



# Letter Names Can Cause Confusion

## and Other Things to Know About Letter-Sound Relationships

Meghan K. Block and Nell K. Duke

*A teacher asks kindergartners to write about what each of them did over the weekend. One child writes the letters HRH on her paper. When the teacher asks her to share what she has written, the child says “church.” Why? Because the pronunciation of the letter name for h ends with the ch sound.*

—Donna Scanlon, Professor

**L**ETTER NAMES IN ENGLISH CAN CAUSE CONFUSION for young children. Knowing this and other things about English orthography (the standardized alphabetic spelling system of the English language) can help teachers better support young children’s literacy development (e.g., McCutchen et al. 2009). However, teachers need to know not only about letter names and letter-sound relationships in English words but also about applying this knowledge in their interactions with young children. In this article, we present 10 essential understandings about English orthography and

examples of how this knowledge can help teachers appropriately support preschool and primary grade children’s literacy development.

### 1. Letter names can be confusing.

*H* is one of three letters whose names, when pronounced, do not contain a sound that the letter represents. The other two letters are *w* and *y*. Children sometimes write a *w* for /d/ (/d/ means the d sound: slashes around a letter [or letters] denote its sound or pronunciation) because the pronunciation of the letter name for *w* (double-u) starts with /d/. And you’ll sometimes see children write a *y* for /w/, as in YAT for *wait*.

The pronunciation of most letter names includes at least one sound the letter commonly represents, although the position of the letter’s sound in the letter’s name varies. For some letters, the sound comes first and is followed by a vowel sound, as in *b, c, d, g, j, k, p, q, t, v, z*. In other letters, the letter’s sound comes second, preceded by a vowel

sound, as in *f, l, m, n, r, s, x*. Moreover, the vowel sound is not consistent. Sometimes it is /ee/, as in the letter names for *b, c, d, g, p, t, v, z*; sometimes it is /ě/, as in the letter names for *f, l, m, n, s, x*; sometimes it is /ay/, as in *j* and *k*; in *q* it is a long *u*; and in *r* it is an r-controlled *a* (more about r-control later).

We can see why children learning letter–sound associations and trying to apply that knowledge in their reading and writing are sometimes mystified. Some researchers recommend that we not teach letter names at all (e.g., McGuinness 2004). However, other research indicates that instruction in both letter names and letter sounds is best for children (Piasta, Purpura, & Wagner 2010).

### What you can do

As a teacher of young children, be sure to devote at least as much attention to helping children learn the sound or sounds associated with each letter as you do the letter name. When interacting with children, look out for the influence of letter names and address this explicitly. For example, if a kindergartner writes *YD* for *wide*, you can say, “I understand why you put the letter *y* there. You hear /w/ at the beginning of the name for *y*. But the letter *y* actually makes a /y/ sound. That’s confusing, isn’t it! Do you know what letter makes the /w/ sound?” (If more support is needed, provide a name or other key word children have learned for /w/, such as *Waheed*, a classmate’s name.)

## 2. English is more systematic than we may realize.

All too often, the English language is viewed as being highly complicated and irregular—with many exceptions to every rule. George Bernard Shaw suggested that English is so irregular and chaotic that the word *ghoti* might conceivably be pronounced *fish* (Venezky 1999). However, Venezky shows that Shaw’s claim is misleading. The letters *gh* can represent /f/ only when they come at the end of a word, such as in *enough*. Shaw suggested that *o* can represent the short *i* sound; but according to Venezky, Shaw was referring to the word *women*, which is the only word in the English language in which *o* represents short *i*. Finally, *ti* can represent /sh/ only when followed by other letters (as in *action*), never at the end of a word. Venezky’s rebuttal of Shaw’s argument illustrates the systematicity of written English.

Of course, systematicity does not necessarily mean simplicity. English orthography is indisputably complex, and it is important not to make simple, unwarranted generaliza-

tions. Many of the phonics generalizations or phonics rules that elementary grade students learn are too simplistic, having far too many exceptions to be valid (Clymer 1963). For example, regarding the rule stating that “when two vowels go walking, the first one does the talking,” Clymer found that only 45 percent of English words having two vowels together follow it. Johnston (2001) revisited this analysis with a different database. She also found that this rule often did not apply, nor did any broad phonics generalization she studied.

