Developmental Word Knowledge

For students of all ages and languages, knowledge of the ways in which their written language represents the language they speak is the key to literacy. Understanding how the spoken word is represented in print is fundamental to this understanding: In English, for example, how do the marks on the page represent not only *sound* but also *meaning?* In this new fifth edition, we continue our exploration of how teachers can most effectively guide and support students' learning about the sounds, structure, and meanings of words—crafting our instruction so that our students learn about words *their* way. In addition to demonstrating how a developmental approach to word study best supports students' deep and long-term word learning, this new edition further explores how educators may apply this developmental model as they address the following: effective and engaging vocabulary instruction from preschool through the middle grades, ongoing progress monitoring, response to intervention, and accommodations for English learners. Whether you are a long-standing companion on this adventure or joining us for the first time, we welcome you on this continuing journey to learn and teach about words *their* way.

The Braid of Literacy

Literacy is like a braid of interwoven threads. The braid begins with the intertwining threads of oral language and stories that are read to children. As children experiment with putting ideas on paper, a writing thread is entwined as well. As children move into reading, the threads of literacy begin to bond. Students' growing knowledge of spelling or **orthography**—the correct sequences of letters in words—strengthens that bonding. The size of the threads and the braid itself become thicker as orthographic knowledge grows (see Figure 1.1).

During the preschool years, children acquire word knowledge in a fundamentally aural way from the language that surrounds them. Through listening to and talking about everyday events, life experiences, and stories, many children develop a rich speaking vocabulary. As they have opportunities to talk about and to categorize their everyday experiences, children begin to make sense of their world and to use language to negotiate and describe it. Children also begin to experiment with pen and paper when they have opportunities to observe parents, siblings, and caregivers writing for many purposes. They gradually come to understand the forms and functions of written language. The first written words students learn are usually their own names, followed by those of significant others. Words such as *Mom*, *cat*, *dog*, and phrases like *I love you* represent people, animals, and ideas dear to their lives.

As students grow as readers and writers, print becomes a critical medium for conceptual development. When purposeful reading, writing, listening, and speaking take place, vocabulary is learned along the way. Even more words are acquired when students explicitly examine word spellings to discover relationships among words and how these relationships represent sounds and meanings.

A major aim of this book is to demonstrate how an exploration of spelling or orthographic knowledge

FIGURE 1.1 Braid of Literacy
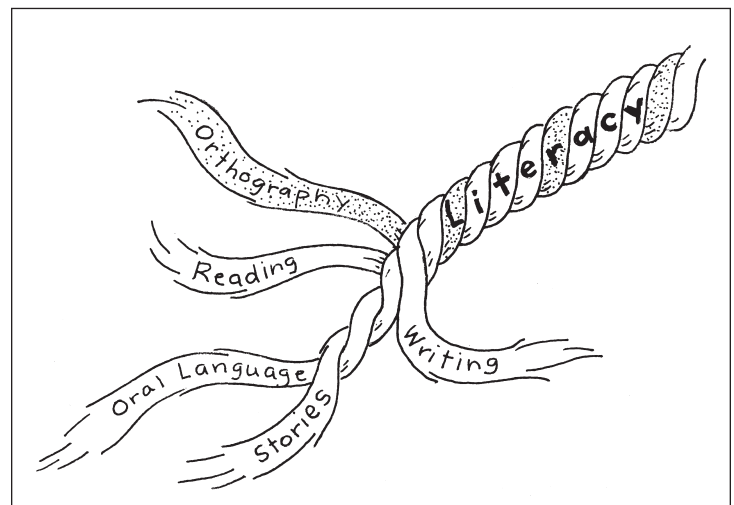
FIGURE 1.2 Student Sorting Words

can lead to the lengthening and strengthening of the literacy braid. Teachers must know a good deal about the ways in which these threads intertwine to create this bond so that they can direct children's attention to words *their* way.

There are similarities in the ways learners of all ages expand their knowledge of the world. It seems that humans have a natural interest in finding order, comparing and contrasting, and paying attention to what remains the same despite minor variations. Infants learn to recognize Daddy as the same Daddy with or without glasses, with or without a hat or whiskers. Through such daily interactions, we categorize our surroundings. Similarly, our students expand their vocabularies by comparing one concept with another. Gradually, the number of concepts they analyze increases, but the process is still one of comparing and contrasting. They may first call anything with four legs "doggie" until they attend to the features that distinguish dogs, cats, and cows, and later terriers, labrador retrievers, border collies, and greyhounds. In the process they learn the vocabulary to label the categories.

Word study, as described in this book, occurs in hands-on activities that reflect basic cognitive learning processes: comparing and contrasting by categorizing word features and then discovering similarities and differences within and between categories. For example, by sorting words according to whether they end in *ch* or *tch*, as the student is doing in Figure 1.2, students can discover a consistent pattern that goes with each. Single short vowels are followed by *tch* and vowel pairs are followed by *ch*. Under the guidance of a knowledgeable teacher, the logic of the spelling system is revealed when students sort words into categories.

During word study, words and pictures are sorted in routines that require children to examine, discriminate, and make critical judgments about speech sounds, spelling patterns, and meanings. Just as *Math Their Way* uses concrete manipulatives to illustrate principles of combining and separating (Baretta-Lorton, 1968), *Words Their Way* uses concrete pictures and words to illustrate principles of similarity and difference.

Children's Spellings: A Window into Developing Word Knowledge

Students have probably been "inventing" their own spelling ever since paper and pencil have been available, but it was not until the early 1970s that research by Charles Read (1971, 1975) and Carol Chomsky (1971) took a serious look at young children's spelling attempts. Their work introduced the world of literacy to the notion of invented spelling. Read understood that preschoolers' attempts were not just random displays of ignorance and confusion. To the contrary, his linguistic analysis showed that children's invented spellings provided a window into their developing word knowledge. These "inventions" revealed a systematic logic to the way some preschoolers selected letters to represent sounds.

At about the same time, Edmund Henderson and his colleagues at the University of Virginia had begun to look for similar logic in students' spellings across ages and grade levels (Beers & Henderson, 1977; Henderson & Beers, 1980). Read's findings provided these researchers with the tools they needed to interpret the errors they were studying. Building on Read's discoveries, Henderson unearthed an underlying logic to students' errors that changed

over time, moving from using but confusing elements of sound to using but confusing elements of pattern and meaning (Henderson, Estes, & Stonecash, 1972). The Virginia spelling studies corroborated and extended Read's findings upward through the grades and resulted in a comprehensive model of developmental word knowledge (Henderson, 1990; Templeton & Bear, 1992; Templeton & Morris, 2000).

Subsequent studies have confirmed this developmental model across many groups of students, from preschoolers (Ouellete & Sénéchal, 2008; Templeton & Spivey, 1980) through adults (Bear, Truex, & Barone, 1989; Massengill, 2006; Worthy & Viise, 1996), as well as across socioeconomic levels, dialects, and other alphabetic languages (Bear, Helman, & Woessner, 2009; Cantrell, 2001; He & Wang, 2009; Helman, 2009; Helman & Bear, 2007; Yang, 2005). The power of this model lies in the diagnostic information contained in students' spelling inventions that reveal their current understanding of how written words work (Invernizzi, Abouzeid, & Gill, 1994; McKenna & Picard, 2006). In addition, the analysis of students' spelling has been explored independently by other researchers (e.g., Bissex, 1980; Ehri, 1992; Holmes & Davis, 2002; Nunes & Bryant, 2009; Richgels, 1995, 2001; Treiman, 1993).

Henderson and his students not only studied the development of children's spelling, but also devised an instructional model to support that development. They determined that an informed analysis of students' spelling attempts can cue timely instruction in phonics, spelling, and vocabulary that is essential to move students forward in reading and writing. By using students' spellings as a guide, teachers can efficiently differentiate effective instruction in phonics, spelling, and vocabulary. We call this efficient and effective instruction **word study.**

Why Is Word Study Important?

Becoming fully literate is absolutely dependent on fast, accurate recognition of words and their meanings in texts and fast, accurate production of words in writing so that readers and writers can focus their attention on making meaning. Understanding of phonics and spelling patterns, high-frequency-word recognition, decoding strategies, and insight into word meanings are among the attributes that form the basis of written word knowledge. Designing a word study approach that explicitly teaches students necessary skills and engages their interest and motivation to learn about how words work is a vital aspect of any literacy program. Indeed, how to teach students these basics in an effective manner has sparked controversy among educators for nearly two hundred years (Balmuth, 1992; Carnine, Silbert, Kame'enui, & Tarver, 2009; Mathews, 1967; Schlagal, 2002; Schlagal, 2007; Smith, 2002).

Many phonics, spelling, and vocabulary programs are characterized by explicit skill instruction, a systematic scope and sequence, and repeated practice. However, much of the repeated practice consists of drill and memorization, so students have little opportunity to discover spelling patterns, manipulate word concepts, or apply critical thinking skills. Although students need explicit skill instruction within a systematic curriculum, it is equally true that "teaching is not telling" (James, 1899/1958).

Students need hands-on opportunities to manipulate word features in ways that allow them to generalize beyond isolated, individual examples to entire groups of words that are spelled the same way (Joseph, 2002; Juel & Minden-Cupp, 2000; Templeton, Smith, Moloney, Van Pelt, & Ives, 2009; White, 2005). Excelling at word recognition, spelling, and vocabulary is not just a matter of memorizing isolated rules and definitions. The best way to develop fast and accurate perception of word features is to engage in meaningful reading and writing and to have multiple opportunities to examine those same words and word features out of context. The most effective instruction in phonics, spelling, and vocabulary links word study to the texts students are reading, provides a systematic scope and sequence of word-level skills, and provides multiple opportunities for hands-on practice and application. In a sense, word study teaches students how to look at words so that they can construct an ever-deepening understanding of how spelling works to represent sound and meaning. We believe that this word study is well worth 10 to 15 minutes of instruction and practice daily.

What Is the Purpose of Word Study?

The purpose of word study is twofold. First, students develop a *general* knowledge of English spelling. Through active exploration, word study teaches students to examine words to discover generalizations about English spelling. They learn the regularities, patterns, and conventions of English orthography needed to read and spell. This general knowledge is conceptual in nature and reflects what students understand about the nature of our spelling system. Second, word study increases *specific* knowledge of words—the spellings and meanings of individual words.

