ctopus	o, a
ŭ (short u)	up, c*o*ver	u, o
aw	lost, call, saw, *au*dio	o, al, aw, au
ō (long o)	*o*pen, toe, boat, throw	o, oe, oa, ow
oo	put, book, could	u, oo, ou
ū (unglided long u)	duty, rude, noose, chew, blue	u, u_e, oo, ew, ue
yū (glided long u)	*u*nicorn, cute, few	u, u_e, ew
oi	boil, boy	oi, oy
ou	ouch, cow	ou, ow
er	her, fur, sir, cell*ar*, doct*or*	er, ur, ir, ar, or
ar	star, are, heart	ar, a_e, ear
or	sport, chore	or, ore
schwa (/ə/)	circ*u*s, *a*bout, wag*o*n, *e*ffect, c*o*mmit	u, a, o, e, i (any vowel spelling)

Note. Chart based on data from L. Moats and C. Tolman, *Language Essentials for Teachers of Reading and Spelling (LETRS), 3rd Edition,* Unit 3, p. 177; adapted from B. Murray (n.d.), A catalog of spellings. Retrieved from www.auburn.edu/~murraba/spcat.html.

relevant for explaining why words are spelled the way they are.

Instruction in morphology is more meaningful if it is linked to word origin or etymology. Modern English is an amalgam of Anglo-Saxon, Latin, and Greek, and to a lesser extent includes spellings from French, German, Italian, and Spanish (see Henry, 2010). Each of these languages contributed spelling conventions to English that within the language of origin were predictable. For example, *ch* is used to spell /ch/ in Anglo-Saxon words such as *church;* is used to spell /k/ in Greek-derived words such as *school* and *character;* and represents /sh/ in French-derived words such as *chalet* and *brochure*.

Taking into account all of the layers of language represented in English orthography substantially reduces the number of words that are truly irregular or that follow no pattern.

Many high frequency words, although not fully transparent in their phonic correspondences, can be explained by reference to their morphological structure and etymology. For example, consider the parallel patterns in the Anglo-Saxon verbs *do, does, done* and *go, goes, gone*, or the parallels between *pay, paid* and *say, said*.

Principles of Instruction for "Sight" Words

Taking into account all of the layers of language represented in English orthography substantially reduces the number of words that are truly irregular or that follow no pattern. A safe assumption, promoted by Diana King in her book, *English Isn't Crazy* (2000), is that we can make sense of most words by examining them from several angles: phoneme-grapheme relationships, meaning or morphology, orthographic constraints, and language of origin. In other words, most high frequency words do not have to be learned "by sight" or through rote visual memory techniques. Most can be explained and taught through Structured Literacy teaching principles.

Highlight regular spelling patterns. High frequency words that follow regular patterns should be grouped and taught as such. For example, *me, be, she*, and *no, go, so* are straightforward open syllables.

Create a spelling pronunciation. Facilitate mental mapping of speech to print by pronouncing opaque words according to how they look. Model how they would be pronounced if they had standard correspondences. For example, the teacher might say, "*Was* looks like /w/ /ă/ /s/ … but we don't say /w/ /ă/ /s/, we say /w/ /ŭ/ /z/." Or, "*Many* looks like /m/ /ă/ /n/ /ē/, but we don't say that, we say /m/ /ĕ/ /n/ /ē/. A dictionary such as the *Oxford English Dictionary* might also document how a word's pronunciation has changed over time and become more distant from its original spelling.

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Group words with similar spellings when possible. The words *would, could*, and *should* are a pattern; so are the words *here, there, where* and *why, by, my, try*. *Any* and *many* are oddities that can be taught together.

Associate spelling with meaning when possible. *Here, there*, and *where* all have to do with place. *Their, heir* have to do with possession. *One, only, alone* have to do with oneness. *Our* and *your* are possessive pronouns.

Limit the number of high frequency, irregular words learned at once. Frequent, distributed practice of a manageable number of "tricky" words, about three to five per week, is more likely to stick than concentrated practice with a longer list.

Review and practice for a long time. After words have been studied and practiced, integrate them into applied reading and writing activities, including sentence dictations and one-minute fluency drills.

Summary Advice

The recent advisory on foundational reading skills published by the Institute of Education Sciences (Foorman et al., 2016) encourages the teaching of irregular words using whole word methods, including tracing and saying the letters until the word can be memorized, or reciting words from flash cards. Current theories of word learning processes, however, do not support the idea that so-called visual learning of orthography is independent of phonology or sound-symbol mapping.

Although repeated exposure to less transparent words may be necessary because they are harder to remember, initial presentation and practice routines can emphasize the reasons why the words are spelled the way they are and develop meaningful associations around the word. Those associations may be found first in the parts of words that are regularly spelled, or spelled as expected, and student attention can be drawn to the predictable parts of the word. In addition, conceptual handles for remembering words can be found by examining patterns in English orthography, understanding relationships between spelling, meaning, and word origin, or examining changes in pronunciation of words over time.

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A basic principle of psychology is that we tend to remember better something that makes sense to us. We can model and establish the expectation that most words in English make sense, and show students the many ways that this is so. Learning "by sight" is for the most part unnecessary and ineffective, and should be replaced as much as possible by conscious learning about language at every opportunity.

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