### What you can do

Rather than teaching children rules, expose them to lists of words that all follow a particular pattern. For example, rather than teaching the aforementioned rule for vowels, present children with a list of words such as *look, book, took, cook*, and help children focus on the sound–letter pattern. Johnston (2001) found that many specific (rather than broad) generalizations were true much of the time (e.g., in her database *oi* represents the sound in *coin* 100 percent of the time). In addition, to counter your colleagues who question the value of phonics instruction, share the *ghoti* example to demonstrate that English is more systematic than we realize.

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## 3. English orthography is complex for good reasons.

Written English has a long, rich history. As a result, pronunciation of some words has evolved even while their spelling has not. For example, originally the word *gnat* was pronounced /gnat/, but over time, the *g* has become silent. We now pronounce it /nat/; yet, we still spell it with the *g* at the beginning. In addition to evolved pronunciations, many words, such as *llama* or *rhyme*, have been borrowed from other languages. English is also a language in which morphology (the study of the smallest unit of meaning in words), as well as phonology (the study of speech sounds), drives orthography (Venezky 1967). (For definitions of these words and other related vocabulary, turn to “Glossary of Terms” at the end of the article.) In a purely phonological orthographic system we would spell words exactly as they sound. For example, *bugs* might be spelled *bugz*, and *insects*,

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*insex*. But in a partially morphological orthographic system such as English, we spell these words *bugs* and *insects* to signify with the -s that both are plural.

Although admittedly posing challenges for readers and writers in early stages of literacy development, the fact that English orthography conveys morphological relationships can be a big help to readers and writers in later stages of literacy development, when they begin encountering a lot of words in reading that aren't in their everyday oral vocabulary. It allows us to see semantic, or meaning-based, relationships between words. For example, even though *magic* and *magician* have very different pronunciations (/majic/ and /majishun/), we can see by their spelling that they are related. The morphological nature of English orthography also allows us to figure out the meanings of words we have never seen or heard (e.g., *kleptophobia*—the fear of stealing or being stolen from). Indeed, a growing body of research suggests that stronger morphological awareness supports literacy development (Carlisle 2010). Recognizing the morphological nature of English orthography offers readers an advantage.

### What you can do

Consider teaching some beginning morphology to children in kindergarten or first grade (depending on their readiness for this). For example, you might help them understand that we use -s to make a word mean *more than one* even if we say it with /z/. Help them understand that we use -ed to make a word indicate that something happened in the past, whether we say it with a /d/ or with a /t/, as in *walked*. You can use the preceding examples to help parents, colleagues, and others better understand that the language system is based on both phonology and morphology.

## 4. Some letters represent different sounds in different words.

**Ms. Wilson is introducing the letter c to her kindergartners. She explains that c stands for at least two sounds: /k/ as in cat and /s/ as in cereal.**

Like c, there are a number of letters that commonly represent either of two sounds. Another is g. The two sounds are referred to as *hard* and *soft*. The hard sound of c is /k/, as in *cat* or *cookie*, and of g is /g/, as in *goat* or *grandma*. The soft sound of c is /s/, as in *cereal* or *center*, and of g is /j/, as in *gym* or *ginger*.

Hard and soft sounds provide another opportunity to underscore that English orthography is more systematic than we may realize. It is not, in fact, random whether the c or g is pronounced with its hard or soft sound. Try pronouncing these two words: *ceilent* and *gantin*. These are made-up words, so you haven't seen or read them before. Yet most likely you pronounced the c as /s/ (soft) and the g as /g/ (hard). The reason is that c and g typically represent soft sounds when followed by e, i, or y, and hard sounds



This child has selected s to represent the /s/ sound in *nice*.

when followed by a, o, or u. We would not teach these generalizations to young children, but they can remind us of the systematicity of English spelling.

There are other letters that represent two or more different sounds—the letter s is one, as in *sun* and *was*; x is another, as in *xylophone* and *fox* (the x in *fox* represents two sounds, or phonemes, pronounced together: /k/ /s/). Each vowel represents at least three different sounds. One of these, the schwa

sound, will be discussed in point number 10. The other two are referred to as *long vowels* and *short vowels*. Typically, a short vowel is the sound the vowel represents in a consonant-vowel-consonant (CVC) word. For example, short a is the middle sound in *bag* (for the other short vowels, it's /e/ as in *bed*, /i/ as in *bit*, /o/ as in *hot*, /u/ as in *cut*). Long vowels “say their names”—for example, long i is the sound the vowel represents in *bike*. The terms *long vowel* and *short vowel* are misnomers in that short vowels are not pronounced noticeably faster than long vowels.