General knowledge is what we access when we encounter a new word, when we do not know how to spell a word, or when we do not know the meaning of a specific word. The better our knowledge of the system, the better we are at decoding unfamiliar words, spelling correctly, or guessing the meanings of words. For example, if you have knowledge of short vowels and consonant **blends** (two consonants occurring together that each retain their individual sounds), you would have no trouble attempting the word *crash* even if you have never seen or written it before. The spelling is unambiguous, like so many single-syllable short vowel words. Knowledge of how words that are similar in spelling are related in meaning, such as *compete* and *competition*, makes it easier to understand the meaning of a word like *competitor*, even if it is unfamiliar. Additional clues offered by context also increase the chances of reading and understanding a word correctly.

To become fully literate, however, we also need specific knowledge about individual words. The word *rain*, for example, might be spelled *rane*, *rain*, or *rayne*—all are orthographically and phonetically plausible. However, only specific knowledge will allow us to remember the correct spelling. Likewise, only specific knowledge of the spelling of *which* and *witch* makes it possible to know which is which! The relationship between specific knowledge and general knowledge of the system is reciprocal; that is, each supports the other. Conrad (2008) expressed this idea in observing that "the transfer between reading and spelling occurs in both directions" (p. 876) and that "the orthographic representations established through practice can be used for both reading and spelling" (p. 869).

The purpose of word study, then, is to examine words in order to reveal the logic and consistencies within our written language system and to help students achieve mastery in recognizing, spelling, and defining specific words.

What Is the Basis for Developmental Word Study?

Word study evolves from three decades of research exploring developmental aspects of word knowledge with children and adults (Henderson, 1990; Henderson & Beers, 1980; Templeton, 2011; Templeton & Bear, 1992). This line of research has documented the convergence at certain developmental stages of specific kinds of spelling errors that tend to occur in clusters and reflect students' uncertainty over certain recurring orthographic principles. These "clusters" have been described in terms of (1) errors dealing with the alphabetic match of letters and sounds (FES for *fish*), (2) errors dealing with letter patterns (SNAIK for *snake*) and syllable patterns (POPING for *popping*), and (3) errors dealing with words related in meaning (INVUTATION for *invitation*—a lack of recognition that *invite* provides the clue to the correct spelling). The same cluster types of errors have been observed among students with learning disabilities and dyslexia (Sawyer, Lipa-Wade, Kim, Ritenour, & Knight, 1997; Templeton & Ives, 2007; Treiman, 1985; Worthy & Invernizzi, 1989), students who speak in variant dialects (Cantrell, 1990), and students who are learning to read in different alphabetic languages (Bear, Templeton, Helman, & Baren, 2003; Helman, 2004; Yang, 2004). Longitudinal and cross-grade-level research in developmental spelling has shown that developmental

progression (with associated stage-related errors) occurs for all learners of written English in the same direction and varies only in the rate of acquisition (Invernizzi & Hayes, 2004).

Word study also comes from what we have learned about the orthographic structure of written words. Developmental spelling researchers have examined the three layers of English orthography (Figure 1.3) in relation to the historical evolution of English spelling as well as developmental progressions from *alphabet* to *pattern* to *meaning* among learners of English. Each layer builds on the one before. In mature readers and writers, there is interaction among the layers.

FIGURE 1.3 Three Layers of English Orthography

Alphabet

Our spelling system is **alphabetic** because it represents the relationship between letters and sounds. In the word *sat*, each sound is represented by a single letter; we blend the sounds for *s*, *a*, and *t* to read the word *sat*. In the word *chin*, we still hear three sounds, even though there are four letters, because the first two letters, *ch*, function like a single letter, representing a single sound. So we can match letters—sometimes singly, sometimes in pairs—to sounds from left to right and create words. This **alphabetic layer** in English spelling is the first layer of information at work.

The alphabetic layer of English orthography was established during the time of Old English, the language spoken and written by the Anglo-Saxons in England between the Germanic invasions of the sixth century C.E. and the conquest of England by William of Normandy in 1066 (Lehr, 2009). Old English was remarkably consistent in letter–sound correspondence and used the alphabet to systematically represent speech sounds. The long vowels were pronounced close to the way they are in modern Romance languages today, such as Spanish, French, and Italian.

The history of the alphabetic layer reflected in the story of Old English is relevant to teachers today because beginners spell like "little Saxons" as they begin to read and write (Henderson, 1981). Armed with only a rudimentary knowledge of the alphabet and letter sounds, beginning spellers of all backgrounds use their alphabet knowledge quite literally. They rely on the sound embedded in the names of the letters to represent the sounds they are trying to represent (Read, 1971). This strategy works quite well for consonants when the names do, in fact, contain the correct corresponding speech sounds (*Bee*, *Dee*, *eF*, *eS*, and so forth). It works less well for letters that have more than one sound (*C*, *G*), and it does not work at all for consonants with names that do not contain their corresponding speech sounds (*W*: *double you*; *Y*: *wie*; and *H*: *aitch*). Short vowel sounds are particularly problematic for novice spellers because there is no single letter that "says" the short vowel sound. As a result, beginning readers choose a letter whose name, when pronounced, is closest to the targeted short vowel sound (Beers & Henderson, 1977; Read, 1975). For example, beginning readers often spell the short *e* sound in *bed* with the letter *a* (BAD) and the short *i* sound in *rip* with the letter *e* (REP).

Pattern

Why don't we spell all words in English "the way they sound"—at the alphabetic level, in other words? If we did, words like *cape*, *bead*, and *light* would look like *cap*, *bed*, and *lit*—but these spellings, of course, already represent other words. The **pattern layer** therefore overlies the alphabetic layer. Because there are 42 to 44 sounds in English and only 26 letters in the alphabet, single sounds are sometimes spelled with more than one letter or are affected by other letters that do not stand for any sounds themselves. When we look beyond single letter–sound match-ups and search for **patterns** that guide the groupings of letters, however, we find surprising consistency (Hanna, Hanna, Hodges, & Rudorf, 1966; Venezky, 1999).
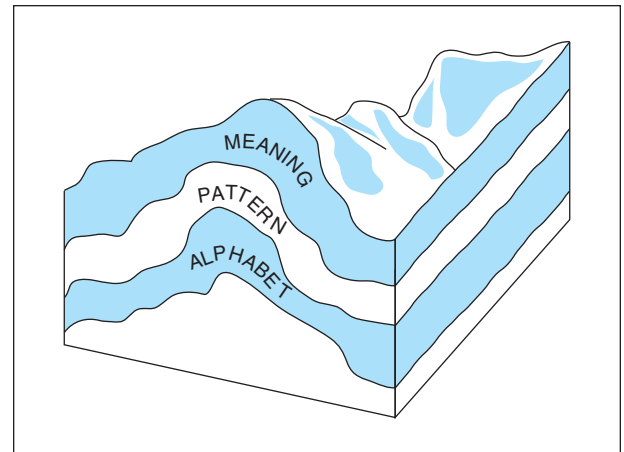
Take, for example, the *ape* in *cape;* we say that the final *e* makes the preceding vowel letter, *a*, stand for a long vowel sound. The *e* does not stand for a sound itself, but it plays an important role. The *ape* group of letters therefore follows a pattern: When you have a vowel, a consonant, and a silent *e* in a single syllable, this letter grouping forms a pattern that usually will function to indicate a long vowel. We refer to this pattern as the consonant-vowel-consonant-silent *e* (CVCe) pattern—one of several high-frequency long vowel patterns.

The notion of pattern helps us talk more efficiently about the alphabetic layer as well. In a CVC pattern (*sat, chin, crash*), note that, regardless of how many consonant letters are on either side of the single vowel, the fact that there is but one vowel letter in that pattern means it will usually stand for a short vowel sound.

Words of more than one syllable also follow spelling patterns. These patterns are described with the same V and C symbols and also relate to the vowel sound within each syllable. Let's consider two of the most common syllable patterns. First is the VCCV pattern, such as in *robber* (the pattern is vowel and consonant to the left of the syllable break and consonant and vowel to the right). When we have this pattern, the first vowel is usually short. Second is the VCV syllable pattern, as in *robot*, *pilot*, and *limit*. This pattern will usually signal that the first vowel is long, but in a few cases, such as *limit*, the first vowel may be short. Overall, knowledge about patterns within single syllables and syllable patterns within words will be of considerable value to students in both their reading and their spelling.

Where did these patterns originate? The simple letter–sound consistency of Old English was overlaid by a massive influx of French words after the Norman conquest in 1066. Because these words entered the existing language through bilingual Anglo-Norman speakers, some of the French pronunciations were adopted, too. Also, because the scribes who wrote the new words were biliterate, they applied French orthographic conventions to the spellings of some English words as well. Old English was thus overlaid with the vocabulary and spelling traditions of the ruling class, the Norman French. This complex interaction of pronunciation change on top of the intermingling of French and English spellings led to a proliferation of different vowel sounds represented by different vowel patterns. The extensive repertoire of vowel patterns today is attributable to this period of history, such as the various pronunciations of the *ea* vowel pair in words like *bread* and *thread*, *great* and *break*, *meat* and *clean*. It is uncanny that students moving out of the beginning phase spell like "little Anglo-Normans" when they write *taste* as TAIST or *leave* as LEEVE.

Meaning

The third layer of English orthography is the **meaning layer.** When students learn that groups of letters can represent meaning directly, they will be much less puzzled when encountering unusual spellings. Examples of these units or groups of letters are prefixes, suffixes, and Greek and Latin roots. These units of meaning are called **morphemes**—the smallest units of meaning in a language.

As one example of how meaning functions in the spelling system, think of the prefix *re-;* whether we hear it pronounced "ree" as in *rethink* or "ruh" as in *remove*, its spelling stays the same because it directly represents meaning. Why is *composition* not spelled *compusition* since the second vowel sounds more like *uh* than *o?* Because it is related in meaning to *compose*. The spelling of the second vowel in the related words, *compose* and *composition*, stays the same even though the pronunciation of the second syllable is different. Likewise, the letter sequence *photo* in *photograph*, *photographer*, and *photographic* signals spelling–meaning connections among these words, despite the changes in sounds that the letter *o* represents.

How did Greek roots like *photo* enter into English orthography? The explosion of knowledge and culture during the Renaissance required a new, expanded vocabulary to accommodate the growth in learning that occurred during this time. Greek and Latin were used by educated people throughout Europe and classical roots had the potential to meet this demand for meaning. Greek roots could be combined (for example *autograph* and *autobiography*) and prefixes and suffixes were added to Latin roots (*inspect*, *spectator*, and *spectacular*). So, to the orthographic record of English history was added a third layer of meaning that built new vocabulary out of elements that came from classical Greek and Latin.

