Building Foundational and Vocabulary Knowledge in the Common Core, K-8: Developmentally-Grounded Instruction about Words

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ABSTRACT
How young children's and older students' knowledge of words develops – their structure, their meanings, how they work in context – is reflected in the Common Core English Language Arts expectations. Meeting these expectations for each learner requires that we teach in a developmentally-responsive manner. This includes our being familiar with the nature of the English spelling system, determining what each learner knows about the system, and then providing instruction that stretches but does not frustrate learning. There is a reciprocal relationship between reading and spelling words, and understanding how this relationship develops over time is the key to developmentally-responsive decoding and encoding instruction, as well as to developing every learner's vocabulary.

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When I taught first grade a good many years ago, I was pleased if my young charges understood "magic *e*" by the end of the year. That was, after all, the expectation in the 1st grade phonics scope and sequence back then – and the children did not have the benefit of a year of kindergarten in that rural school district. Fast forward to the English Language Arts Common Core (ELA/CCSS) expectations for what and when students learn about phonics/word recognition (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010): Not only is knowledge about final *e* expected but also other "vowel team conventions for representing long vowel sounds" (2010, p. 16). But that's not all; first-graders are now expected to "Decode two-syllable words following basic patterns by breaking the words into syllables" (p. 16). Are we expecting too much of first graders?

Probably not. But hold that answer for a moment. Later on in my teaching career, when I taught High School English, I knew I was expected to teach about Greek and Latin roots – but I did not have a scope and sequence, much less an effective lesson plan, and I floundered. Now the CCSS expectation is that by the end of 4th grade students will be able to "Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word" (p. 29). Are we expecting too much of fourth graders?

Probably not. In this article, I would like to present a brief overview of the role of word knowledge in the development of literacy and look at how the foundational and vocabulary expectations in the CCSS are developmentally-grounded and therefore realistic to expect – *if* our teaching is also developmentally-responsive.

Stages of Literacy Development and Word Study Focus

Developmentally-responsive instruction about words grounds instruction in Vygotsky's "Zone of Proximal Development" (Vygotsky, 1978), or more simply, what educators have for years referred to as students' "instructional level" (Gehsmann & Templeton, 2011/2012, 2013; Templeton & Gehsmann, 2014). My colleagues and I have defined "instructional level" as, in a nutshell, what students are "using but confusing" (Bear, Invernizzi, Templeton, & Johnston, 2016). We are able to determine this level primarily by looking closely at their writing as well as by administering a well-constructed spelling assessment (McKenna & Picard, 2006; Perfetti, 1993, 2007; Templeton, 1991; Tyler, 1997). In fact, Tyler observed that ". . . when teachers examine the spelling problems of their learners, they are observing the visible signs of a *reading process* which has been only partially absorbed" (p. 194, emphasis added). Specifically, students' spelling errors reveal the types of information they are attending to when they *read* words. Let's consider how this may look in learners from kindergarten through the intermediate grades (Bear, Invernizzi, Templeton, & Johnston, 2016; Templeton & Gehsmann, 2013, 2014); Table 1 provides reading level ranges for each developmental stage we will discuss. The following student examples represent the range of literacy development, from Emergent through Skilled/Proficient (Templeton & Gehsmann, 2014):

> Lee, a kindergartener, writes PPLSMETSK ("The people saw him eating strawberry cake"). Lee's writing reveals that she is a *Late Emergent reader/writer*. Not yet fully phonemically aware, she will benefit from continuing exploration of beginning and ending sounds and letters as well as repeated readings of texts, watching while the teacher points to words as they are read. Lee should be encouraged to write, and the Common Core Kindergarten expectations reflect this research-based practice: "Spell simple words phonetically, drawing on knowledge of sound-letter relationships" (p. 26). Applying developing knowledge of letter-sound relationships in authentic writing activities is powerful indeed.
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> First-grader Alicia writes I LIK SETG INDR MI FAVRT CHRE ("I like sitting under my favorite tree"). A *Beginning reader/writer*, her writing indicates she is fully phonemically aware, attending to both consonant and vowels sounds. She is ready to explore short vowel patterns but not long vowel patterns.
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> Second-grader Kirstin writes *Sharons frind brocke her arm yesterday by jumping off a swing. I cant whate till tomarrow.* This type of writing reveals that Kirstin is a *Transitional reader/writer*, and though she is spelling some "longer" words correctly, her word study will focus on spelling patterns within *single* syllable words, as revealed in errors such as *frind* for *friend*, *brocke* for *broke*, and *whate* for *wait*.