### What you can do

Be up front with children, as Ms. Wilson was, about cases in which a letter represents different sounds in different words. When a child is reading aloud and is unsure of which sound to use, have the child try both sounds and ultimately decide on one based on the word that sounds right and makes sense (Scanlon, Anderson, & Sweeney 2010). With vowels, this approach is sometimes referred to as *vowel flexing*.

## 5. Sometimes sounds can be represented in more than one way.

**Jelani, a first-grader, brings his writing to a conference with his teacher, Mr. Acker. He has written uv for the word of. Mr. Acker points to the word and tells Jelani that the letters he wrote do make the sounds we hear in of, but we spell this word “of.”**

Jelani actually has written appropriate letters for the sounds he heard. Mr. Acker does the right thing to validate that. We have seen teachers who will not recognize this and suggest that the child listen harder or try again. Listening harder would not help him spell *of* correctly because



the two phonemes, or small sound units, in the word can reasonably be represented by the letters *u* and *v*. As with many words, the only way for Jelani to know how to spell *of* correctly is through experience with the correct spelling of the word.

### What you can do

Don't insist on correct spelling early on; research strongly suggests that engaging children in listening for sounds in words and inventing/estimating/approximating their spelling supports their literacy development (e.g., Ouellette & Sénéchal 2008). Over time, following the guidelines of standards documents with specific expectations for spelling at each grade level, encourage children to learn to spell a growing number of words correctly—for example, the words listed on a classroom word wall or in their personal dictionaries or word journals.

## 6. Sometimes pairs or groups of letters represent a single sound.

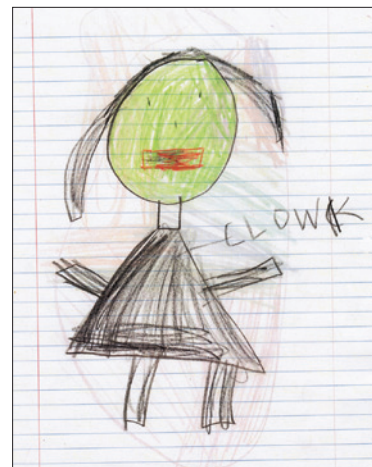
**In Mr. Acker's classroom, the first-graders engage in a guided reading lesson. They are reading a text about fish. Some students try to figure out the word by pronouncing /f/ /i/ /s/ /h/. Mr. Acker stops and explains to them that when *s* and *h* are together, they don't make /s/ and /h/; together they make the /sh/ sound.**

This teacher recognizes the difference between digraphs and blends. A digraph is two letters that stand for a single phoneme. Unlike a blend, a digraph is not a combination of

the sounds that the two letters represent. *Sh* is a digraph representing the single phoneme /sh/—it is not formed by pronouncing /s/ and /h/ consecutively. Three other important consonant digraphs are *ch* as in *chin*, *th* as in *thin* or *that*, and *ng* as in *sing*. No single letter can represent the sound represented by any of these digraphs. There are many other consonant digraphs that represent a sound already represented by another letter: *ph*, *wh*, *wr*, *kn*, *gn*, *ck*, *ff*, *gh*, *ll*, *mb*, *ss* (Dow & Baer 2012).

There are also vowel digraphs. One is *oa*, as in *boat*. Other combinations of vowel digraphs (e.g., Dow & Baer 2012), which others call simply *vowel pairs* (e.g., Fox 2009) or *vowel teams* (NGA & CCSSO 2010), include *ea* (as in *head* or as in *bead*), *ai*, *ay*, *ee*, *oe*, *au*, *aw*, *ew*, *oo* (as in *spook* or as in *book*), and *ow* (as in *slow*—please see point number 7 for a discussion of *ow* as in *cow*).

In some cases, we even have trigraphs in English—three letters representing a single sound. Examples of trigraphs



Here a child has used *ow* (as in *slow*) to represent the /ō/ sound in *cloak*.

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are *sch*, as in the word *schwa*; *dge*, as in *judge*; *igh*, as in *high*; and *tch*, as in *watch*. And there are at least two quadgraphs we can think of. We'll put them at the end of the article to give you some time to come up with them.

Digraphs are frequently confused with blends. Blends are pairs or groups of letters in which each letter is sounded, one right after the other. Unlike a digraph, the sound of each individual letter in the blend is maintained. For example, the *gr* in the word *grape* is a blend. When you say the word, you pronounce both /g/ and /r/ but in immediate succession such that they sound blended together. (See "Keeping in Mind a Word's Sound Structure.")