The spelling–meaning relations inherent in words brought into English during the Renaissance have important implications for vocabulary instruction today as students move through the intermediate grades and beyond (Templeton, 2004). As students explore how spelling visually preserves the meaning relationships among derivationally related words (for example *bomb* and *bombard*, *mental* and *mentality*), vocabulary and spelling instruction become closely related. The seemingly arbitrary spelling of some words—in which silent letters occur or vowel spellings seem irrational—is in reality central to understanding the meanings of related words. For example, the "silent" *c* in *muscle* is "sounded" in the related words *muscular* and *musculature*—all of which come from the Latin *musculus*. Such words, through their spellings, carry their history with them (Venezky, 1999).

Learning the Layers of English Orthography

Organizing the phonics, spelling, and vocabulary curriculum according to historical layers of alphabet, pattern, and meaning provides a systematic guide for instruction and places the types of words to be studied in an evolutionary progression that mirrors the development of the orthographic system itself. Anglo-Saxon words, the oldest words in English, are among the easiest to read and the most familiar. Words like *sun*, *moon*, *day*, and *night* are high-frequency "earthy" words that populate easy reading materials in the primary grades. Anglo-Saxon words survive in high-frequency prepositions, pronouns, conjunctions, and auxiliary verbs (for example *have*, *was*, *does*) although the pronunciation is now quite different. More difficult Norman French words of one and two syllables—words like *chance*, *chamber*, *royal*, *guard*, and *conquer*—appear with great frequency in books suitable for the elementary grades. The less frequent, more academic vocabulary of English—words like *calculate*, *maximum*, *cumulus*, *nucleus*, *hemisphere*, *hydraulic*, and *rhombus*—are of Latin and Greek origin and appear most often in student reading selections in the middle grades and beyond.

Alphabet, pattern, and meaning represent three broad principles of written English and form the layered record of orthographic history. Students' spelling attempts mirror the richness and complexity of this history. As students learn to read and write, they appear to reinvent the system as it was itself invented. As shown in Figure 1.4, beginners invent the spellings of simple words quite phonetically, just as the Anglo-Saxons did in 1000 C.E. As students become independent readers, they add a second layer of complexity by using patterns, much as the Norman French did. Notice the overuse of the silent *e* at the ends of all of Antonie's words, much like Geoffrey Chaucer's! Intermediate and advanced readers invent conventions for joining syllables and units of meaning, as was done during the Renaissance when English incorporated a large Classical Greek and Latin vocabulary (Henderson, 1990; Templeton, Bear, Invernizzi, & Johnston, 2010). As Figure 1.4 shows, both Julian and Elizabeth I struggled with issues relating to consonant doubling where syllables meet.

In this book, we suggest that orthographic knowledge plays a central role in a comprehensive language arts program that links reading and writing. Word knowledge accumulates as students develop orthographic understandings at the alphabetic level, the pattern level, and the meaning level in overarching layers of complexity. Students

FIGURE 1.4 Historical Development of English Orthography: Sound, Pattern, and Meaning from Past to Present

	Anglo-Saxon	**Letter Name–Alphabetic**
Alphabet	WIF (wife) TODAEG (today) HEAFONUM (heaven) **(Lord's Prayer, 1000)**	WIF (wife) TUDAE (today) HAFAN (heaven) **(Tawanda, age 6)**
	Norman French	**Within Word Patterns**
Pattern	YONGE (young) SWETE (sweet) ROOTE (root) CROPPE (crop) **(Chaucer, 1440)**	YUNGE (young) SWETE (sweet) ROOTE (root) CROPPE (crop) **(Antonie, age 8)**
	Renaissance	**Syllables & Meaning**
Meaning	DISSCORD (discord) FOLOWE (follow) MUSSIKE (music) **(Elizabeth I, 1600)**	DISSCORD (discord) FOLOWE (follow) MUSSIC (music) **(Julian, age 14)**

Source: Adapted from "Using Students' Invented Spellings as a Guide for Spelling Instruction That Emphasizes Word Study" by M. Invernizzi, M. Abouzeid, & T. Gill, 1994, *Elementary School Journal, 95*(2), p. 158. Reprinted by permission of The University of Chicago Press.

discover the basic principles of spelling—alphabet, pattern, and meaning—when they read and write purposefully and are also provided with explicit, systematic word study instruction by knowledgeable teachers. Word study should give students the experiences they need to progress through these layers of information.

- For students who are experimenting with the alphabetic match of letters and sounds, teachers can contrast aspects of the writing system that relate directly to the representation of sound. For example, words spelled with short *e* (*bed*, *leg*, *net*, *neck*, *mess*) are compared with words spelled with short *o* (*hot*, *rock*, *top*, *log*, *pond*).
- For students experimenting with pattern, teachers can contrast patterns as they relate to vowels. For example, words spelled with *ay* (*play*, *day*, *tray*, *way*) are compared to words spelled with *ai (wait*, *rain*, *chain*, *maid*).
- For students experimenting with conventions of syllables, affixes (prefixes and suffixes), and other meaning units, teachers can help students become aware of the stability of these elements across variations. Students will see that words with similar meanings are often spelled the same, despite changes in pronunciation. For example, *admiration* is spelled with an *i* because it comes from the word *admire*.

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The Development of Orthographic Knowledge

When we say word study is developmental, we mean that the study of word features must match the level of word knowledge of the learner. Word study is not a one-size-fits-all program of instruction that begins in the same place for all students within a grade level. One unique quality of word study, as we describe it, lies in the critical role of differentiating instruction for different levels of word knowledge.

Research spanning over 30 years has established how students learn the specific *features* of words as well as the *order* in which they learn them. Knowledgeable educators have come to know that word study instruction must match the needs of the child. This construct, called **instructional level,** is a powerful determinant of what may be learned. Simply put, we must teach within each child's zone of understanding (Harre & Moghaddam, 2003; Vygotsky, 1962). To do otherwise results in frustration or boredom and little learning in either case. Just as in learning to play the piano students must work through book A, then book B, and then book C, learning to read and spell is a gradual and cumulative process. Word study begins with finding out what each child already knows and then starting instruction there.

One of the easiest and most informative ways to know what students need to learn is to look at the way they spell words. Students' spellings provide a direct window into how they think the system works. By interpreting what students do when they spell, educators can target a specific student's instructional level and plan word study instruction that this student is conceptually ready to acquire. Furthermore, by applying basic principles of child development, educators have learned how to engage students in learning about word features in a child-centered, developmentally appropriate way.

When students are instructed within their own zone of understanding or **zone of proximal development (ZPD)**—studying words *their* way—they are able to

build on what they already know, to learn what they need to know next, and to move forward. Zone of proximal development was first described by Vygotsky (1962); the "zone" refers to the span between what a learner knows and is able to do independently and what she is able to do with support and guidance. With direct instruction and ongoing support, word features that were previously omitted or confused become incorporated into an ever-increasing reading and writing vocabulary.

Stages of Spelling Development

As we have described, students move from easier one-to-one correspondences between letters and sounds, to more difficult, abstract relationships between letter patterns and sounds, to even more sophisticated relationships between meaning units as they relate to sound and pattern. Developmental spelling research describes this growth as a continuum or a series of chronologically ordered stages or phases of word knowledge (Ehri, 2005; Nunes & Bryant, 2009; Steffler, 2001; Templeton, 2011). In this book, we use the word *stage* as a metaphor to inform instruction. In reality, as students grow in conceptual knowledge of the three general layers of information and of specific word features, there is often an overlap in the layers and features students understand and use.

Stages are marked by broad, qualitative shifts in the types of spelling errors students make as well as changes in the way they read words. It is not the case that students abandon sound once they move to the use of patterns, or abandon patterns once they move to the use of meaning units or **morphology.** Rather, the names of the stages capture the key understandings that distinguish them among the layers of English orthography and among the levels of students' general knowledge of the orthography (Bryant, Nunes, & Bindman, 1997; Ehri, 1997, 2006; Templeton, 2002, 2003). Over the years, the labels used to describe the five stages of spelling development have changed somewhat to reflect what research has revealed about the nature of developmental word knowledge and to represent most appropriately what occurs at each level.
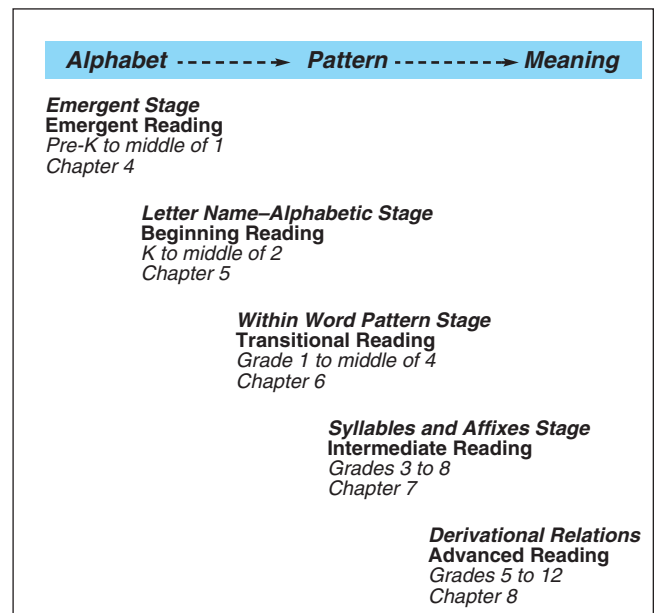
Because word study is based on students' level of orthographic knowledge, the word study activities presented in this book are arranged by stages of spelling. Knowing each student's stage of spelling will determine your choices of appropriate word study activities. This chapter presents an overview of these stages (see Figure 1.5), which guides you to the instructional chapters. Teachers can use the guidelines discussed in this chapter and the assessment procedures described in Chapter 2 to determine the spelling stages of their students. By conducting regular spelling assessments, perhaps three times a year, teachers can track students' progress and development. An important prerequisite, however, is to know the continuum of orthographic development.