Michael, a fourth grader, spells long vowel words such as *float*, *train*, and *slight* correctly, and his errors usually occur in two-syllable words such as *shoping* for *shopping*, *surving* for *serving*, and *tightin* for *tighten*. These types of errors reveal that Michael is an *Intermediate reader/writer*. His spelling will continue to focus on words of more than one syllable, attending to syllable patterns and how base words combine with affixes (prefixes and suffixes) – the Common Core word recognition focus at third grade.

Seventh-grader Ashley spells words such as *village*, *confidence*, and *fortunate* correctly, but makes errors such as *iliterate* for *illiterate* and *exhilerate* for *exhilarate*. These are "higher level" types of errors, however, and characterize students who are becoming *Skilled/Proficient* readers and writers.

Table 1 - Stages of Literacy Development and Reading Levels

Grade Range	*Literacy Stage*	*Text Level*		
		Guided Reading[1]	*DRA*[2]	*Lexile Levels*
PreK-Early 1st	Early/Middle Emergent Middle/Late Emergent Late Emergent/Early Beginning	A B	1 2	NA
K – Early 1st	Early Beginning	C	3	NA
1st	Middle Beginning	D E	4-8	
1st – Early 2nd	Late Beginning	F G	10-12	

Late 1st – early 2nd	Early Transitional	H I	14-16	200-400
2nd	Middle Transitional	J K	18-20	300-600
2nd –mid 4th	Late Transitional	L M	24-28	
3rd	Early Intermediate	N P	30-38	500-800
4th	Middle Intermediate	Q	40-42	600-900
5th	Middle/Late Intermediate to Early Skilled/Proficient	T	50	
6th	Late Intermediate to Middle Skilled/Proficient	V	60	800-1050
7th – 8th	Early Skilled/Proficient to Middle Skilled/Proficient	W-Z	70-80	850-1150

Adapted from Templeton & Gehsmann (2014)
[1] Fountas & Pinnel (1996, 2001)
[2] Beaver & Carter (2006)

Word Study Instruction

Children's minds do not learn words, or about words, by taking mental "photos." They do not learn a printed word by "staring" at it until its image is imprinted on their brains, or by writing it ten times. Rather, mental images are constructed over time and they reflect children's understanding of "the structure of words *in general* – letters, sounds, spelling and meaning patterns… and *specific* words that [they] may know" (Templeton & Gehsmann, 2004, p. 40). This is why there is an emphasis on how your students *spell* words - you'll be able to determine the information they use not only to write words but also to identify words when they read. This is because reading words and spelling words are not separate processes – they rely on the same underlying knowledge of word structure.

Emergent Readers and Writers

At the kindergarten level, for emergent readers and writers, the Common Core acknowledges the important developmental scaffolding that supports phonemic awareness and which builds necessary prerequisites for this awareness. This includes rhyme, tapping syllables, and awareness of onset-rime. For children such as Lee, a very important developmental milestone will occur toward the end of this stage: The *concept of word in text*, which is the ability consistently to match the printed word unit in a memorized text with the spoken word unit – what Marie Clay years ago described as the voice-to-print match (1991). As Darrell Morris and his colleagues have pointed out, when children are able to voice-point "the word begins 'to stand still' for analysis, [and children] can attend to other letter-sound properties within the word unit (e.g., the ending consonant)" (Morris, Bloodgood, Lomax, & Perney, 2003, p. 321). Attaining a concept of word in text, in other words, helps children become fully phonemically aware. Importantly, they will also then be able to learn and remember a much larger number of sight words (Smith, 2012).

Beginning Readers and Writers

For beginning readers such as Allison, there is a reciprocal relationship between encoding and decoding: As she learns about short-vowel patterns in phonics, she is learning how to spell them as well. Over time, your *decoding* instruction will serve to point out "what's going on" in words (such as the role of silent *e*, for example). Continued experiences with a silent *e* pattern through additional words encountered in reading will develop awareness and understanding of that pattern. If we try, however, to get a learner to *spell* these new words correctly - believing such work will reinforce memory for the word(s) – we will inadvertently require the child to try to work at a *frustrational* level. As Beginners learn to read and remember more words with silent *e* and perhaps other long vowel patterns, you will begin to see silent letters appear in their spellings – MAEK or MEAK for *make;* BIEK or BIEK for *bike*. Such spellings reveal that children are now ready to learn such words and patterns in their spelling, and instruction may focus on them – they have moved into the next stage of development. As the Common Core notes, they will be ready to read words of more than one syllable although their spelling will continue to focus on one-syllable words.