### What you can do

We recommend teaching digraphs explicitly (but without using the term *digraph*). Some teachers take a digital photo of children showing thumbs up for *th*, making the quiet sign for *sh*, and pointing to their cheeks for *ch*, and they post those along with the digraphs as a reminder of the sound associated with each of these digraphs.

## 7. Sometimes pairs of letters represent a special kind of sound.

Another kind of letter pair to be aware of are diphthongs. We sometimes say that diphthongs make a sound-and-a-half or that they glide—the two letters represent a single phoneme, but saying the phoneme involves substantial movement of the mouth. Try putting your fingers around your mouth as you say *boy* and *cow*. You will feel substantial movement in the second part of the words. The *oi/oy*, *ow/ou* (as in *mouse*), and *au/aw* (*caught*, *raw*) are diphthongs. You may also notice that when writing, young children who are not yet aware of the spellings for these sounds may

use any number of vowels to represent them. Sometimes they use a long string of vowels such as *caoy* for *cow*, probably because they sense considerable movement in their mouths.



It is likely this child has not yet learned to represent the *oi* diphthong in *coin*.

### What you can do

As with digraphs, we recommend providing explicit instruction in diphthongs (although that teaching needn't—and shouldn't—include the term *diphthong*). Again key words or anchor words can be very helpful for children. The high frequency word *boy*, for example, might serve as a key word to remind children of the *oy* letter-sound relationship (Ehri, Satlow, & Gaskins 2009).

## Keeping in Mind a Word's Sound Structure

iterate adults are so influenced by orthography that they sometimes lose touch with the actual sound, or phoneme, structure of words. Count the phonemes in these words and see how close you come: *sheep*, *bright*, *six*, *each*, *choose* (3, 4, 4, 2, 3, respectively). It is important for teachers of young children to be aware of the phoneme structure in words as they respond to children's writing. A child who represents the word *bright* as *BIT* may at first glance seem way off, but in fact she has represented three of the four phonemes in the word, and the one she has missed is the second sound in a blend—and they are notoriously hard for young children to hear. (Also hard to hear are *n* and *m* before consonants, so you'll see spelling such as *dot* for *don't* and *cap* for *camp*.)

## 8. The letter or letters that immediately follow or precede a letter matter.

Mrs. Chan, a first-grade teacher, is eliciting words that begin with the *ā* sound. James offers *art*. Mrs. Chan explains that the word *art* does begin with the letter *a*, but in that word, it doesn't represent the /ā/ or /ā/. Because it's before the letter *r*, it makes a different sound (which she then pronounces with the children).

In this context, *a* is known as an r-controlled vowel—the *a* sound is lost to the *r* sound. R-control affects not only *a*, but any vowel that precedes the *r*. We pronounce neither the long nor the short sound of *e* in *er*, *i* in *ir*, *o* in *or*, or *u* in *ur*. Rather, each of these letter pairs has a special pronunciation (or pronunciations) that is not the sum of their individual sounds. In spelling, determining which r-controlled vowel represents a sound in a word can be quite difficult (Venezky 1999). For example, the words *her* and *girl* contain the same *r* sound but are represented by different r-controlled vowels.

R-control is just one example of a larger phenomenon in English orthography—the fact that the letters around a letter matters. We also see this with vowels preceding *l* versus another letter (e.g., *ball* versus *bat*) and with some letters that are unsounded when in certain contexts (e.g., *b* before *t*, as in *doubt*; *b* after *m*, as in *comb*).

### What you can do

The fact that the sound made by the letter(s) that follow or precede another letter matters is one of the reasons we recommend teaching phonograms beginning in kindergarten. Phonograms are common groups of letters that represent the same sounds, such as *-ight* in *bright*, *light*, *sight*, and so

on. Teaching children phonograms, such as *-er*, *-all*, and *-tch*, helps avoid the problem of children trying to read these letter groups using the individual sounds associated with these letters. It also explains why word chunking is widely suggested for multisyllabic words. To explain chunking, Gaskins (Center for the Study of Reading 1991) offers the example of the word *bandiferous*. Although not a real word, we read this word quickly and easily. We do not do so by sounding out each individual letter—/b/ /a/ /n/ /d/ /i/ /f/ /e/ /r/ /o/ /u/ /s/. Instead, we read the word in chunks (e.g., /band/ /if/ /er/ /ous/), recognizing the chunks from words we already know. The longer and more orthographically complex words are, the more important chunking is. For example, to support a second grader who is struggling to read the word *rereading*, a teacher would show the child the chunks /re/ /read/ /ing/.