For each stage, students' orthographic knowledge is defined by three functional levels that are useful guides for knowing when to teach what (Invernizzi et al., 1994):

1. What students do correctly—an independent or easy level
2. What students use but confuse—an instructional level at which instruction is most helpful
3. What is absent in students' spelling—a frustration level in which spelling concepts are too difficult

Studying the stages of spelling development has important implications for a scope and sequence of word study. In Vygotskian terms (1962), focus on the student's zone of

FIGURE 1.5 Spelling and Reading Stages, Grade Levels, and Corresponding Instructional Chapters

Alphabet -------> *Pattern* --------> *Meaning*

Emergent Stage
Emergent Reading
Pre-K to middle of 1
Chapter 4

Letter Name–Alphabetic Stage
Beginning Reading
K to middle of 2
Chapter 5

Within Word Pattern Stage
Transitional Reading
Grade 1 to middle of 4
Chapter 6

Syllables and Affixes Stage
Intermediate Reading
Grades 3 to 8
Chapter 7

Derivational Relations
Advanced Reading
*Grades 5 to 12*
Chapter 8

proximal development by determining what the student uses but confuses. In this way, you will learn which orthographic features and patterns to explore, because this is where instruction will most benefit the student.

Emergent Spelling

Emergent spelling encompasses the writing efforts of children who are not yet reading conventionally and in most cases have not been exposed to formal reading instruction. Emergent spellers typically range in age from 2 to 5 years, although anyone not yet reading conventionally is in this stage of development. Most toddlers and preschoolers are emergent spellers, as are most kindergartners and even some first-graders at the beginning of the year. Emergent spelling may range from random marks to legitimate letters that bear a relationship to sound. However, most of the emergent stage is decidedly **prephonetic,** which means there is little if any direct relationship between a character on the page and an individual sound.

Emergent spelling may be divided into a series of steps or landmarks. In the early emergent stage, students may produce large scribbles that are basically drawings. The movement may be circular, and children may tell a story while they draw. At the earliest points in this stage there are no designs that look like letters and the writing is undecipherable from the drawing. As you can see in Figure 1.6(A), Haley has drawn large scribble-like circles and simply called it writing, asserting that it says, "All the birdies." There is little order to the direction in Haley's production; it goes up, down, and around, willy-nilly.

Gradually, and especially when sitting next to other children or adults who write, children begin to use something that looks like script to "tell" about the picture. In the middle of the emergent stage, pretend writing is separate from the picture, although there is still no relationship between letters and sound. Writing may occur in any direction but is generally linear. In Figure 1.6(B), the child labeled his drawing to the left of the picture as "Cowboy."

FIGURE 1.6 Early Emergent Writing
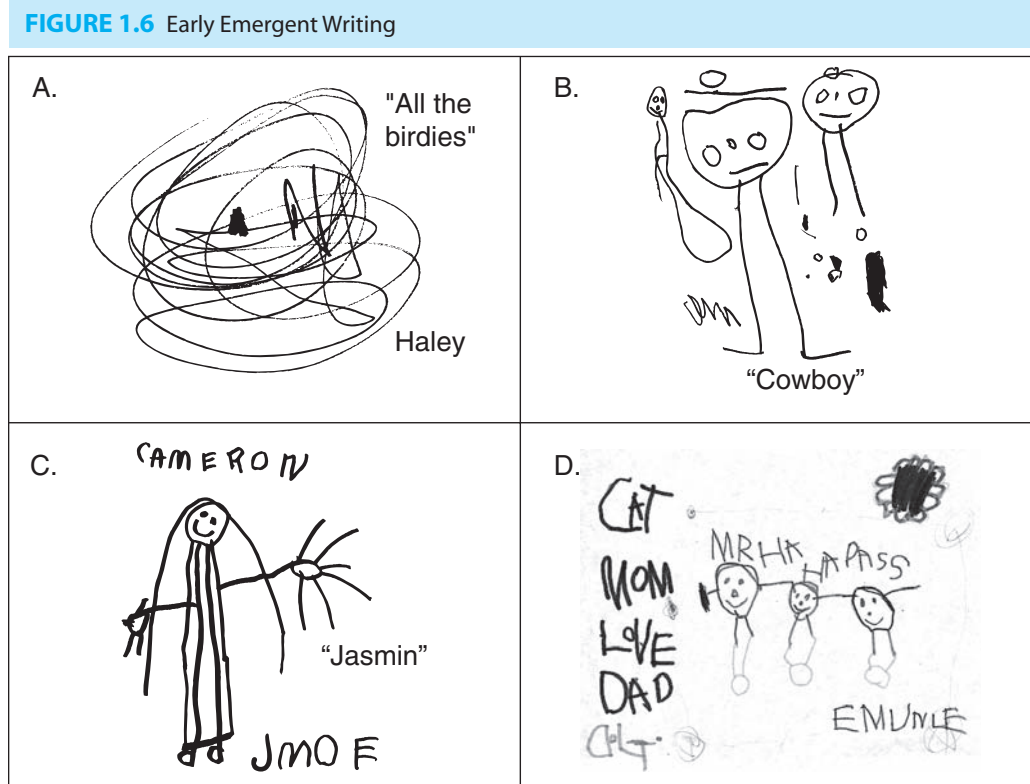
Source: From dissertation by Janet Bloodgood (1996). Adapted with permission.

Throughout the emergent stage, children begin to learn letters, particularly the letters in their own names, and begin to pay attention to the sounds in words. Toward the end of the emergent stage, their writing starts to include the most prominent sounds in a word. The ability to make a few letter–sound matches is evident in Figure 1.6(C), in which *Jasmin* is spelled JMOE. Toward the end of emergent spelling, students start to memorize some words and write them repeatedly, such as the *cat*, *Mom*, *love*, and *Dad* in Figure 1.6(D). The movement from this stage to the next stage hinges on learning the **alphabetic principle:** Letters represent sounds in a systematic way, and words can be segmented into sequences of sound from left to right.

Letter Name–Alphabetic Spelling

The **letter name–alphabetic spelling stage** is the second stage in the developmental model and encompasses that period of time during which students are formally taught to read, typically during the kindergarten and first grade years and extending into the middle of second grade. Most letter name–alphabetic spellers are between the ages of 5 and 8 years, although a beginning reader at age 55 also can be a letter name–alphabetic speller (Bear, 1989; Massengill, 2006; Viise, 1996). Early in this stage, "letter name" is students' dominant approach to spelling; that is, they use the *names* of the letters as cues to the sounds they want to represent (Read, 1975). In Ellie's early letter–name alphabetic spelling shown in Figure 1.7, she used the letter *Y* to represent the /w/ sound at the beginning of the word *when*, because the first sound in the pronounced letter name *Y* ("wie") matches the first sound in the word *when*. The letter name for *N* includes the "en" sound to finish off the word *when*. Ellie used *R* and *U* to represent the entire words *are* and *you*, another early letter name strategy.

We divide this letter name–alphabetic stage into early, middle, and late periods because of the rapid

FIGURE 1.7 Early Letter Name–Alphabetic Spelling: Ellie's Note to Her Sister, Meg—"When Are You Coming?"

and dramatic growth during this time. As students move through this stage, they learn to segment the sounds or **phonemes** within words and to match the appropriate letters or letter pairs to those sequences.

EARLY LETTER NAME–ALPHABETIC SPELLING. Early in the letter name–alphabetic stage students apply the alphabetic principle primarily to consonants, as Ellie did in Figure 1.7. Often, students spell the first sound and then the last sound of single-syllable words. For example, *when* may be spelled Y or YN. The middle elements of syllables, the vowels, are usually omitted. Typically, only the first sound of a two-letter consonant blend is represented, as in FT for *float*.

Students at this stage find matches between letters and the spoken word by how the sound is made or articulated in the mouth. For example, students may confuse the /b/ and /p/ sounds because they are made with the lips in the same way except for the **voiced** sound produced by the vocal cords vibrating to make the /b/. An early letter name–alphabetic speller might spell the word *pat* as BT.

Early letter name–alphabetic writing often lacks spacing between words, which makes it hard to decipher unless you know something about the writer's message. This type of writing is **semiphonetic** because only some of the sounds are represented.
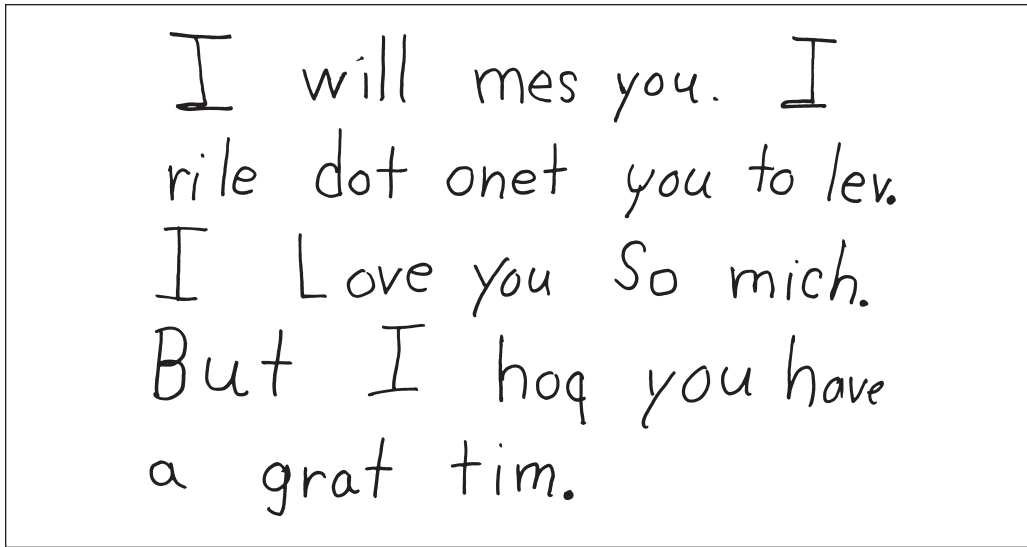
MIDDLE TO LATE LETTER NAME–ALPHABETIC SPELLING. In her note in Figure 1.8, Kaitlyn shows mastery of most beginning and ending consonants. She spells many high-frequency words correctly, such as *will*, *love*, *have*, and *you*. What clearly separates her from the

I will mes you. I rile dot onet you to lev. I Love you So mich. But I hoq you have a grat tim.

early letter name speller is her consistent use of vowels. Long vowels, which "say their name," appear in TIM for *time* and HOP for *hope*, but silent letters are not represented. Short vowels are used but confused, as in *miss* spelled as MES and *much* as MICH.

