Phases of Word Learning: 
Implications for Instruction With 
Delayed and Disabled Readers

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During the last 20 years, many researchers have conducted studies to understand how children learn to read. The focus of their research has been on the cognitive and linguistic processes that are central to the development of reading ability rather than on methods of instruction (Adams, 1990; Gough, Ehri, & Treiman, 1992). It is important to distinguish between learner processes and teacher methods, because very often these are confused. For example, some educators interpret phonics to mean worksheets or skill and drill; in other words, a method of instruction. To other educators, however, this term refers to the graphophonic knowledge and decoding procedures that beginners must acquire to become competent readers. Many methods of instruction besides worksheets and skill and drill can promote the acquisition of these reading processes. The present article explains the processes that students acquire in learning to read and then considers their implications for instruction.

In portraying the course of acquisition of reading processes suggested by research findings, various schemes have been proposed for distinguishing stages or phases of development through which all readers pass on their way from pre-reading to skilled reading (e.g., Chall, 1983; Ehri, 1987, 1991, 1994; Ehri & Wilce, 1985, 1987a; Frith, 1985; Goswami, 1986, 1988; Gough & Hillinger, 1980; Juel, 1983, 1991; Juel, Griffith, & Gough, 1985; Mason, 1980; Soderbergh, 1977; Stuart & Coltheart, 1988). Of interest in the present article are schemes that portray the development of word-reading processes and their instructional implications for students who have word-identification difficulties.

Information about word-learning processes can assist teachers of problem readers in several ways. First, it can help them understand and interpret the word-reading behaviors they see in delayed and disabled readers. Behaviors that might be regarded as bizarre, atypical reactions to print are in most cases just behaviors that typify less-mature readers who are at an earlier phase of development. Information about development can help to clarify the reading processes used by students in a particular phase and also the constraints that limit their word learning.

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Second, information about word-learning processes can clarify the locus of difficulties that students have in learning to read words. Various studies have indicated that some students, called delayed readers, take longer to learn to read because of absence from school or lack of adequate instruction. Other students, referred to as disabled readers, are thought to possess a processing deficiency that makes it harder to learn to read. These deficits may involve greater difficulty in processing words phonologically or slower processing speeds (Bowers & Wolf, 1993; Wimmer, 1993). Both types impede the word-learning processes described below, making explicit instruction and practice much more important for acquiring reading competence.

Third, information about phases of development can help teachers determine how to support, scaffold, and guide their students to the next phase. Too often, instruction in word identification is unsuccessful with problem readers because it requires capabilities that students have not yet acquired. Taking account of the properties of word-learning processes at each phase helps to ensure that instruction does have utility for learners. Recognizing signs of progress, or lack of it, in learners can help teachers decide whether their teaching techniques are working or whether a different approach might better address a learner's difficulties. Space does not allow us to consider the variety of techniques that teachers might use with problem readers and how these techniques relate to phases of development. However, if teachers understand the processes to be cultivated at each phase, they have a basis for judging whether a teaching technique might work in a particular instance. As teachers gain experience relating their methods of instruction to students’ phases of development, they will become more skilled at this trouble-shooting, problem-solving approach to reading instruction (Ehri & Williams, 1996).

Ways to Read Words
Before describing the phases of development, it is important to characterize the various ways that words might be read by mature readers (Ehri, 1991, 1994, 1995). A goal of instruction is to enable readers to read words in all of the following ways:

1. Decoding. Words can be read by applying decoding or word-attack strategies. A decoding strategy enables readers to read words that are unfamiliar in print. Decoding involves identifying the sounds of individual letters, holding them in mind, and blending them into pronunciations that are recognized as real words. A more mature form of decoding that requires more alphabetic knowledge is to pronounce and blend familiar clusters of letters, such as phonograms, common affixes, syllables, and spelling patterns. In English, this strategy works sometimes, but not always. It is more effective when combined with other strategies.

2. Analogy. Another way to attack unfamiliar words is to read them by analogy, that is, by recognizing how the spelling of an unfamiliar word is similar to a word already known. To analogize, readers access the known word
in memory and then adjust the pronunciation to accommodate the new word, for example, reading *fountain* by analogy to *mountain* (Gaskins et al., 1988; Goswami, 1986).

3. Prediction. A third way to attack unknown words is to guess what the words might be by using initial letters in the words, preceding and succeeding words in the text, or context cues such as pictures (Goodman, 1976). Prediction, however, does not explain how most words in text are read because most words, particularly content words, cannot be guessed very accurately (Gough & Walsh, 1991).

4. Sight. A very different way to read words is by sight, which involves using memory to read words that have been read before. Sight of the word immediately activates its spelling, pronunciation, and meaning in memory. When sight words are known well enough, readers can recognize their pronunciations and meanings automatically, without expending any attention or effort figuring out the word (LaBerge & Samuels, 1974). This property makes sight-word reading especially valuable for text reading because it allows word-reading processes to operate unobtrusively, with the reader’s attention focused on the meaning of print.

It is important to understand what sight-word learning involves because recent findings have challenged traditional views (Ehri, 1992). To account for sight-word learning, we must explain how readers are able to look at printed words they have read before and recognize those specific words while bypassing thousands of other words also stored in memory, including words with very similar spellings or meanings. Moreover, we must explain how readers are able to store and remember new words easily after reading them only a few times. The kind of process we have found to be at the heart of sight-word learning is a connection-forming process. Connections are formed that link the written forms of words to their pronunciations and meanings. This information is stored in the reader’s mental dictionary or lexicon.

What kinds of connections are formed to store sight words in memory? The traditional view holds that readers memorize connections between the visual shapes of words and their meanings. However, Ehri’s (1992) work suggests that this view is incorrect. Her findings indicate that readers learn sight words by forming connections between graphemes in the spellings and phonemes underlying the pronunciations of individual words. The connections are formed out of readers’ general knowledge of grapheme–phoneme correspondences that recur in many words. Graphemes are the functional letter units symbolizing phonemes. Phonemes are the smallest units of “sound” in words. Readers look at the spelling of a particular word, pronounce the word, and apply their graphophonic knowledge to analyze how letters symbolize individual phonemes detectable in the word’s pronunciation. This secures the sight word in memory.