Transitional Readers and Writers

For Transitional readers and writers in the latter half of first grade and on into second grade, comparing and contrasting vowel spelling patterns supports spelling but also supports

decoding of longer words of more than one syllable: Words such as *roadway*, *batted*, and *biking*. Kirstin will usually be uncertain about *spelling* many of these longer words – doubling a consonant or dropping a vowel at the juncture of syllables – but she will be able to decode them. Examining such within-word patterns will both facilitate correct spelling of words with these patterns *and* strengthen the connections in Kirstin's brain between sound and print – which in turn will help her decode the patterns within longer words when she reads. At this stage, and all successive stages, the ability to *read* most words accurately runs ahead of the ability to *spell* many words accurately. Remember your Educational Psychology 101? This is the difference between the processes of *recognition* and *production*: Readers will be able to *recognize* many words before they will be able to *produce* their forms correctly. The Common Core expectations reflect this developmental characteristic: in first and second grade, spelling instruction focuses on single-syllable words while word recognition/decoding moves on to two-syllable words. In third grade, spelling instruction does address two-syllable words, while word recognition includes attention to prefixes and suffixes.

At this stage, Kirstin may learn much about the role that *position* and *neighborhood* play in the spelling of sounds within single-syllable words:

- By comparing and contrasting words such as *bait* and *wait* with *stay* and *play*, learners realize that how sounds are spelled very often depends on their position within a word – the long *a* sound, for example, will usually be spelled *ay* at the end of a word but rarely in the middle; long *a* will never be spelled *ai* at the end of a word, only in the middle.
- By comparing and contrasting *edge* and *badge* with *huge* and *page*, learners may realize that the "neighborhood" of a sound often determines the spelling of that sound - soft *g* sound is spelled *dge* when a short vowel sound comes before it; it is spelled just *ge* when a long vowel sound comes before.

Resources for Motivating and Engaging Word Study, PreK-2nd Grade

Gehsmann, K., & Templeton, S. (2013). Foundational skills. In Morrow, L. M., Shanahan, T., & Wixson, K. K. (Eds.), *Teaching with the Common Core Standards for English Language Arts: PreK-2* (pp. 67-84). New York: Guilford Press.

Hayes, L., & Flanigan, K. (2014). *Developing word recognition*. New York: Guilford.

Johnston, F., Invernizzi, M., Bear, D. R., & Templeton, S. (2015). *Words their way for preK-K.* Boston: Pearson.

Templeton, S., & Gehsmann, K. (2014). *Teaching reading and writing: The developmental approach (preK-8)*. Boston: Pearson. (See in particular Chapters 6, 7, and 8)

Intermediate Readers and Writers

An instructional focus on *morphology* really takes off in fourth grade, and as we noted at the outset, the Common Core acknowledges this. The *generative* power of learning Greek and Latin word roots is apparent when students realize that knowledge of one root can *generate* an understanding of dozens of more words (Templeton, 2011/2012; Templeton et al., 2015). For

example, knowing that *–tract-* means "pull" supports learning of other words such as *traction*, *retract/retraction*, *detract/detraction*, *tractable*/*intractable*, and so on (and on!).

At this stage we can leverage the spelling system of English to generate vocabulary knowledge. Why? Because the system does a very good job of visually representing the *meaning* relationships among words. For example, you may first point out to students how familiar words that are related in *spelling* are usually related in *meaning* as well (Templeton, 1983, 2011):

compete
competition
competitive

Though the pronunciation of several sounds within the underlined parts of the words changes, the spelling does not. Students come to the realization that if such words were spelled the way they *sounded*, we would lose these visual, meaning relationships that they share. And this is where the leveraging comes in: Students who encounter the unfamiliar word *laborious* while reading may figure out its meaning if they think of *labor*, a word that they *do* know. Knowing the meaning of *labor* reveals the meaning of *laborious*.

Importantly, though students at this stage may learn about this spelling-meaning characteristic of spelling as a vocabulary strategy, they should not be expected to remember the correct spelling of so many of the words that reflect this characteristic. Remember the recognition-production phenomenon? This is how it works at the Intermediate stage. At grades four and five, Common Core expectations are to "spell grade-appropriate words correctly." How is "grade appropriateness" determined? Considerable effort has been invested in identifying the most appropriate words on which to focus attention – at the intermediate level as well as at earlier levels (Henderson & Templeton, 1986; Morris, 1995; Morris, Nelson, & Perney, 1986; Templeton, 2011). These are words that not only should be spelled correctly at this level but that will provide and reinforce the most frequent spelling patterns that students need to support decoding words in their reading – the rapid and automatic identification of most words and effective orthographic knowledge to decode unfamiliar words. Two resources that have provided these words by grade level and support developmentally-based spelling instruction are Templeton & Bear (2006) and Templeton (2012).