In the middle letter name–alphabetic stage, students are also learning to segment both sounds in a consonant blend and begin to represent the blends correctly, as in GRAT for *great*. Kaitlyn has also correctly represented the /ch/ digraph in *much*. A **digraph** is two consonant letters that together stand for a single sound. Because middle letter name–alphabetic spellers can segment and represent most of the sound sequences heard within single-syllable words, their spelling is described as **phonetic.**

LATE LETTER NAME–ALPHABETIC SPELLERS. By the end of this stage, late letter name–alphabetic spellers are able to consistently represent most regular short vowel sounds, digraphs, and consonant blends because they have full **phonemic awareness.** The letters *n* and *m* as in *bunk* or *lump* are referred to as **preconsonantal nasals** (nasal sounds that come before a consonant) and are generally omitted by students throughout this stage, as when they spell them as BUK or LUP. Kaitlyn omitted the nasal in her spelling of *don't* as DOT and used an interesting strategy to get the *n* in *want* by spelling it as *one + t*.

Henderson (1990) recognized that the correct spelling of the preconsonantal nasal was a reliable and important watershed event that heralds the onset of the next stage of orthographic knowledge. By the end of the stage, students have firmly established the alphabetic layer of English orthography and will now begin to use but confuse silent long vowel markers such as the silent *e*, spelling *rain*, for example, as RANE.

Within Word Pattern Spelling

Students entering the **within word pattern spelling stage** can read and spell many words correctly because of their automatic knowledge of letter sounds and short vowel patterns. This level of orthographic knowledge typically begins as students transition to independent reading toward the end of first grade. It expands throughout the second and third grades, and even into the fourth grade. Although most within word pattern spellers typically range in age from 7 to 10 years, many low-skilled adult readers remain in this stage. Regardless, this period of orthographic development lasts longer than the letter name–alphabetic stage, because the vowel pattern system of English orthography is quite extensive.

The within word pattern stage begins when students can correctly spell most single-syllable short vowel words correctly, as well as consonant blends, digraphs, and pre-consonantal nasals. Once these basic phonics features have been mastered, within word pattern spellers can work at a more abstract level than letter name–alphabetic spellers (Snowling, 1994; Zutell, 1994). They move away from the linear, sound-by-sound approach of the letter name–alphabetic spellers and begin to include patterns or chunks of letter sequences. Within word spellers can think about words in more than one dimension; they study words by sound and pattern simultaneously. As the name of this stage suggests, within word pattern spellers take a closer look at vowel patterns within single-syllable words (Henderson, 1990).

FIGURE 1.9 Early Within Word Pattern Spelling: Kim's Soccer Game

Kim's writing in Figure 1.9 is that of an early within word pattern speller. She spells many short vowel and high-frequency words correctly, such as *hill*, *had*, *them*, *girl*, and *won*. She also spells some common long vowel patterns correctly in CVCe words like *time* and *game*. Kim hears the long vowel sounds in words like *team*, *goal*, and *throw*, but she selects incorrect patterns, spelling them as TEME, GOWL, and THROWE. She omits the silent *e* in *cones*. These are good examples of how Kim is using but confusing long vowel patterns.

During the within word pattern stage, students first study the common long vowel patterns (long *o* can be spelled with *o*-consonant-*e* as in *joke*, *oa* as in *goal*, and *ow* as in *throw*) and then less common patterns such as the VCC pattern in *cold* and *most*. The most difficult patterns are **ambiguous vowels** because the sound is neither long nor short and the same pattern may represent different sounds, such as the *ou* in *mouth*, *cough*, *through*, and *tough*. These less common and ambiguous vowels may persist as misspellings into the late within word pattern stage.

Although the focus of the within word pattern stage is on the pattern layer of English orthography, students must also consider the meaning layer to spell and use **homophones,** words such as *bear* and *bare*, *deer* and *dear*; and *hire* and *higher*. Because these words sound the same but have different spellings and meanings, sound, pattern, and meaning must be considered when spelling. Homophones introduce the spelling–meaning connection explored in the next two stages of spelling development.
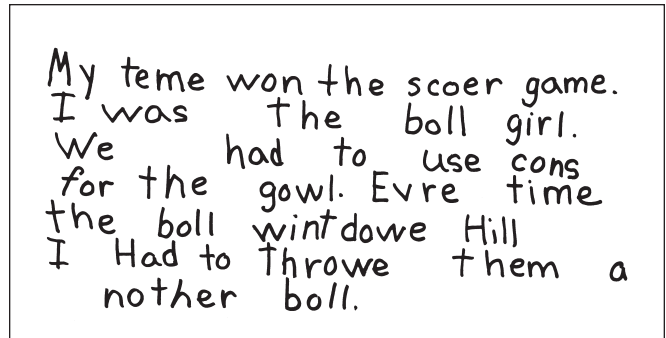
Syllables and Affixes Spelling

The **syllables and affixes stage** is typically achieved in the upper elementary and middle school grades, when students are expected to spell many words of more than one syllable. This represents a new point in word study when students consider spelling patterns where syllables meet and meaning units such as affixes (prefixes and suffixes). Students in this fourth stage are most often between 9 and 14 years, though many adults can also be found in this stage.

In Figure 1.10, a fourth-grader in the early syllables and affixes stage has written about his summer vacation. Xavier spelled most one-syllable short and long vowel words correctly (*went*, *west*, *drove*, *last*). Many of his errors are in two-syllable words and fall at the places where syllables and affixes meet. Xavier has used—but confused—the conventions for preserving vowel sounds when adding **inflectional endings** in *stopped* and *hiking*, spelled as STOPED and HIKEING. The principle of doubling the consonant at the **syllable juncture** to keep the vowel short is used in LITTEL for *little*, but is lacking in his spelling of *summer* as SUMER.

Syllable juncture patterns include the open first syllable in *hu-mor* (V/CV usually signals

FIGURE 1.10 Syllables and Affixes Spelling: Xavier's Account of His Summer Adventures
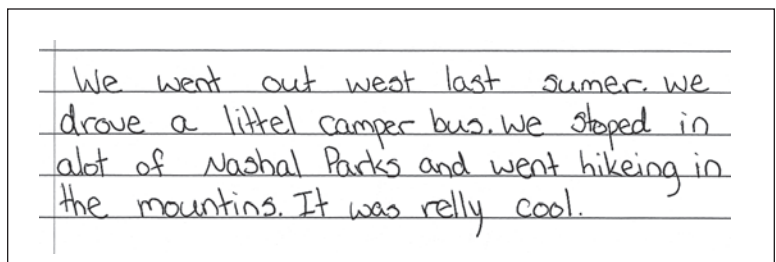
a long vowel in the first syllable) and closed first syllable in *sum-mer* and *cam-per* (VC/CV usually signals a short vowel sound in the first syllable). The term **open syllable** refers to syllables that remain "open" because they end with a long vowel sound; the term **closed syllable** refers to syllables that are "closed" by a consonant or consonants, resulting in a short vowel sound. Unaccented final syllables give students difficulty because the vowel sound is not clear and may be spelled different ways, as shown in Xavier's spellings of LITTEL for *little* and MOUNTINS for *mountains*.

Toward the end of the syllables and affixes stage, students explore spelling patterns involving affixes that affect the meanings of words—for example, DESLOYAL for *disloyal* and CARE-FULL for *careful*. By studying base words and affixes as meaning units, students are constructing the foundation for the next stage, derivational relations, in which they study the spelling–meaning connections of related words (Templeton, 2004). By studying base words and derivational affixes, students learn more about English spelling as they enrich their vocabularies.

Derivational Relations Spelling

The **derivational relations spelling stage** is the final stage in the developmental model. Although some students may move into the derivational stage as early as grade 4 or 5, most derivational relations spellers are found in middle school, high school, and college. This stage continues throughout adulthood, when individuals continue to read and write according to their interests and specialties. This stage of orthographic knowledge is known as *derivational relations* because this is when students examine how many words may be *derived* from base words and word roots. Students discover that the meanings and spellings of meaningful word parts or morphemes remain constant across different but derivationally related words (Henderson & Templeton, 1986; Henry, 1988; Nunes & Bryant, 2009; Schlagal, 1989; Templeton, 2004). Word study in this stage builds on and expands knowledge of a wide vocabulary, including thousands of words of Greek and Latin origin. We refer to this level as the **generative** level of spelling and vocabulary instruction, because as students explore and learn about the word formation processes or morphology of English they are able to *generate* knowledge of literally thousands of words (Kirk & Gillon, 2009; Nunes & Bryant, 2006; Templeton, Bear, Invernizzi, and Johnston, 2010).

Early derivational relations spellers like sixth-grader Kaitlyn (Figure 1.11) spell most words correctly. However, some of her errors reflect a lack of knowledge about derivations. For example, *favorite* is spelled FAVERITE and does not show its relationship to *favor*; and *different* is spelled DIFFRENT and lacks a connection to *differ*. Her errors on final suffixes, such as the *-sion* in *division* and the *-ent* in *ingredients* are also very typical of students in this stage.

FIGURE 1.11 Derivational Relations Spelling: Kaitlyn's Sixth Grade Math Journal Reflection
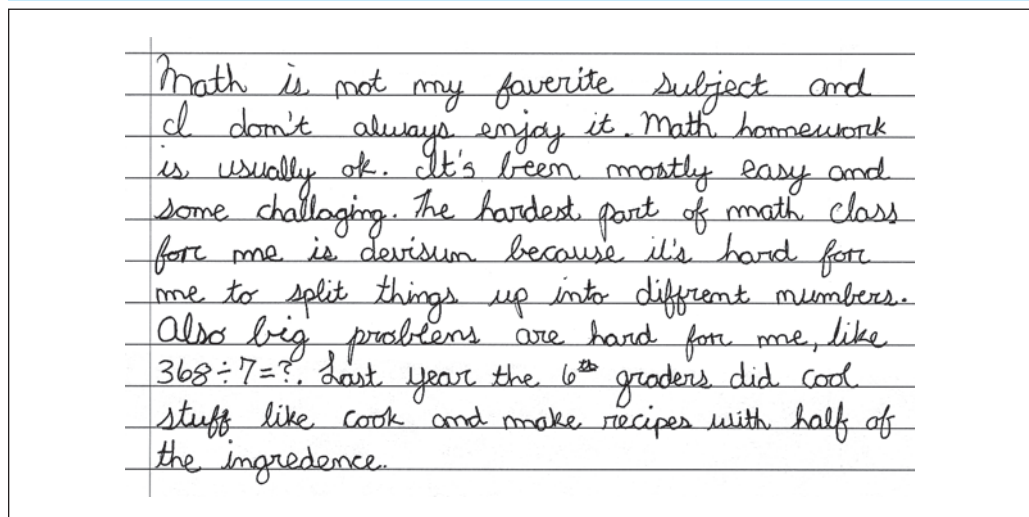
A frequent type of error at this level is the spelling of the unaccented or **reduced vowel** in derivationally related pairs. When *competition* is derived from the base word *compete*, adding the suffix *-ition* has the effect of reducing the vowel in the second syllable to a schwa sound. The **schwa** sounds like a short *u* with no "oomph" behind it and is often misspelled any number of ways: Students in the earlier part of the derivational relations stage might spell *competition* as COMPUTITION or COMPOTITION or even COMPITITION. A student who misspells *competition* may see the correct spelling more easily by going back to the base, as in *compete*, in which the long vowel gives a clear clue to spelling. Knowing that the word *competition* is derivationally related to the word *compete* will help these students spell the derived form correctly.