Figure 1 reveals how beginners might analyze several different words to secure them as sight words in memory. In this figure, uppercase letters designate
spellings, lowercase letters between slashes indicate phonemes, and lines linking letters to phonemes indicate connections. To secure sight words in memory in this way, readers must possess alphabetic knowledge, including letter shapes, how to segment pronunciations into phonemes, and which graphemes typically symbolize which phonemes (Ehri, 1997).

The process of forming connections allows readers to remember how to read not only words containing conventional letter–sound correspondences but also words that have less regular spellings. Connections that might be formed to remember irregular words are included in Figure 1. Note that the same types of connections are evident. In fact, most of the letters in irregular words conform to grapheme–phoneme conventions. In remembering letters that do not correspond to phonemes, readers may remember them as extra visual forms, or they may flag them as silent in memory, or they may remember a special spelling pronunciation.

| Figure 1. Connections Formed in Memory Between Graphemes and Phonemes in Specific Words Learned by Sight |
|---------------------------------|---------------------------------|
| **B E D** | **C A L* F** |
| /b/ /e/ /d/ | /k/ /a/ /l/ |
| **B L O C K** | **C O M B** |
| /b/ /l/ /o/ /k/ | /k/ /o/ /m/ |
| **S M I L E*** | **Y A C H* T** |
| /s/ /m/ /l/ /e/ | /y/ /a/ /t/ |
| **B U M P** | **T O N G U E*** |
| /b/ /u/ /m/ /p/ | /t/ /o/ /n/ |
| **S H I P** | **L I S T* E N** |
| /s/ /i/ | /l/ /s/ /t/ |
| **F L O A T** | **B R I G H T** |
| /f/ /l/ /o/ | /b/ /r/ /i/ |
| **C A T L E** | **S H I P** |
| /k/ /a/ /t/ /l/ | /s/ /ı/ /p/ /ı/ /s/ /n/ |

Uppercase letters indicate graphemes, lowercase letters between slashes indicate phonemes, lines indicate graphophonic connections, asterisks indicate unpronounced letters.
that includes the silent letter—for example, remembering *listen* as “lis-ten” or *chocolate* as “choc-o-late.” Or they may see them as part of a larger spelling pattern, for example, the gh in -ight.

Spellings of words are like maps that visually lay out their phonological forms. Skilled readers are able to compute these mapping relations very quickly when they read words. Knowledge of letter–sound relations provides a powerful mnemonic system that bonds the written forms of specific words to their pronunciations in memory. When readers acquire working knowledge of the alphabetic spelling system, they can build a lexicon of sight words easily as they encounter new words in their reading (Ehri, 1992).

To explain the development of word-reading ability, we need to take account of these various ways to read practiced and unpracticed words—by decoding, by analogizing, by predicting, and by sight—and to specify how these processes are acquired.

**Phases of Word Learning**

Researchers have applied different terminology to describe stages or phases of development. In this piece we borrow from Ehri’s (1991, 1994, 1995) scheme to distinguish five phases of word learning. Each phase is characterized by learners’ understanding and use of the alphabetic system in their word reading. The five phases are (1) the pre-alphabetic phase, (2) the partial-alphabetic phase, (3) the full-alphabetic phase, (4) the consolidated-alphabetic phase, and (5) the automatic-alphabetic phase. We prefer the concept of phase, which is a less-stringent way to characterize periods of development than the concept of stage. One phase may overlap with the next phase, and mastery of one phase may or may not be a prerequisite for movement to the next. Each phase highlights a characteristic of word learning that becomes prominent.

To give an overview, the pre-alphabetic phase characterizes preschoolers and older severely disabled readers who have little working knowledge of the alphabetic system. The partial-alphabetic phase characterizes kindergartners, first graders, and older disabled readers who have rudimentary working knowledge of the alphabetic system but lack full knowledge, particularly vowel knowledge. The full-alphabetic phase characterizes students in first grade and beyond who have working knowledge of the major grapheme–phoneme units in English. The consolidated-alphabetic phase characterizes students, usually in second grade and beyond, who possess working knowledge of the major graphophonic relations, who have used this knowledge to build a sizable sight vocabulary, and who as a result have learned how to decode commonly recurring letter patterns as units. Their reading is faster and more fluent. The automatic-alphabetic phase characterizes mature readers who recognize most words in text automatically by sight and who are facile if not automatic in applying the various strategies to attack unfamiliar words.
**Pre-Alphabetic Phase**

The first phase is called *pre-alphabetic* because alphabetic knowledge is not used to read words. Children at this phase have very limited knowledge of letters, and they do not understand that letters in written words map onto sounds in oral language. Pre-alphabetic readers are limited to sight-word reading, that is, reading words from memory, and to guessing words from context. They have no ability to decode words or to analogize because they lack any working knowledge of the alphabetic system.

This phase has been called the *selective-cue* stage (Juel, 1991) because children attend to selected cues in remembering how to read words. It has been labeled the *paired-associate* stage (Gough & Hillinger, 1980) to denote that arbitrarily chosen associations are formed to link some feature of a written word to its spoken form or meaning. It has also been termed the *logographic* phase (Ehri, 1991; Frith, 1985) because readers focus on nonalphabetic graphic features of words that have nothing to do with sounds in the words—for example, the length of the word or its shape.