### 9. A letter's position in a word matters.

**Mrs. Chan listens as Francine, a first-grader, tries to read the word *funny*. When Francine gets to the *y*, she pronounces the sound /y/, as in *yellow*.**

The teacher who knows about English orthography recognizes this as a sign that the child has limited understanding of the letter-sound relationships of *y*. Although *y* does represent the sound /y/ at the beginning of a word, elsewhere in a word it typically represents the long *i* or long *e* sound. Indeed, this is why we say *y* is *sometimes* a vowel—when *y* comes at the beginning of a word, it is often a consonant,



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whereas if it is in the middle or end of a syllable or word, it typically acts as a vowel. *Y* illustrates that a letter's position in a word and syllable matters.

### What you can do

Once children have some basic letter-by-letter decoding skills, help them use knowledge of known words to solve unknown words. Sometimes called “decoding by analogy,” this strategy helps children take into account the position of letters within a word and supports word-reading development (White 2005). For example, children might use knowledge of *happy* to decode the end of *funny* or their knowledge of *celebrate* to decode *celery* (see point number 4).

## 10. Any vowel can be a schwa.

**Tryice, a second-grader, asks his teacher for help spelling the word *envelope*. Mr. Allen begins pronouncing the word as *en* (pronouncing the *e* as a short *e*), *ve* (pronouncing a short *u*), *lope* (pronouncing a long *o*).**

This teacher avoided a pitfall we have repeatedly observed both teachers and parents caught in—inaccurately pronouncing a word to help children with its spelling. Mr. Allen correctly pronounces the second *e* sound as short *u*, which is how it is pronounced naturally in this word, rather than pronouncing it with a short *e* sound in a misguided attempt to assist the child with the spelling. In *envelope*, the second *e* does not represent the short (or long) *e* sound. Rather, it represents a sound known as *schwa*—the *uh* or short *u* sound common in many English words.

A schwa is the sound a vowel often represents in the unstressed or unaccented syllable of a multisyllabic word, such as the *o* in *computer*, the *i* in *pencil* and the first *e* in *select* (to remember how accented syllables work, we enjoy the phrase that misplaces the accented syllables as follows: put your emphasis on the right syllable). The schwa is “the most difficult sound to predict in the entire orthographic system” (Venezky 1999, 62). Because the schwa sound can

### Identifying Unstressed Syllables and the Schwa Sound

Try identifying the unstressed syllable with schwa in these words: *aware*, *orthography*, *pedagogy*, *syllable*, *consonant* (first, third, second, second, second, respectively). Being aware of which syllables in words are unstressed and contain schwa can help teachers identify parts of words that may be especially difficult for children to spell, and to understand why children may be struggling with spelling a particular word. For example, if second-graders are writing about animals, the teacher might anticipate that the children will struggle with representing the two schwa sounds in *animal* (represented by the *i* and the second *a*) and would go ahead and teach children how to spell this word.

be represented by any vowel, it is difficult for children to know which vowel represents the sound until they have had experiences with the correct spelling of the word. We help children by showing them the correct spelling of the word rather than altering the pronunciation of the word to try to reveal that spelling. (See “Identifying Unstressed Syllables and the Schwa Sound.”)

### What you can do

Directing children to similar words they already know can help them with their spelling, as it does with their word reading. For example, a child could be encouraged to use her knowledge of the spelling of *invite* to help determine the vowel that represents the schwa sound in the word *invitation*. We also suggest cautioning parents and colleagues not to mispronounce a word to help children with its spelling. For example, when helping a child spell the word *amaze*, refrain from pronouncing the initial *a* as /ā/. Rather, explain that knowing which vowel represents the schwa sound requires familiarity with the correct spelling of the word.

## Conclusion

In this article we have argued that there is some fundamental knowledge about English orthography that may aid early childhood educators in responding to young children's reading and writing in informed and effective ways. Specifically, we identified 10 understandings of English orthography that we believe are important for teachers.

With this knowledge, teachers can support children in developing proficiency in reading and writing the complex and rich language we call English.