Students' spelling errors often have to do with using but confusing issues of consonant doubling in **absorbed (assimilated) prefixes,** the convention of changing the last consonant of a prefix to the first consonant of the base word or word root (for example, *in* + *mobile* = *immobile*). Students may spell *immobile* as IMOBILE or *correspond* as CORESPOND. Other aspects of affixation students negotiate in the derivational relations stage involve changing adjectives to nouns (*brilliant* to *brilliance*; *adolescent* to *adolescence*). It is not uncommon to find students using but confusing these derivational endings (for example, INDEPENDANCE and DEFENDENT).

The logic inherent in this lifelong stage can be summed up as follows: Words that are related in meaning are often related in spelling as well, despite changes in sound (Templeton, 1979, 1983, 2004). Spelling–meaning connections provide a powerful means for expanding vocabulary.

The Synchrony of Literacy Development

The scope and sequence of word study instruction presented in Chapters 4 through 8 is based on research describing the developmental relationship between spelling and reading behaviors. When teachers conduct word study with students, they are addressing learning needs in all areas of literacy because development in one area relates to development in other areas. This harmony in the timing of development has been described as the **synchrony** of reading, writing, and spelling development (Bear, 1991b; Bear & Templeton, 1998). All three advance in stagelike progressions that share important conceptual dimensions.

Working independently, other researchers have described a remarkably similar progression of reading phases covering the range from prereading to highly skilled, mature reading (Chall, 1983; Ehri, 2005; Frith, 1985; Juel, 1991; Spear-Swerling & Sternberg, 1997). There is converging evidence that reading, writing, and spelling development are integrally related. Figure 1.12 compares other researchers' descriptions of reading development to the spelling stages.

Individuals may vary in their rate of progress through these stages, but most tend to follow the same order of development. The synchrony that is observed makes it possible to bring together reading, writing, and spelling behaviors to assess and plan differentiated instruction that matches students' developmental pace. The following discussion centers on this overall progression with an emphasis on the synchronous behaviors of reading and writing with spelling.

Emergent Readers

During the emergent stage, the child may undertake reading and writing in earnest, but adults will recognize their efforts as more pretend than real. Students often write with scribbles, letterlike forms, or random letters that have no phonetic relationship to the words they confidently believe they are writing. These students may "read" familiar books from memory using the pictures on each page to cue their recitation of the text. Chall (1983) called this stage of development *prereading* because students are not reading in a conventional sense. Emergent

Alphabet ⟶ Pattern ⟶ Meaning

Emergent Spelling
Emergent Reader

Prereading *(Chall, 1983)*
Logographic *(Frith, 1985)*
Prealphabetic *(Ehri, 1997)*
Selective Cue *(Juel, 1991)*

Letter Name–Alphabetic Spelling
Beginning Reader

Stage 1: Initial Reading & Decoding *(Chall, 1983)*
Alphabetic *(Frith, 1985)*
Partial-to-Full Alphabetic *(Ehri, 1997)*
Phonetic Cue *(Spear-Swerling & Sternberg, 1997)*

Within Word Pattern Spelling
Transitional Reader

Stage 2: Confirmation & Fluency *(Chall, 1983)*
Orthographic *(Frith, 1985)*
Consolidated Alphabetic *(Ehri, 1997)*
Automatic Word Recognition *(Spear-Swerling & Sternberg, 1997)*

Syllables and Affixes Spelling
Intermediate Reader

Stage 3: Reading to Learn *(Chall, 1983)*
Strategic Reading *(Spear-Swerling & Sternberg, 1997)*

Derivational Relations Spelling
Advanced Reader

Stage 4: Multiple Viewpoints *(Chall, 1983)*
Stage 5: Construction & Reconstruction *(Chall, 1983)*
Proficient Adult Reading *(Spear-Swerling & Sternberg, 1997)*

readers may call out the name of a favorite fast food restaurant when they recognize its logo, but they are not systematic in their use of any particular cue.

During the emergent stage, children lack an understanding of the alphabetic principle or show only the beginning of this understanding. Ehri (1997) designated this as the **prealphabetic phase;** children's use of logos led Frith (1985) to name it the logographic stage. Juel (1991) uses the term selective cue to describe how children select nonalphabetic visual cues like the two *o*s in *look* to remember a word.

During the emergent stage, children can become quite attached to selected letters that they notice in their names. On entering preschool, Lee realized that other children's names on their cubbies had some of the same letters that were in her name. Perplexed and somewhat annoyed, she pointed to one of the letters also in her name. "Hey, that's MY letter!" she insisted. Children in the emergent stage also begin to see some letters from their names in environmental print. Walking around the grocery store, Lee pointed to the box of Cheer detergent and said, "Look, Mommy! There's my name!" Lee's special relationship with the letters in her name is a living embodiment of the prealphabetic, logographic, and selective-cue strategy these researchers describe.

Beginning Readers

Understanding the alphabetic nature of our language is a major hurdle for readers and spellers. The child who writes *light* as LT has made a quantum conceptual leap, having grasped that there are systematic matches between sounds and letters that must be made when writing. The early letter name–alphabetic speller has moved from pretend reading to the beginning of real reading, starting to use systematic letter–sound matches to identify and store words in memory.

Just as early attempts to spell words are partial, so too beginning readers initially have limited knowledge of letter sounds as they identify words by phonetic cues. Ehri (1997) describes these readers and writers as being in the **partial alphabetic phase.** The kinds of reading errors students make during this phase offer insights into what they understand about print. Using context as well as partial consonant cues, a child reading about good things to eat might substitute *candy* or even *cookie* for *cake* in the sentence, "The cake was good." Readers in this stage require much support in the form of predictable, memorable texts.

As readers and writers acquire more complete knowledge of letter sounds in the later part of the letter name–alphabetic stage, they will include, but often confuse, vowels in the words they write and read. Students who spell BAD for *bed* may make similar vowel errors when they read *hid* as *had* in "I hid the last cookie." These students resemble Ehri's (1997) **full alphabetic** readers who begin to use the entire letter string to decode and store sight words. Nevertheless, the reading of letter name–alphabetic spellers is often disfluent—that is, choppy and often word by word, unless they have read the passage before or are otherwise familiar with it (Bear, 1992). If you ask such spellers to read silently, the best they can do is to whisper. They need to read aloud to vocalize the letter sounds and usually fingerpoint as they read.

Readers in this stage continue to benefit from repeated readings of predictable texts, but also from the reading of text with many phonetically regular words. These "decodable" texts support the development of decoding strategies and the acquisition of sight words (Juel & Roper-Schneider, 1985; Mesmer, 2006). Chall (1983) referred to this stage as a period of *initial reading and decoding* when students are "glued to print."

Transitional Readers

Transitional readers and spellers move into the within word pattern spelling stage when single letter–sound units are consolidated into patterns or larger chunks and the spellings of most consonant digraphs and blends are internalized. Longitudinal research on spelling development has identified the progressive order in which students appear to use these larger chunks. After mastering basic letter sounds in the **onset** position (initial consonants, consonant blends, and consonant digraphs), students focus on the vowel and what follows (Ganske, 1994; Invernizzi, 1992; Viise, 1996; White, 2005). The spellings of short vowel **rimes**—the vowel sound and what follows in a single syllable—are learned first with consonants and consonant blends in the context of simple **word families** or **phonograms** such as *h-at*, *ch-at*, or *fl-at*. Phonogram chunks such as *at* come relatively easily in the letter name–alphabetic stage, probably as a result of their frequency in one-syllable words. Other stage models of reading acquisition describe this chunking phenomenon as an orthographic stage in which readers use progressively higher-order units of word structures to read and spell (Chall, 1983; Frith, 1985; Gibson, 1965). Ehri and McCormick (1998) call this the **consolidated alphabetic phase,** in which students' reading is supported by familiarity with frequently occurring letter pattern units. Having solidified the rime/phonogram unit as a chunk, however, students still use but confuse the various long vowel patterns of English (Invernizzi, 1992).

From the beginning to the end of this stage, students move from needing support materials and techniques to being able to pick from various texts and reading them independently—from the Sunday comics to easy chapter books such as *Freckle Juice* and *Superfudge*, both by Judy Blume, and *Ramona the Pest*, by Beverly Cleary. With easy, **independent-leve**l material, students stop fingerpointing and, for the first time, begin to read silently (Bear, 1982; Henderson, 1990).

Their reading moves from halting word-by-word reading to more expressive phrasal reading, and they can read fluently at their instructional level (Zutell & Rasinski, 1989).

During this stage, students integrate the knowledge and skills acquired in the previous two stages, as Chall (1983) describes by calling this stage one of confirmation and fluency. Advances in word knowledge affect students' writing, too. Their sizable sight word vocabulary allows them to write more quickly and with greater detail. Writing and reading speeds increase significantly from the beginning letter name–alphabetic stage to the transitional within word pattern stage (Bear, 1992; Invernizzi, 1992).

Intermediate and Advanced Readers

The stages of word knowledge that characterize intermediate readers and advanced readers are called *syllables and affixes* and *derivational relations*, as shown in Figure 1.13. These two periods of literacy development are generally accompanied by increased abilities to solve abstract problems and to reflect metacognitively on experiences. Students at these stages have relatively automatic word recognition, leaving their minds free to think as rapidly as they can read. They use reading as a vehicle for learning new information from texts, and their vocabulary grows with their reading experience. Intermediate and advanced readers are also fluent writers. The content of their writing often displays complex analysis and interpretation, reflecting a more sophisticated, content-oriented vocabulary. The degree to which they write at this level, however, often depends on the quality of the writing instruction they receive.