The following word-reading behaviors are in evidence during the prealphabetic phase of development (Ehri, 1987, 1991, 1994; Ehri & Wilce, 1985; Gough & Hillinger, 1980; Juel et al., 1985; Soderbergh, 1977):

1. Children may read words that they encounter frequently in their environment, for example, *stop*, *Burger King*, *Pepsi*, *milk*. However, when environmental cues such as logos and distinctive print are removed and the word is presented by itself, children can no longer read it (Mason, 1980). If a trick is played by showing children familiar words in their environment with one letter altered—for example, changing the *p* to an *x* on a can of *Xepsi*—children fail to detect the change and read the print as *Pepsi* (Masonheimer, Drum, & Ehri, 1984). This indicates that children “read the environment” rather than the print. They remember nonalphabetic visual cues rather than letters. This has been called *visual cue reading* (Ehri & Wilce, 1985).

2. Children have trouble learning to read words that are written without any context clues such as pictures or logos. With practice they may learn some words, but the words are quickly forgotten (Mason, 1980). This is because the associations formed are arbitrary and hard to hold in memory. When students remember how to read words, they use visual cues and rote learning. Bits of the word, such as its length or shape, or other gross cues, are selected rather than the sequence of letters.

3. Students may select meaning-bearing cues in remembering how to read words, for example, remembering the word *look* because it has two “eyes” in the middle. This makes it easier to remember the word. However, because letters are not linked to sounds in memory, the letters do not constrain how the meaning is labeled. As a result, the student may read it as *see* rather than *look*. Another problem is that similarly spelled words, such as *book*, *moon*, and *tool*, may also be mistaken as the same word. Because
meaning-bearing cues are absent in most words, this is not effective for building a sight vocabulary. Teachers who have observed delayed and disabled readers produce misreadings such as these, which are way off base, have attributed them to cognitive processing difficulties. However, there is a simpler explanation. The students are pre-alphabetic–phase readers. The only cues they have available for remembering how to read words are nonphonetic, visual cues.

4. Connected text cannot be read independently; however, readers may “pretend read” text that they have heard several times and memorized.

5. The strategy of guessing from context cues is used to read words. For example, students who see a picture of a Ford convertible may read the written word wheels printed beneath it as car. Letters exert little influence on the word that is guessed because students lack knowledge of letter–sound relations.

The pre-alphabetic phase of word learning is typical in preschool and kindergarten. The most telling sign that students are in this phase is their lack of letter knowledge. Children who know few letter names or sounds are shut off from reading words alphabetically, so by default they process words as strictly visual forms. Another telling sign is lack of awareness of constituent sounds in words.

When behaviors indicative of this phase are present in older students, these learners may be labeled nonreaders, severely delayed readers, or severely disabled readers (McCormick, 1994). Instruction is needed to help them become alphabetic readers of print. Basically, they need to acquire letter knowledge and phonemic awareness, and they need to engage in activities that strengthen this knowledge and incorporate it into their literacy activities.

To ensure that letter use is possible, students need to learn both lowercase and uppercase letters. Practice should include opportunities to print as well as name the letters because this improves letter-recognition learning (Adams, 1990). Accurate, immediate letter-name recognition is one of the best predictors of success in learning to read (Biemiller, 1977/1978; Blachman, 1984; Chall, 1967; Share, Jorm, Maclean, & Matthews, 1984).

Studying letters in words is important. When teachers detect students focusing on unprofitable cues, their focus should be redirected. For example, when Jim says, “I know that word is look because it has eyes,” the teacher can say, “Yes, it has two letter os in the middle. Now, can you name the letters of this word?” Scott and Ehri (1989) found that having novice beginners count or name letters in words helped them remember how to read the words. Many of the letter names contain relevant sounds (e.g., /s/ in ess, /t/ in tee, /m/ in em, but not /y/ in wie), so students who know names can use this knowledge to discover relations between letters they see in spellings of words and sounds they detect in the word pronunciations (Ehri, 1986, 1987).

Teaching phonemic awareness to students, that is, awareness that spoken words are made up of separate sounds, also is important in moving them to the
next phase. Phonemic awareness is a crucial precursor to the development of skill in processing grapheme-phoneme relations in words (Juel, Griffith, & Gough, 1986; Share et al., 1984). Many studies have indicated that a deficiency in phonemic awareness is a principal cause of word-identification difficulties (e.g., see Pratt & Brady, 1988). Several tasks to assess the extent of beginners’ phonemic awareness have been identified: saying the first and final sounds in words, counting the number of sounds in short words, listening to a sequence of two to three sounds and blending them to form a word, identifying different words with the same initial or final sounds, and removing the first or final sound from a word and saying what remains (e.g., see Stahl & Murray, 1994).

If phonemic awareness is weak in a pre-alphabetic-phase reader, there are many research-based activities that can be used to train students in these important understandings (e.g., Ball & Blachman, 1991; Griffith & Olson, 1992). Gamelike listening and sound manipulation activities can be used to help students segment words into their component syllables or phonemes (analysis activities) or to give students practice in blending sounds to form words (synthesis activities). Students’ attention should be directed at articulatory gestures as well as acoustic properties of sounds. Mouth positions and movements involving the lips, tongue, and teeth to produce sounds provide a reliable basis for discovering the sound segments in words, particularly for disabled readers who have phonological segmentation difficulties (Lindamood & Lindamood, 1975). Segmentation as well as blending exercises are important antecedents that prepare learners to process print alphabetically.

Because prevention is the best antidote to disabled reading, it is crucial for kindergarten teachers to offer effective letter instruction and to make sure that all their students master letters by the end of the year before formal reading instruction begins. For students who enter school knowing few letters, a program such as Letterland (Wendon, 1993) can make the task of remembering the shapes and sounds of letters much easier. Mnemonics that help children form memorable links between letters and sounds are used in this program. Letters are drawn to resemble animate characters shaped like the letter with a name whose initial sound is symbolized by that letter—for example, s drawn as Sammy Snake, c as Clever Cat, m as Mike the Munching Monster. Alliteration in the name draws attention to the relevant sound. These names provide a way of referring to the letters that avoids problems arising from conventional letter names that do not always contain relevant sounds.