## References

- Carlisle, J.F. 2010. “Effects of Instruction in Morphological Awareness on Literacy Achievement: An Integrative Review.” *Reading Research Quarterly* 45 (4): 464–87.
- Center for the Study of Reading (Producer). 1991. *Teaching Word Identification*. DVD, 30 min. In *Teaching Reading: Strategies From Successful Classrooms*. Set of 6 videos, a preview DVD, 6 viewer's guides, an instructor's guide. (Available from Center for the Study of Reading, University of Illinois at Urbana-Champaign, Children's Research Center, Room 158, 51 Gerty Drive, Champaign, IL 61820.)
- Clymer, T. 1963. “The Utility of Phonic Generalizations in the Primary Grades.” *The Reading Teacher* 16 (4): 252–58.
- Dow, R.S., & G.T. Baer. 2012. *Self-Paced Phonics: Text for Educators*. 5th ed. Upper Saddle River, NJ: Pearson Education.
- Ehri, L.C., E. Satlow, & I. Gaskins. 2009. “Grapho-Phonemic Enrichment Strengthens Keyword Analogy Instruction for Struggling Young Readers.” *Reading and Writing Quarterly: Overcoming Learning Difficulties* 25 (2–3): 162–91.
- Fox, B.J. 2009. *Phonics and Structural Analysis for the Teacher of Reading: Programmed for Self-Instruction*. 10th ed. Boston: Allyn & Bacon.
- Johnston, F.P. 2001. “The Utility of Phonic Generalizations: Let's Take Another Look at Clymer's Conclusions.” *The Reading Teacher* 55 (2): 132–43.

## Glossary of Terms

- **blend:** two or three consecutive consonants, each sounded, within a syllable  
*Examples:* *cl* in the word *class* or *spr* in the word *spring*
- **chunking:** breaking a word into smaller, more manageable parts in order to figure out how to read or write the word  
*Example:* Reading *rain* and then *bow* to figure out *rainbow*
- **digraph:** two consecutive letters that produce a single phoneme (sound)  
*Examples:* *ch* in *child*, *th* in *this*, *sh* in *shell*
- **diphthong:** a vowel phoneme with a glide from one sound to the other  
*Examples:* the sound represented by *oi* or *oy* as in *noise* or *boy*
- **orthography:** the spelling system of a language
- **morphology:** the study of meaningful parts of words  
*Example:* in *reusable*, the three meaningful parts are *re*, *us(e)*, and *able*
- **phonogram:** a letter or combination of letters that represent a sound or series of sounds in a syllable  
*Examples:* *-er*, *kn-*, *-all*
- **phonology:** the study of sounds in language
- **r-controlled vowel:** vowels that make a special sound when followed by the letter *r*  
*Examples:* *a* in *art*, *u* in *fur*
- **semantic:** relating to meaning in language
- **vowel flexing:** trying the different sounds of a vowel to determine which one results in the correct word  
*Example:* A child who is trying to figure out the word *leak* may try both the short *e* sound (as in *head*) and the long *e* sound (as in *leap*)

McCutchen, D., L. Green, R.D. Abbott, & E.A. Sanders. 2009. "Further Evidence for Teacher Knowledge: Supporting Struggling Readers in Grades Three Through Five." *Reading and Writing* 22 (4): 401–23.

McGuinness, D. 2004. *Early Reading Instruction: What Science Really Tells Us About How to Teach Reading*. Cambridge, MA: MIT Press.

NGA (National Governors Association) Center for Best Practices & CCSSO (Council of Chief State School Officers). 2010. *Common Core State Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects*. Washington, DC: NGA Center for Best Practices; Washington, DC: CCSSO.

Ouellette, G., & M. Sénéchal. 2008. "Pathways to Literacy: A Study of Invented Spelling and Its Role in Learning to Read." *Child Development* 79 (4): 899–913.

Piasta, S.B., D.J. Purpura, & R.K. Wagner. 2010. "Fostering Alphabet Knowledge Development: A Comparison of Two Instructional Approaches." *Reading and Writing* 23 (6): 607–26.

Scanlon, D.M., K.L. Anderson, & J.M. Sweeney. 2010. *Early Intervention for Reading Difficulties: The Interactive Strategies Approach*. Solving Problems in the Teaching of Literacy series. New York: Guilford.

Venezky, R.L. 1967. "English Orthography: Its Graphical Structure and Its Relation to Sound." *Reading Research Quarterly* 2 (3): 75–105.

Venezky, R.L. 1999. *The American Way of Spelling: The Structure and Origins of American English Orthography*. New York: Guilford.

White, T.G. 2005. "Effects of Systematic and Strategic Analogy-Based Phonics on Grade 2 Students' Word Reading and Reading Comprehension." *Reading Research Quarterly* 40 (2): 234–55.

**Quadgraphs** (from point number 6) include *-eigh*, as in *weigh*, and *-ough*, as in *though*.

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