Intermediate students read most texts with good accuracy and speed, both orally and silently. For these students, success in reading and understanding is related to familiarity and experience with the topic being discussed. Through plenty of practice, students in this intermediate stage acquire a repertoire of reading styles that reflects their experience with different genres. They may obsess about reading fantasy or historical fiction and voraciously consume all of the books in a series, such as the Harry Potter books by J. K. Rowling or the His Dark Materials series by Philip Pullman. The same is true for writing. Intermediate students may focus on a particular type of writing: persuasive essays, editorials, poetry, or their own versions of fantasy or realistic fiction.

Advanced readers have a broader experience base that allows them to choose from a variety of reading styles to suit the text and their purposes for reading. They read according to their own interests and needs and seek to integrate their knowledge with the knowledge of others. The same picture is evidenced in their writing. With purpose and practice, derivational relations students develop and master a variety of writing styles.
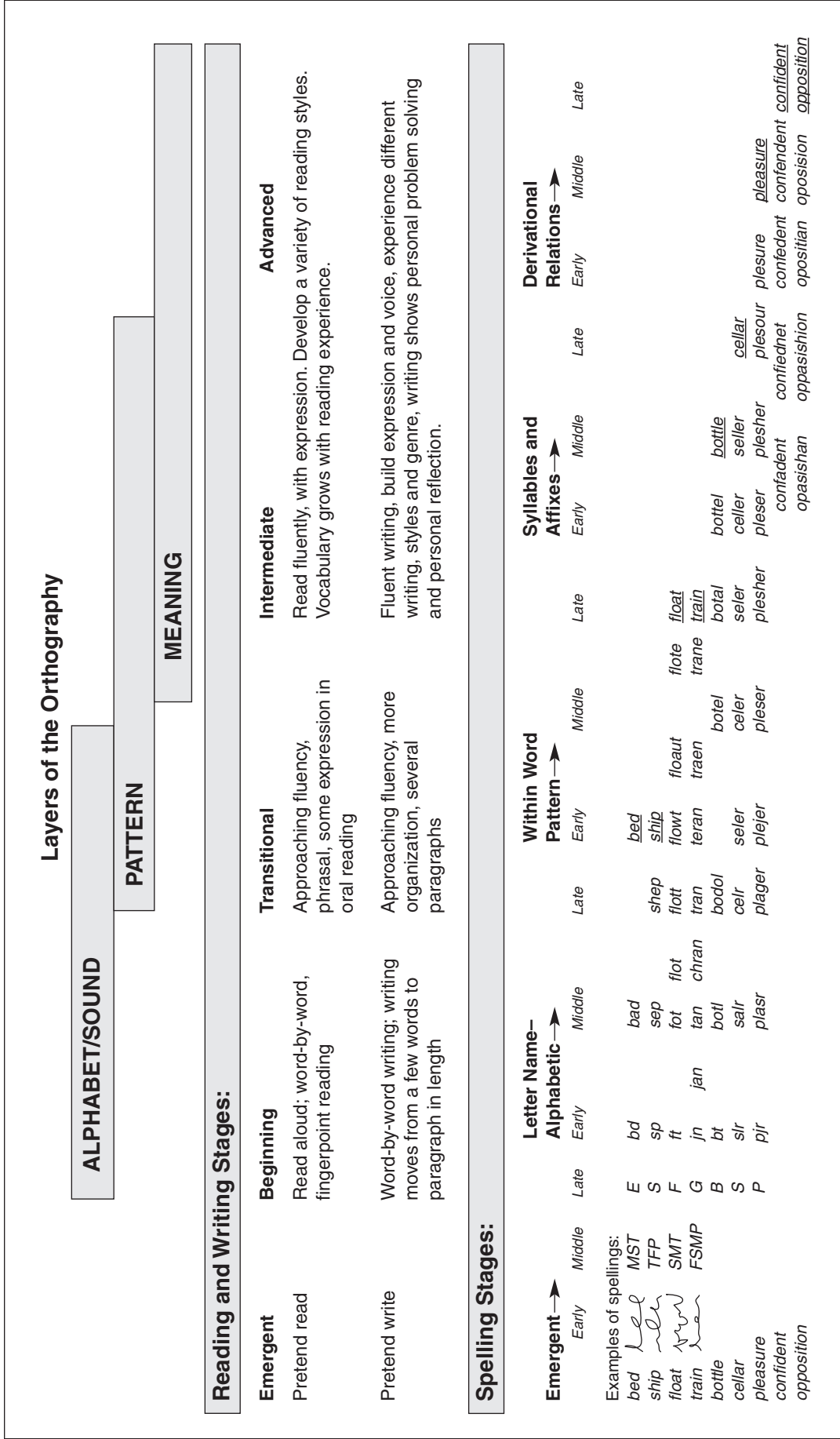
These two stages of word knowledge correspond roughly to Chall's (1983) *multiple viewpoints* and *construction and reconstruction* stages. Others refer to this period as one during which students learn to become *strategic readers* and ultimately become *proficient adult readers* (Spear-Swerling & Sternberg, 1997). Still others lump these two stages of reading together as the *automatic* stage (Gough & Hillinger, 1980), even though much is still not automatic. For example, syllables and affixes spellers may be uncertain about how to pronounce the name of the main character in *Caddie Woodlawn*, sometimes calling her "Cadie." Derivational relations spellers may have seen the word *segue* in print but never have heard it pronounced, and read it as *seck* or *seck-que*.

Vocabulary and word use play a central role in the connections that intermediate and advanced readers forge between reading and writing. From adolescence on, most of the new vocabulary students learn—except perhaps for slang—comes from reading and reflects new domains of content-specific knowledge that students explore (Beck, McKeown, & Kucan, 2002; Zwiers, 2008). Studying spelling–meaning connections is central to maximizing this vocabulary growth (Nunes & Bryant, 2006; Templeton, 2004).

Research to Support the Synchrony of Spelling and Reading

Significant correlations between spelling and various measures of word recognition and decoding have been reported. For example, Ehri (2000b) reviewed six correlational studies in

FIGURE 1.13 The Synchrony of Literacy Development

Layers of the Orthography

ALPHABET/SOUND

PATTERN

MEANING

Reading and Writing Stages:

	Emergent	Beginning	Transitional	Intermediate	Advanced
Pretend read		Read aloud; word-by-word, fingerpoint reading	Approaching fluency, phrasal, some expression in oral reading	Read fluently, with expression. Develop a variety of reading styles. Vocabulary grows with reading experience.	
Pretend write		Word-by-word writing; writing moves from a few words to paragraph in length	Approaching fluency, more organization, several paragraphs	Fluent writing, build expression and voice, experience different writing, styles and genre, writing shows personal problem solving and personal reflection.	

Spelling Stages:

	Emergent →			Letter Name— Alphabetic →			Within Word Pattern →			Syllables and Affixes →			Derivational Relations →		
	Early	Middle	Late	Early	Middle	Late	Early	Middle	Late	Early	Middle	Late	Early	Middle	Late

Examples of spellings:

Word	Emergent Early	Emergent Middle	Emergent Late	LN Early	LN Middle	LN Late	WW Early	WW Middle	WW Late	Syll. Early	Syll. Middle	Syll. Late	Deriv. Early	Deriv. Middle	Deriv. Late
bed	*(drawing)*	MST	E	bd	bad	flot	*bed*								
ship	*(drawing)*	TFP	S	sp	sep	chran	*ship*								
float	*(drawing)*	SMT	F	ft	fot		flowt	floaut	flote	*float*					
train	*(drawing)*	FSMP	G	jn	tan	jan	teran	traen	trane	*train*					
bottle			B	bt	botl			botel	botal	bottel	*bottle*				
cellar			S	slr	salr		seler	celer	seler	celler	seller	*cellar*			
pleasure			P	pjr	plasr		plejer	pleser	plesher	pleser	plesher	plesour	plesure	*pleasure*	
confident										confadent	*confident*	confiednet	confendent	*confident*	
opposition										opasishan	opasishan	oppasishion	opositian	oposision	*opposition*

which students of various ages (first grade through college) were asked to read and spell words. These studies reported correlations ranging from .68 to .86.

In other studies, spelling measures have accounted for as much as 40 to 60 percent of the variance in oral reading measures (Zutell, 1992; Zutell & Rasinki, 1989). Intervention studies exploring the added value of supplemental spelling instruction have repeatedly found better performance on reading tasks such as oral reading, silent reading comprehension, and other reading-related measures in addition to spelling (Bear & Smith, 2009; Berninger et al., 1998; Goulandris, 1992; Graham, Harris, & Chorzempa, 2002; Joseph & Schisler, 2009; McCandliss, Beck, Sandak, & Perfetti, 2003; Torgesen, 2004; Vellutino, Scanlon, Small, & Fanuele, 2006). Notably, Perfetti (1997) observed that practice at spelling helps reading more than practice at reading helps spelling.

Students' spelling attempts also provide a powerful medium for predicting reading achievement (Cataldo & Ellis, 1988). Morris and Perney (1984) found that first-graders' invented spellings were a better predictor of end-of-grade reading than a standardized reading readiness test. In a two-year study following students from first through third grade, Ellis and Cataldo (1992) indicated spelling to be the most consistent predictor of reading achievement. Sawyer et al. (1997) reported that a child's score on a developmental spelling inventory (Ganske, 1999) was a more powerful predictor of decoding than phonemic awareness tasks such as segmentation. Moreover, the spelling inventory identified the exact word elements students had already mastered and those currently under negotiation. Thus, establishing levels of development in spelling and reading has enormous potential for guiding instruction.

....

Integrated Phonics, Spelling, and Reading Instruction

Henderson (1981) devised the concept of word study because he was convinced that understanding how children learn to spell words could also provide insight on how they read them. He believed that children's growing word knowledge encompasses information about *phonology* or sound, *syntax* or grammatical relationships and word order, *semantics* or meaning, and *orthography*. He believed that categorizing written words through **word sorts, word hunts,** and **writing sorts** enables learners to sort out the relationships between these different types of information. His work, and the work of his colleagues and students, demonstrated that written word knowledge is developmental and advances progressively and in synchrony in relation to cognitive development, exposure to print, and instruction.