Exercises that give pre-alphabetic readers practice using their letter knowledge to invent spellings of words directs their attention to letter-sound relations. It also helps them acquire not only letter knowledge but also phonemic awareness (Ehri & Wilce, 1987b). Teachers can help students stretch out the pronunciations of words, listen for initial and final sounds in the words, and select letters for those sounds. With this knowledge, students are equipped to move from the pre-alphabetic to the partial-alphabetic phase of development.
Partial-Alphabetic Phase
Word-reading behaviors in this phase may typify kindergartners, novice first-grade readers, and older problem readers. Students can remember how to read words by sight using partial-alphabetic cues. They can use guessing strategies to read words. However, they are weak at decoding words and reading words by analogy because both of these strategies require more working knowledge of the alphabetic system than they possess.

Mason (1980) called this the visual recognition stage because children begin to detect letters in words. This phase has also been labeled the rudimentary-alphabetic phase because beginners can match some of the letters in words to sounds in their pronunciations (Ehri, 1991). The following capabilities characterize readers in the partial-alphabetic phase (Ehri, 1991, 1994; Ehri & Wilce, 1985, 1987a; Mason, 1980):

1. Students use partial letters combined with context cues to guess the identities of unfamiliar words (Stahl & Murray, 1998). For example, on seeing a picture of a farm with a word beginning with b printed beneath the picture, students might read it as barn. This contrasts with the previous phase, in which alphabet letters were ignored in guessing words. Words are often misread as other words having similar letters, for example, man for men, this for that, horse for house.

2. Students who read words backwards—for example, was for saw—are not seeing them backwards but simply have not acquired a strong left-to-right orientation in their word reading (Vellutino, 1979). One important achievement at this phase involves practicing the reading direction until it becomes automatic.

3. Students can remember how to read words by sight more effectively in this phase than in the previous phase. This is because they have available some alphabetic knowledge to use in forming connections between letters and sounds in words. However, because their knowledge of the system is limited, and because they lack full phonemic segmentation ability, they process only partial letter–sound relations to form connections in learning sight words. For example, in remembering how to read block, they might link the initial and final letters b and k to sounds /b/ and /k/ in the pronunciation of the word. However, other letters and sounds in the word are overlooked. Although it is easier to retain words in memory in this phase than in the previous phase, the problem is that other similarly spelled words, such as book and black, may be mistaken for block. Ehri and Wilce (1985, 1987a, 1987b) have called the use of partial graphophonic cues to read words phonetic cue reading.

4. At this phase, readers typically know the sounds of consonants whose letter names contain these sounds: b, d, f, j, k, l, m, n, p, r, s, t, v, z, including the “soft” sounds of c (/s/) and g (/j/). However, they may not know the hard sounds of c (/k/) and g (/g/), or the sounds of h, w, and y, whose names

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are not informative about sounds and may even mislead (e.g., initial /w/ sound in the name of Y wie). Also, they may not know graphemes involving more than one letter to symbolize a phoneme: sh, wh, th, ch, ck.

5. Decoding strategies are not available for reading unfamiliar words. Also, analogizing is not operable because sight words are not represented in memory in sufficient detail to recognize that new words have similar spelling patterns to known words. Rather than read new words by analogy, the new words are often misread as the known words because of a partial resemblance between letters (Ehri & Robbins, 1992).

**Instructional Implications.** The following instructional activities are useful in helping older delayed or disabled readers become full alphabetic readers.

To ensure that readers acquire working knowledge of the major grapheme–phoneme relationships in their word processing, direct instruction is necessary because the graphophonic system is too complicated for most readers, particularly disabled readers, to figure out on their own. Explicit instruction in letter–sound correspondences should be provided in a way that links the correspondences to their occurrence in specific words. Although phonic analysis instruction has historically been the subject of much controversy, careful consideration of research studies addressing this controversy points definitively to the benefits of instruction in phonics when it is carried out appropriately. In a comprehensive review of this research, Adams (1990) summarizes these conclusions:

> The best differentiator between good and poor readers is repeatedly found to be their knowledge of spelling patterns and their proficiency with spelling–sound translations. Phonic mastery is not only highly correlated with phonic coverage, but for low-readiness children—for those who lack it most—it is strongly and directly dependent on it. (p. 290)

Learners in this phase already use letter–sound associations to some extent; however, because their focus is on initial and final letters in words rather than on all the letters, they need to learn to process letters in words more completely. When words contain grapheme–phoneme relations known but overlooked by a student, the teacher should direct attention to these sounds. For example, when a student reads *black* as *back*, the teacher might say, “Yes, this word does begin with the *b* sound and ends with the *k* sound, but here is the letter *l*. What is that sound?” Then, the teacher should model the blending of all the sounds while sliding a finger under each to produce the correct word and have the student copy the procedure immediately.

Knowledge of the vowel spelling system, particularly short vowels, can be promoted by teaching students mnemonics that link the shapes of letters to their sounds in the fashion of alliterative Letterland characters (Wendon, 1991). For example, *a* can be drawn in the shape of an apple and labeled *Annie Apple*, *e* in the shape of an elephant head and trunk labeled *Eddy Elephant*, *i* in the shape of an ink pen labeled *Impy Ink*, *o* in the shape of an octopus labeled *Oscar Octopus*,
and u in the shape of an umbrella called *Uppy Umbrella*. Ehri, Deffner, and Wilce (1984) found that such mnemonics were effective ways to teach letter–sound associations to beginners; adaptations that are age appropriate can be made for older delayed readers.