Significant attention is given at this level to syllable juncture patterns – examining what happens when syllables join, for this is where most spelling errors occur: Are letters dropped or changed? Are consonants doubled or not? For example, students will first examine what happens when inflectional endings are added to words: compare words such as *hopping, hiking*, *cleaning*. Students examine words that follow these spelling patterns (doubling, e-drop, no change) to derive a rule – and as at the previous stage, they realize that the spelling at syllable junctures depends on the "neighborhood." At this stage, the neighborhood includes the spelling pattern and vowel sound in the preceding syllable:

- Short vowel sound followed by a single consonant = doubling
- Long vowel sound = no doubling; vowel-consonant-*e* pattern involves dropping the *e*; vowel pair plus single consonant involves no change

Skilled/Proficient Readers and Writers

Skilled/proficient readers in the elementary and middle grades may be expected to apply their understanding of the spelling-meaning connection that was introduced at the previous stage. They should, for example, be able to spell correctly related words such as

compete/*competition*/*competitive* and *labor*/*laborious*. Building on this foundation, students should be able to meet the Common Core's continuing emphasis on Greek and Latin elements at the middle grades as these elements support determining the meaning of unknown words and the deeper understanding of new vocabulary words. Such understanding will also help explain Ashley's "higher level" errors such as *iliterate* and *exhilarate* (Templeton, 2016). Further exploration may now include, for example, examining why *illiterate* has two *l*'s, even though there is only one /l/ sound. This investigation will reveal a widespread phenomenon in English spelling and vocabulary: because *il-* is a prefix (meaning "not"), in English we need to keep the spelling of that prefix. For older students, this awareness may open up an in-depth exploration of words and their histories: Originally, when the prefix *in-* was combined with *literate* to mean "not literate," the combination *inliterate* was awkward to pronounce. So, over time, the /n/ was absorbed into the /l/ of *literate*, making the word easier to pronounce – and the spelling changed to represent this sound change. This phenomenon explains why we don't have the word *inmeasurable* in the language; rather, we have *immeasurable*. We don't have *inregular*, but *irregular*. Students will learn, in other words, why the prefix *in-* may be spelled different ways (*il*, *im*, *ir*) – it has to do with the words or roots to which *in-* is attached, making the resulting word easier to pronounce.

What about Ashley's misspelling, *exhilerate*? Because students at this level are exploring more deeply word roots and the relationships among words, spelling may illuminate a meaning relationship while ensuring that Ashley will never again misspell this word. We write the following word pair, underlining the letters the words share:

ex<u>hilar</u>ate
<u>hilar</u>ious

We ask Ashley – as well as other students – to check both words in an online dictionary; they discover the common Greek root in each, *hilaros*, which means "cheerful." Students have learned that, over time, roots and the words in which they occur often evolve in their meanings and take on additional connotations – both *exhilarate* and *hilarious* originally had to do with cheerfulness, but now have to do with being *extremely* cheerful!

Figure 2
Resources for Motivating and Engaging Word Study, Grade 3 and Above

Ayto, J. (2009). *Oxford school dictionary of word origins: The curious twists & turns of the cool and weird words we use*. Oxford: Oxford University Press.

Templeton, S. (2016). Learning and reading words closely and deeply: The archaeology of thought. In Sisk, D. A. (Ed.), *Accelerating and extending literacy for diverse learners: Using culturally responsive teaching*. Lanham, MD: Rowman & Littlefield.

Templeton, S., Bear, D. R., Invernizzi, M., Johnston, F., Flanigan, K., Townsend, D. R., Helman, L., & Hayes, L. (2015). *Vocabulary their way: Word study with middle and secondary students* (2nd ed.). Boston: Pearson.

Templeton, S., & Gehsmann, K. (2014). *Teaching reading and writing: The developmental approach (preK-8)*. Boston: Pearson. (See in particular Chapters 9 and 10)

Templeton, S., Johnston, F., Bear, D., & Invernizzi, M. (2009). *Words their way: Word sorts for Derivational Relations spellers* (2nd Ed.). Boston: Pearson/Allyn & Bacon.

I began this article telling stories about my early years in the profession, and I will end with another personal observation. As a beginning teacher at both the primary and secondary levels, I did not have the background in how the spelling of English reflects a logic that could support children's and older students' learning about decoding, encoding, and vocabulary development. This is, unfortunately, still the case with far too many educators (for example Hughes & Searle, 1997; Hurry et al., 2005; Wong-Fillmore & Snow, 2005). My hope is that the resources I have shared in this article, as well as the references that follow, may help provide both foundational and practical information to help you address for your students the expectations in the areas of foundational and vocabulary skills and knowledge.

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