Research by other investigators over the last several years has confirmed that the development of word knowledge follows a developmental continuum. A debate continues, however, regarding the degree to which this development may be described in terms of developmental stages or phases (Chliounaki & Bryant, 2007; Conrad, 2008; Deacon, Conrad, & Pacton, 2008; Sharp, Sinatra, & Reynolds, 2008; Templeton, 2003). Yet there is agreement on the fundamental observation that learning the conventional spellings of words in the English language and the processes that determine conventional spelling occur over the course of the school years. This knowledge evolves from productions first at the alphabetic level, then the pattern level, and eventually includes spelling–meaning or morphological relationships (Berninger, Abbott, Nagy, & Carlisle, 2009; Ehri, 2005; Ehri & McCormick, 2004; Nunes & Bryant, 2009; Reed, 2008; Templeton & Bear, 1992).

As you saw on page 19, Figure 1.13 presents an integrated model of how reading, writing, and spelling progress in synchrony. In parent–teacher conferences, teachers often refer to this figure when they discuss a student's development. They explain to the parent how the child's spelling level corresponds to her reading level, as well as the types of writing we may expect from a child at that particular **developmental level.**

Word study activities in this book are organized around this model. Chapter 2 will help you identify your students by the stages of reading, writing, and spelling. You will then know which chapters contain the activities that are most relevant to their development, as shown in Figure 1.5 on page 9.

As described throughout this chapter, developmental spelling theory provides a window through which we can discern a child's knowledge of how written words work. Specific kinds of spelling errors at particular levels of orthographic knowledge reflect learners' developing understanding of word elements that determines how quickly they can read words and how easily they can write them. Insight into students' conceptual understanding of these word elements will help you better guide and support your students as they learn to read and spell. Figure 1.14 illustrates the theory of developmental word knowledge and shows how word study links reading and writing.

FIGURE 1.14 Word Study: Reading and Writing
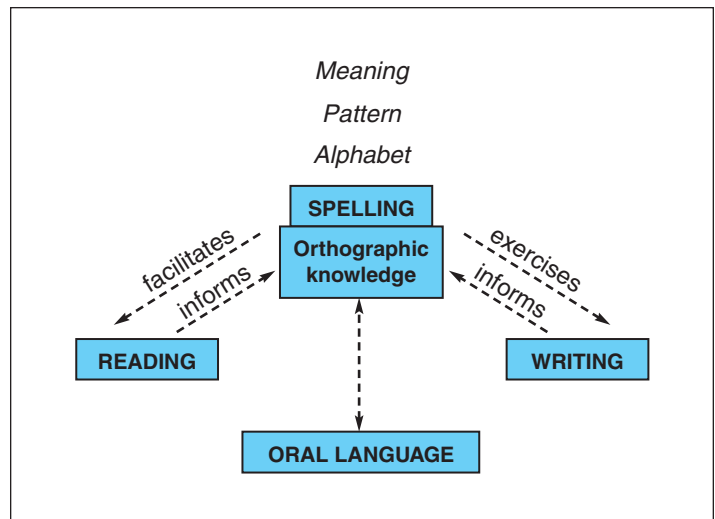
Where Do I Begin Word Study?

Students acquire word knowledge implicitly as they read and write and also through explicit instruction orchestrated by the teacher. It is impossible to know exactly what to teach and when to teach it, however, until we have a living child before us. An informed interpretation of students' reading and writing attempts shows us which words they can read and spell, and of those, which they might learn more about. There is more to pacing instruction than plugging students into a sequence of phonics or spelling features. Instructional *pacing* must be synonymous with instructional *placing*. That is, we must fit our instruction to what our students are using but confusing. How do we know what they are using but confusing? A good deal of what students understand about orthography is revealed in their uncorrected writing. Using the spelling inventories described in the next chapter as a guide, you will be able to place students and pace the content of word study instruction for phonics, spelling, and vocabulary.

Words Their Way

To help students explore and learn about words their way, instruction must be sensitive to two fundamental tenets:

1. Students' learning of phonics, spelling, and vocabulary is based on their developmental or instructional level.
2. Students' learning is based on the way they are naturally inclined to learn: through comparing and contrasting word features and discovering consistencies.

When these two tenets are honored, students learn *their* way—building from what is known about words to what is new. Rather than rote memorization activities designed only to ensure repeated mechanical practice, word study encourages active exploration and examination of word features that are within a student's stage of literacy development. Word study is active, and by making judgments about words and sorting words according to similar features, students construct their own understandings about how the features work. Active, thoughtful practice helps students internalize word features and become automatic in using what they have learned.

Figure 1.15 summarizes the characteristics of each stage of development to help you understand the reading and writing context for the word study instruction that is appropriate for each stage. After learning in Chapter 2 how to assess the developmental word knowledge of your students, the remaining chapters offer more detail about planning word study instruction for each stage of development.

FIGURE 1.15 Developmental Stages, Characteristics, and Word Study Instruction

I. EMERGENT STAGE—CHAPTER 4

Characteristics
1. Scribbles letters and numbers
2. Lacks concept of word
3. Lacks letter–sound correspondence or represents most salient sound with single letters
4. Pretends to read and write

Reading and Writing Activities
1. Read to students and encourage oral language activities
2. Model writing using dictations and charts
3. Encourage pretend reading and writing

Word Study Focus
1. Develop oral language with concept sorts
2. Play with speech sounds to develop phonological awareness
3. Plan activities to learn the alphabet
4. Sort pictures by beginning sound
5. Encourage fingerpoint memory reading of rhymes, dictations, and simple pattern books
6. Encourage invented spelling

II. LETTER NAME–ALPHABETIC STAGE—CHAPTER 5

EARLY LETTER NAME–ALPHABETIC

Characteristics
1. Represents beginning and ending sounds
2. Uses letter names to invent spellings
3. Has rudimentary or functional concept of word
4. Reads word by word in beginning reading materials

Reading and Writing Activities
1. Read to students and encourage oral language activities
2. Secure concept of word by plenty of reading in predictable books, dictations, and simple rhymes
3. Record and reread individual dictations
4. Label pictures and write in journals regularly

Word Study Focus
1. Collect known words for word bank
2. Sort pictures and words by beginning sounds
3. Study word families that share a common vowel
4. Study beginning consonant blends and digraphs
5. Encourage invented spelling

MIDDLE TO LATE LETTER NAME–ALPHABETIC STAGE

Characteristics
1. Correctly spells initial and final consonants and some blends and digraphs
2. Uses letter names to spell vowel sounds
3. Spells phonetically, representing all salient sounds in a one-to-one, linear fashion
4. Omits most silent letters and preconsonantal nasals in spelling (*bop* or *bup* for *bump*)
5. Fingerpoints accurately and can self-correct when off track
6. Reads aloud slowly in a word-by-word manner

Reading and Writing Activities
1. Read to students
2. Encourage invented spellings in independent writing, but hold students accountable for features and words they have studied
3. Collect two- to three-paragraph dictations that are reread regularly
4. Encourage more expansive writing and consider some simple editing procedures for punctuation and high-frequency words

Word Study Focus
1. Sort pictures and words by different short vowel word families
2. Sort pictures and words by short vowel sounds and CVC patterns
3. Continue to examine more difficult consonant blends with pictures and words
4. Study preconsonantal nasals and digraphs at ends of words
5. Sort pictures comparing short and long vowel sounds
6. Collect known words for word bank (up to 200)

III. WITHIN WORD PATTERN STAGE—CHAPTER 6

Characteristics
1. Spells most single-syllable short vowel words correctly
2. Spells most beginning consonant digraphs and two-letter consonant blends
3. Attempts to use silent long vowel markers
4. Reads silently and with more fluency and expression
5. Writes more fluently and in extended fashion
6. Can revise and edit

FIGURE 1.15 Continued

Reading and Writing Activities
1. Continue to read aloud to students
2. Guide silent reading of simple chapter books
3. Write each day, writers' workshops, conferencing, and publication

Word Study Focus
1. Complete daily activities in word study notebook
2. Sort words by long and short vowel sounds and by common long vowel patterns
3. Compare words with *r*-influenced vowels
4. Explore less common vowels, diphthongs (*oi, oy*), and other ambiguous vowels (*ou, au, ow, oo*)
5. Examine triple blends and complex consonant units such as *thr, str, dge, tch, ck*
6. Explore homographs and homophones

IV. SYLLABLES AND AFFIXES—CHAPTER 7
Characteristics
1. Spells most single-syllable words correctly
2. Makes errors at syllable juncture and in unaccented syllables
3. Reads with good fluency and expression
4. Reads faster silently than orally
5. Writes responses that are sophisticated and critical

Reading and Writing Activities
1. Plan read-alouds and literature discussions
2. Include self-selected or assigned silent reading of novels from different genres
3. Begin simple notetaking and outlining skills, and work with adjusting reading rates for different purposes
4. Explore reading and writing styles and genres

Word Study Focus
1. Examine plural endings
2. Study compound words
3. Study consonant doubling and inflectional endings
4. Study open and closed syllables and other syllable juncture issues
5. Explore syllable stress and vowel patterns in the accented syllable, especially ambiguous vowels
6. Focus on unaccented syllables such as *er* and *le*
7. Explore unusual consonant blends and digraphs (*qu, ph, gh, gu*)

8. Study base words and affixes
9. Focus on two-syllable homophones and homographs
10. Join spelling and vocabulary studies; link meaning and spelling with grammar and meaning
11. Explore grammar through word study
12. Sort and study common affixes (prefixes and suffixes)
13. Study stress or accent in two-syllable words

V. DERIVATIONAL RELATIONS—CHAPTER 8
Characteristics
1. Has mastered high-frequency words
2. Makes errors on low-frequency multisyllabic words derived from Latin and Greek
3. Reads with good fluency and expression
4. Reads faster silently than orally
5. Writes responses that are sophisticated and critical

Reading and Writing Activities
1. Include silent reading and writing, exploring various genres
2. Develop study skills, including textbook reading, notetaking, adjusting rates, test taking, report writing, and reference work
3. Focus on literary analysis

Word Study Focus
1. Focus on words that students bring to word study from their reading and writing
2. Join spelling and vocabulary studies; link meaning and spelling with grammar and meaning
3. Examine common and then less common roots, prefixes, and suffixes (e.g., *ion*)
4. Examine vowel and consonant alternations in derivationally related pairs
5. Study Greek and Latin word roots and stems
6. Focus on abstract Latin suffixes (*ence/ance; ible/able; ent/ant*)
7. Learn about absorbed or assimilated prefixes
8. Explore etymology, especially in the content areas
9. Examine content-related foreign borrowings