It also is helpful for partial-alphabetic readers to engage in writing activities. Dual approaches to writing should be adopted; for example, when students are writing their own stories or other creative pieces, *invented spellings* (also called *temporary spellings*) may be encouraged if correct spellings of words are unknown (Henderson, 1981; Read, 1970). Studies have indicated that teaching students to stretch out the sounds in spoken words and to select letters representing those sounds helps them acquire skills that are useful for reading words (Ehri & Wilce, 1987b). As students analyze words to spell them, teachers can intervene and use the opportunity to scaffold students’ learning. The beauty of interacting with students about their invented spellings is that the spellings make visible the difficulties that students are having with the graphophonemic system. Teachers can help students find hard-to-detect sound segments such as consonant clusters (e.g., the /l/ in *black*). They can help them identify more conventional letters for the sounds detected, for example, w rather than y to spell the sound /w/ as in *witch*. Teachers can list other known words spelled with that sound in the initial position to show how common the grapheme–phoneme relation is in words.

If teachers notice students reversing bs and ds, they can teach them a mnemonic for distinguishing the two letter shapes—for example, by using one’s fists and thumbs to form the shape of a bed, with b on the left and d on the right. (To create this mnemonic, make two fists with your thumbs extended upward; bring the two fists together with knuckles touching to form the shape of a bed that also looks like the word *bed*, with the left b hand at the beginning and the right d hand at the end of the word.) Students can quickly form this *bed* mnemonic on their own to remind themselves which letter is which.

The aim of guiding students as they invent spellings is to help them use conventional grapheme–phoneme relations to produce phonetically complete spellings. Teaching students to invent spellings is particularly helpful for novice beginning readers (Ehri & Wilce, 1987b) and for older delayed readers (Baron & Treiman, 1980).

The other aspect of the dual approach to writing instruction involves making students aware that each word has a unique, prescribed sequence of letters that constitutes that word’s identity and that distinguishes it from similarly spelled words. To this end, the second part of this dual approach is to teach students to write, conventionally, words that have been targeted for their reading instruction. Students can be prompted to write these words conventionally by posting the words on charts in the classroom and by placing an alphabetized word bank on each student’s desk. However, it is unrealistic to expect partial-alphabetic readers to remember the correct spellings of words if they cannot make graphophonemic sense of letters in the spelling. To be easily remembered, spellings must fall within students’ knowledge of the alphabetic system. For this reason, the
production of correct spellings of words from memory will not be very common until the next phase of development, when students' knowledge of the alphabetic system is more extensive (Ehri, 1997).

Other ways to heighten students' understanding of the spellings of specific words are to have them engage in gamelike and manipulative activities. For example, students might spell targeted words with magnetic letters; or write words on small handheld chalkboards or Magic Slates; or play word games, such as Hangman, that focus attention on the internal letters in words.

When students analyze the spellings of specific words, they need to recognize how letters match up to sounds in the pronunciation of the words. This helps to establish the words in memory as fully analyzed forms. Teachers at Benchmark School (Gaskins, Ehri, Cress, O'Hara, & Donnelly, 1996/1997) have devised activities to help students do this. Each day, time is set aside for students to practice analyzing words targeted for that week, for example, tent, skate, and round. Several steps are performed to help students learn the words. First, the teacher pronounces the word. Then he or she has children stretch out their pronunciations and segment the word into its sounds. They do this by saying each sound as they raise a finger; for example: “Skate: /s/-/k/-/a/-/t/: I hear four sounds.” Benchmark teachers found that segmenting had to be done before the spelling of the word was presented to get children to attend to sounds and not to letters. After segmentation, a card showing the spelling is placed on the board, and children state the number of letters they see. The teacher asks why there are five letters but only four sounds, and the students reconcile the discrepancy by replying that very often when final e occurs in words, it does not make a separate sound, but rather it makes the preceding vowel say its own name. Students are then prompted to search the list of key words they have already learned to find another word with the same vowel sound. For skate, they might find place. Students practice writing the words from memory as well. They might stretch out the word with the teacher and write the letters needed for each sound, or they might stretch out the word and insert letters into Elkonin (1973) boxes to show how each letter goes with a sound.

To speed word learning in this phase, it is advisable to teach similarly spelled words in separate sets—for example, on and no; what, want, and that; for and from. Otherwise, the words become confused, and learning time is increased (Gough & Hillinger, 1980).

Readers are able to read connected text by applying their sight-word knowledge and guessing strategies. Their reading is bolstered substantially if they have heard or read the text before because they can incorporate their memory for the text into their reading (Sulzby, 1985). In assessing students' independent reading skill, it is important to observe them reading unfamiliar rather than familiar text. In selecting unfamiliar books that are not frustrating for students to read, it is important to assess the match between their sight-word repertoires and words in the books because students have very limited word-attack skills. In this phase it is important for students to be weaned from excessive reliance on text memory.
in their reading. To develop into independent readers, they must acquire and use their alphabetic knowledge to process graphophonic cues when they read words in text.

In sum, the instruction given to partial-alphabetic readers should be aimed at helping them expand their working knowledge of grapheme–phoneme relations for writing as well as for reading, to make use of this knowledge in building a sight vocabulary, and to use their growing sight vocabulary and prediction strategies to read connected text independently.

**Full-Alphabetic Phase**

Readers at the full-alphabetic phase of development differ from partial-alphabetic readers in a number of respects (Ehri, 1991, 1994; Frith, 1985). The full-alphabetic phase has also been called the *spelling-sound* stage (Juel, 1991) and the *cipher reading* stage (Gough & Hillinger, 1980) to convey the point that learners acquire and use orderly relationships for associating sounds to the letters they see in words. In terms of development, there is a marked contrast between the previous two phases and this phase. The pre- and partial-alphabetic phases occur inevitably among beginners who lack full knowledge of the alphabetic system and who, as a result, grapple with word reading in ways that are not completely effective. In contrast, the full-alphabetic phase is an essential beginning point that enables beginners to acquire the foundation for attaining mature reading skill in an alphabetic writing system. Mastery of this phase is essential for moving into the next two phases. Beginners who are taught to read words in writing systems whose spelling–sound correspondences are more regular than English—for example, German—and who receive systematic phonics instruction spend little if any time in the pre- and partial-alphabetic phases once they learn how letters symbolize sounds (Wimmer, 1993; Wimmer & Goswami, 1994).


1. Learners possess working knowledge of the major grapheme–phoneme correspondences, including vowels, and they possess phonemic awareness, which enables them to match up phonemes in pronunciations of words to graphemes seen in the conventional spellings of words. This knowledge enables them to decode unfamiliar words, to perform complete graphophonic analyses on words to store them as sight words in memory, and to read unfamiliar words by analogy to familiar words.

2. Early in this phase, decoding operations are executed slowly. The slow, nonfluent reading seen initially has been called *gluing to print* because learners consciously and deliberately sound out and blend letter–sound associations in their word reading (Chall, 1983). Painstaking decoding is a typical, temporary aspect of reading development often traceable to direct instruction in sequential decoding as a means of attacking unfamiliar words (e.g., Barr, 1974/1975; Chall, 1983; Clay, 1967; Monaghan,
1983; Soderbergh, 1977). Beginners become more rapid in applying this strategy as they practice decoding words and as their knowledge of fully analyzed sight words grows. They become familiar with the most frequent sounds symbolized by letters and how these sounds are typically blended in words. Their decoding fluency increases with practice.

3. One very important development at this phase is the sizable growth that occurs in students’ sight vocabularies as a result of reading practice. Much of this practice involves reading words in the context of stories. As indicated above, students must possess working knowledge of the alphabetic system to be able to look at words in text and perform the matching operations linking graphemes to phonemes. Students who have practiced reading new words in this way, perhaps as few as four times (Reitsma, 1983), retain the new words in memory and can read them by sight. As a result, the learner’s sight vocabulary grows steadily and rather substantially during the full-alphabetic phase.

4. At this phase, students become able to read unfamiliar words by analogy to familiar words they know by sight, for example, reading *beak* by analogy to *peak*. Goswami (1986, 1988) has shown that beginners can analogize early in their reading development when the analogs are present to prompt word reading. However, for beginners to read new words by analogy to sight words retrieved from memory, they must have some decoding skill (Ehri & Robbins, 1992). This enables them to store the sight words in memory in sufficient letter detail to recognize that the new words resemble but are not identical to the known words and to adapt their knowledge of known words in blending sounds to form new words. Although analogizing becomes possible at this phase, it is more common at the next phase as readers’ knowledge of sight words grows and as their decoding skills become easier to execute.

5. Text reading is initially slow and laborious even though students know most grapheme–phoneme relations. How laborious it is depends on how many unfamiliar words the text contains and how accessible its meaning is. According to conventional wisdom based on work by Betts (1954) and others, for text reading to be sufficiently comfortable and productive, students must be able to read most of the words accurately, with comprehension at or above 75%. Texts that students can read independently are those whose words are read at accuracy levels above 95%. Texts at an instructional level are read with about 95% accuracy, allowing teachers to observe students’ miscues and fluency, identify difficulties, and provide help. Texts become frustrating when word reading accuracy drops below 95%.

Text reading practice is essential for acquiring reading skill, particularly in English, which involves retaining the specific forms of words in memory to read them effectively (Share & Stanovich, 1995). Students must be exposed to these words to learn how to read them. They must have the decoding and prediction
skills to read the unfamiliar words accurately and to activate connection-forming processes that will retain the words in memory as sight words. Because each book they read contains only a few unfamiliar words, they need to read many books for their sight vocabularies to grow.

**Instructional Implications.** To promote learning in the full-alphabetic phase, and to help students move into the next phase, a number of instructional suggestions can be offered.

To help learners move from slow, deliberate decoding to faster decoding that involves less overt attention to each grapheme–phoneme relation, the key is practice. Beginners must read—a lot. Much practice in analyzing letter–sound associations within words is necessary so that these associations become rapidly executed and automatic.

Accuracy levels in reading words in text can be enhanced by having students read books that they have heard or read before. However, the problem is that if students rely mainly on their memory for the text and do not pay sufficient attention to the print, this form of reading will contribute little to strengthening their text reading fluency or their sight-word acquisition. The alternative is to have students practice reading texts that they have not read before. However, the problem here is that texts must be found in which the words can be read by sight, by decoding, or by prediction with at least 95% accuracy. It is especially hard to find such books for beginners with small sight vocabularies and slow decoding skill.

In this phase the strategy of reading new words by analogy to known words can be strengthened by teaching students to divide words into syllabic and subsyllabic units. Monosyllabic words can be divided into onsets and rimes (Treiman, 1985). An onset is the part of a syllable that comes before a vowel (e.g., the h in hall), while the rime is the rest of the syllable (i.e., the all in hall). Teachers have often called the rime a phonogram. The term word family applies to word sets that contain a commonly spelled and pronounced rime, for example, hall, ball, tall, call.

Recent findings suggest the importance of helping students recognize and practice reading words using onsets and rimes (e.g., see Treiman, 1985). Students might experiment with the spellings of rimes by substituting alternative onsets in front of the rimes (sometimes called consonant substitution) and then reading the product to determine whether it is a recognizable word, or students might be given an assortment of new words that are analogous to words they already know, with the task of identifying the familiar analog and showing how it can be applied to read the new word—for example, using the known word book to read the unknown word cook. Use of rimes to promote analogizing is considered particularly serviceable because research findings indicate that it is easier for beginners to make an analogy between the ending portions of words than between the beginning portions, for example, book → cook versus heat → heap (Goswami, 1986).

Gaskins and her staff at Benchmark School (Gaskins et al., 1988) have developed a word-identification program that teaches students to read words by analogy. The program was developed to address the word reading problems of children.
having difficulty learning to read. Students are taught over the course of the first year of instruction to read and spell a set of 93 key words in the way described above, by fully analyzing the graphophonic relations in the words so that they are retained in memory as sight words. The words are selected to exhibit major grapheme–phoneme relations and common rime spellings. As each key word is learned, students are asked to identify its spelling pattern—for example, in skate, the letters ate—and to think of other words with the same pattern. Students are given much practice using key words to read unfamiliar words, multisyllabic as well as monosyllabic. Students are especially proud when they are successful at decoding “college level” words in this way—for example, reading temperature by recognizing the following analogies and stating aloud, “If I know ten then I know tem, if I know her then I know per, if I know fur then I know tur.” Lovett et al. (1994) found that this approach helps disabled readers make progress in learning to read.

At this phase, it is important for students to practice reading words in connected text in a way that combines graphophonemic processing with comprehension. One characteristic of disabled readers is that they slight graphophonemic cues and rely excessively on context for reading words in text. As a result, their sight vocabularies may fail to develop adequately. The antidote to this is to strengthen disabled readers’ working knowledge of the alphabetic system sufficiently so that graphophonemic connections in words are processed spontaneously during text reading.

In observing students read text orally, teachers should look for signs of the following behaviors. Students should use sight-word memory to read familiar words. They should apply decoding or analogizing strategies mainly to read unfamiliar words. They should use a prediction strategy to confirm the accuracy of the words that are identified by the other strategies. (Failure to do this is evidenced by miscues that do not make sense and that are not self-corrected.) Prediction can also be used to aid in identifying words that are resistant to the other strategies. However, if students rely on prediction as the primary means of identifying words and skip over words so predicted without processing their graphophonemic connections, then text reading practice will fall short as a means of building students’ word-reading skills.

**Consolidated-Alphabetic Phase**

The consolidated-alphabetic phase actually begins during the full-alphabetic phase. Its onset is characterized by the consolidation of larger units out of grapheme–phoneme relations that recur in different words. This phase has also been referred to as the orthographic phase to indicate that the focus is on spelling patterns (Ehri, 1991; Frith, 1985). Word learning becomes more mature in several respects (Ehri, 1991, 1994; Juel, 1983).

1. The important acquisition at this phase involves learning chunks of letters that recur in different words and how they are pronounced. These letter chunks might include affixes, root words, onsets, rimes, and syllables. The patterns might be linked to their linguistic origins—Anglo-Saxon, Greek, and Latin—to clarify the distinctions and regularities (Henry, 1989).
value of these chunks is that they facilitate word-decoding accuracy and speed (Juel, 1983) as well as sight-word learning (Ehri, 1995). Whereas full-alphabetic readers operate primarily with grapheme–phoneme relations, consolidated-alphabetic readers can operate with larger units as well, hence reducing the total number of units to be processed in words. For example, the word *interesting* contains 10 graphophonic units (including ng, symbolizing one phoneme) but only 4 graphosyllabic units.

2. Among the first spellings that are likely to become consolidated are those that occur most frequently in children’s texts. These include the morphemic suffixes -ed, -ing, -er, and -est (Bryant, 1997) as well as spelling patterns that recur in many words and are high-frequency words themselves: -it, -at, -in, -an, -and, -all.

3. Students’ sight vocabularies continue to grow. It is easier to store longer words in memory because learners can form connections between familiar letter chunks; they are not limited to grapheme–phoneme connections. Readers in the consolidated-alphabetic phase recognize sight words by remembering connections involving multiletter combinations as well as single graphemes. When words are learned in this way, they are seldom confused with other words having similar spellings.

4. Students who learn the strategy of reading words by analogy are assisted in recognizing spelling patterns that recur in different words and in building neighborhoods of words organized by spelling pattern in memory (Laxon, Coltheart, & Keating, 1988). This facilitates the consolidation of letter sequences into units.

5. To read unfamiliar words, decoding strategies are expanded to include hierarchical decoding as well as sequential decoding. In hierarchical decoding, more complex understandings are acquired about the influence of graphemes occurring in one part of the word on the sounds of graphemes in other parts of the word—for example, the influence of final -e on the preceding vowel (e.g., fine vs. fin, pane vs. pan, cone vs. con), the influence of e and i on the preceding consonant g or c (e.g., wage vs. wag, cent vs. cant, face vs. fact, city vs. cat), and the influence of double consonants on a preceding vowel (e.g., cutter vs. cuter, latte vs. late) (Venezky, 1970; Venezky & Johnson, 1973). Students acquire working knowledge, that is, implicit knowledge, of these relations. Teaching students explicitly stated rules may promote acquisition of working knowledge, but it is no guarantee (Beck, 1981). Evidence that students have acquired working knowledge is revealed in tasks requiring them to read real words they have never read before (such as gather) or nonwords (such as cibe) containing the patterns.

**Instructional Implications.** Signs that average readers are using consolidated units in their reading become apparent typically in second grade (Bowey & Hansen, 1994; Ehri, 1991; Juel, 1983, 1991). Acquisition of more complex
relationships may continue to mature through at least the eighth grade (Juel, 1991; Venezky, 1976).

Although the analogy strategy may be taught in the full-alphabetic phase, continued attention is warranted during the consolidated-alphabetic phase. To direct students' attention to common spelling patterns, they can practice dividing written words into onsets and rimes and practice the strategy of reading words by analogy. As this phase progresses, students should be helped to make the transition from (a) analogizing with prompts to (b) analogizing consciously on their own to (c) analogizing unconsciously on their own.

Students should learn to break apart multisyllabic words into separate syllables by locating vowel nuclei and pronouncing each vowel with its adjacent consonants as a separate syllable. Some syllables can be read by analogy to familiar words. As students practice decoding multisyllabic words, they acquire implicit awareness that syllable breaks tend to come between certain letters and not between others. Practice is much more effective for learning this than having students memorize syllabication rules. Segmenting spelling patterns into syllables and pronouncing them can be done not only to decode unfamiliar words but also to analyze the spellings of lengthy words whose identities have already been determined, perhaps from context. This type of analysis should help students form the connections needed to retain the words in memory as sight words.

Additional regularities of the English spelling system will become apparent to students who engage in word-study activities that involve distinguishing the linguistic roots of spellings and then analyzing words with these roots to discover relationships between the meanings of words and the meanings of their parts (Henry, 1989). For example, students can learn to identify and analyze words containing Anglo-Saxon parts, such as hood, ful, ness, ship, and ish; or Greek parts, such as tele, graph, ology, phon, and auto; or Latin parts, such as tion, ture, scrib, struct, and rupt. They can explore whether different words having the same parts bear any similarities in their meanings as a result. Word-study activities such as these can be quite fascinating to students.

Delayed readers may gain control of graphophonic word-identification strategies with carefully planned programs, but their progress is often halted around the fourth grade, when they encounter increasing numbers of multisyllable words—not just two-syllable words, but words having three, four, and five syllables or more. Orthographic recoding through application of word-pattern analysis, use of typical word units, and recognition of prefixes and suffixes must receive direct practice for disabled readers to become skillful in identifying these words. Providing recoding models (“look for affixes, then look for a base word”), teaching students to detect analogies, giving practice dividing words into syllables, using word sorts designed to point up common syllables, building longer words from shorter ones, and other activities can develop skill in processing multisyllabic words. (See Cunningham, 1998, for additional specific suggestions.)

Students should engage in much practice using the various knowledge sources and strategies to read words during text reading so that word reading
becomes automatic and fluent. This is important so that word reading operates unobtrusively as an integral part of text reading with the reader’s attention focused on comprehension.

**Automatic Phase**

This is the phase of proficient word reading. Chall (1983) termed this the *automatic phase* because of readers’ highly developed automaticity and speed in identifying unfamiliar as well as familiar words. The majority of words that readers at this phase encounter are words in their sight vocabularies, enabling them to read most words effortlessly in or out of context. On the occasions when an uncommon, technical, or foreign word is met, these readers have several strategies at their disposal for identifying the word. There is some evidence that when automatic-phase readers recognize words by sight, the other word-reading strategies are at work as well, though at an unconscious level, and contribute to efficient reading by confirming the identities of words and thus creating redundancy in the processing of text (Perfetti, 1985). The presence of multiple sources to verify word recognition maintains a high level of reading accuracy. Automatic, fluent word recognition frees the reader’s attention to focus on text meaning.

**Conclusion**

In this review we have indicated that as readers progress from the earliest phase of reading to the most proficient phase, they learn to read words by several different means: by using context, by decoding through use of letter–sound associations or spelling patterns, by analogy, and by sight. At each phase, reading improves as new mechanisms for recognizing words are added to the learner’s repertoire. When readers reach the automatic phase, all of these systems are under their control. It is important for teachers to recognize which systems are operational at each phase and which are beyond reach at that phase.

Knowledge of the characteristics of each phase can provide teachers with a basis for assessing the strategies available to readers when they respond to print. As a first step, teachers can examine the list of characteristics typical of each phase and compare them to the predominant responses of a learner. Once the probable phase is identified, a program of word learning can be tailored to capitalize on the student’s learning strengths, to avoid instruction that requires processes the learner has not yet acquired, and to provide lessons that will move the student through that phase into the next. In this way, knowledge about the phases of word learning allows teachers of delayed and disabled readers to move beyond generalized prescriptions for word learning. It provides them with a basis for designing lessons that more precisely make contact with each student’s word-reading knowledge and strategies.

In the past, a common approach to instruction has been to determine which specific skill needs to be taught to students—for example, developing a larger sight vocabulary, or increasing knowledge of letter–sound relationships, or increasing fluency. Once determined, a rather standard group of activities has typically been
used with all students. In contrast, according to phase theory, what is taught depends on a student’s phase of development. Although all facets of word learning may need to be addressed in some fashion, the specific type of instruction that facilitates reading for students in one word-learning phase may not advance learning for students in a different phase. Vellutino and Scanlon (1987) provide one example of this disparity. Teachers may expedite breakthroughs into reading during the pre-alphabetic phase of development by giving students immediate access to word names through whole-word instruction. However, this will not contribute to students’ development in the next phase. For progress to continue, teachers must provide opportunities for students to develop skill in analyzing words into their sound-symbol constituents. Another example is the teacher who attempts to teach letter–sound decoding to students who lack phonemic awareness or knowledge of all the letter shapes and sounds. This is destined to result in slow and incomplete learning as well as frustration for both teacher and student.

It is important to recognize that, compared to normally developing readers, delayed and disabled readers have more difficulty learning to read words in most of the ways we have described. They are slower to acquire a sight vocabulary (Ehri & Saltmarsh, 1995). They have limited knowledge and use of decoding and analogizing strategies (Rack, Snowling, & Olson, 1992). One reason why multiple word-reading deficiencies are apparent in these students is that the various ways of reading words develop together and are mutually interdependent throughout development, as we have indicated. If one way does not develop adequately, then the other ways will not develop adequately either. Decoding skill is needed to retain fully analyzed sight words in memory. A sight vocabulary is needed to read words by analogy. Familiarity with analogous relations among sight words helps in learning spelling patterns that are useful for more efficient decoding. This means that students having difficulty learning to read need instruction that is thorough in covering all aspects of word reading. Very little can be left to self-discovery or chance. Clues about how growth can be promoted at each phase of development are found in the cognitive and instructional descriptions we offer in this piece. With practice applying this phase theory in their teaching, we hope that teachers can acquire a more refined sense of their students, of how far they have progressed in their ability to read words, and of what types of instruction are most helpful for advancing their development as readers.

**Questions for Reflection**

1. How do students form connections among written text, pronunciation, and meanings?
2. Why might it be preferable to conceptualize word learning as phases as opposed to stages?
3. What is the role of direct instruction in the different phases of word learning?
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