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What Teachers Need to Know and Do to Teach Letter–Sounds, Phonemic Awareness, Word Reading, and Phonics

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The goal of reading instruction is to enable students to look at written words in text and recognize their pronunciations and meanings automatically. How does this happen?

This article is focused on the beginning period when children learn to read. Our aim is to explain how beginners achieve word reading automaticity, that is, being able to look at written words in text and recognize their pronunciations and meanings immediately, a hallmark of skilled reading.

The road leading to automatic word reading is not short. It is not reached directly by having novice beginners practice reading words on flash cards. The course of development requires mastery of letters, phonemic awareness, knowledge of the alphabetic writing system and how to spell the sounds in words, the ability to decode unfamiliar words, and acquisition of a growing vocabulary of sight words. Learning these skills is facilitated by systematic phonics instruction.

We will review the learning processes and forms of instruction that establish foundational knowledge and launch children into independent word reading. Theory and research findings are based on scientific studies by Ehri (2020) and her collaborators.

First, it is important to clarify some terms. The smallest letter–sound units to spell words in an alphabetic writing system are grapheme–phoneme (GP) units. Graphemes are one or more letters that symbolize single phonemes, for example, B says /b/, CH says /č/. (Note that IPA symbols are used to represent phonemes).

Phonemes are the smallest units in pronunciations of words and are identified by their acoustic and articulatory features, for example, *check* has three phonemes, /č/-/ɛ/-/k/. You can detect three sounds and three different mouth positions to produce those sounds.

GPs are the basic units of the English alphabetic writing system. The writing system includes higher-order units as well with blends of GPs representing syllables, onsets and rimes (e.g., "st – amp"), and morphemes (i.e., meaning-bearing affixes and words).

Phonemic awareness refers to the ability to focus on, distinguish, separate, and manipulate phonemes within pronunciations of words. Various tasks have been used to assess and teach students to do this: segmenting spoken words (e.g., "dog") into phonemes (e.g., /d/-/a/-/g/); blending separated phonemes (e.g., /d/-/a/-/g/) to form whole words; adding, substituting, or deleting phonemes in spoken words (e.g., say "dog" without /d/).

Phonics refers to a form of instruction that teaches students the major grapheme–phoneme relations and their use to decode and spell words. Decoding involves transforming graphemes into phonemes and blending them to form pronunciations of words. Spelling involves distinguishing and remembering phoneme–grapheme relations specified in written words. Phonics also refers to the knowledge and reading–spelling skills that students acquire when they receive systematic phonics instruction.

Different Ways to Read Words

As a reader you may use at least four different ways to read words. The first way is from **memory**. Because you have read the word *train* several times, you can read it from memory automatically by sight. In fact, all words become sight words with practice.

The other ways are strategies that enable you to read words you have never read before. Very like you have never read *vanadium*, so you might **decode** it by sounding out and blending letter–sound units. Or you might read it by **analogy** to a word you already know that shares its spelling pattern, *stadium*.

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For a word you know orally but not in print, you might use the sentence context plus some of the letters to **predict** the word, for example, "Heat turns ice to a l----d" and then make sure your prediction fits the spelling, *liquid*.

Decoding words requires knowledge of GP correspondences and higher-order units of the writing system. Analogizing requires having a store of written words in memory. Prediction requires letter–sound knowledge, comprehension of a word's meaningful context, and a vocabulary of spoken words.

However, if words have been read before and stored in memory, these strategies are no longer needed. Readers can look at the words and recognize them automatically by sight without thinking. How does this happen?

PAUSE AND PONDER

- What are sight words? How do students learn to read them? What forms of instruction enable this?

Sight Word Learning

People used to believe that readers used the shapes of words or visual features of letters to store sight words in memory. However, this could not be true. There are too many words with similar shapes. Readers would make lots of mistakes if they relied strictly on visual word forms. Several studies have supported a better explanation (Ehri, 2020).

Results have shown that written words are stored in memory when graphemes in spellings are connected to phonemes in pronunciations of words. Readers encounter an unfamiliar written word. They decode it by converting graphemes into a blend of phonemes. This secures the spelling bonded to its pronunciation in memory. They do this a few times and the spelling is retained in memory connected to its pronunciation and meaning forming one lexical word unit. Then the next time they see the word, they recognize it immediately. Seeing the spelling activates its lexical match in memory.

This GP connection forming process to store spellings bonded to pronunciations of words in memory is called orthographic mapping. Have you ever asked a person to spell their name because the pronunciation was unfamiliar? Once the graphemes are named, the pronunciation is clarified. In fact, knowing the spelling helps you remember the pronunciation.

This is orthographic mapping at work. Orthographic mapping occurs when students decode words, when they study the GP relations in spellings of words, even when they simply look at a spelling and hear it pronounced. When GP units are known well, orthographic mapping is activated automatically to connect graphemes and phonemes to secure spellings bonded to their pronunciations in memory.

Orthographic mapping enables students to read words by sight (Ehri, 2014, 2020). Contrary to the beliefs of some that only high-frequency or irregular words are read in this way, it turns out that all words when mapped orthographically and stored in memory become sight words.

To remember irregularly spelled words, partial orthographic mapping between known GPs can be activated. Most words contain at least some GPs that are regular, for example, the initial and final consonants in *said* and *yacht*, so these can anchor spellings in memory.

One example of orthographic mapping instruction comes from a word decoding program developed at Benchmark School (Gaskins et al., 1996). This school was using analogy phonics to teach students to decode words. "If I know *king*, then I can read *sting*."

However, some students were not remembering spellings of the keywords they needed to analogize. So an orthographic mapping routine was implemented to help student get the keywords into memory by analyzing GP units in the keywords.

The routine was applied to teach a new set of 3–4 keywords each week for 28 weeks. To illustrate, the teacher pronounced a keyword, for example, "king." Children segmented the word into its phonemes by saying each while lifting a finger. They detected three phonemes, /k/-/I/-/ŋ/. Then its spelling was shown, its letters were counted, and they had to reconcile how come there were four letters but only three phonemes. They learned that it takes two letters NG to represent one phoneme. After the set of keywords was analyzed, students spelled the words from memory by recalling GP relations.

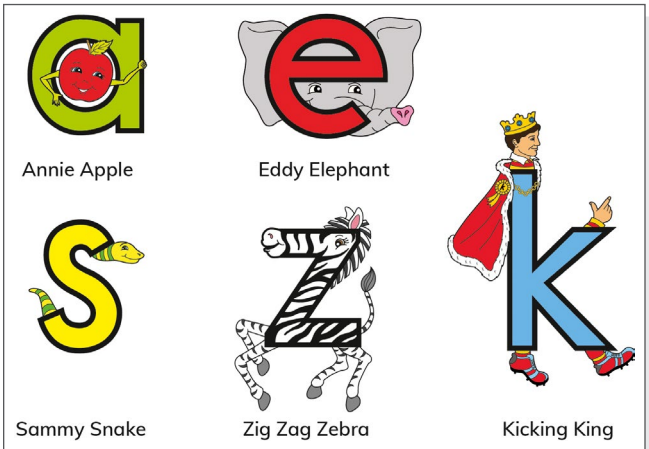
This routine was repeated and practiced to get all the keywords into memory so students could access them to read unfamiliar words by analogy. Teachers found that it was important to have students analyze phonemes in spoken words first before they saw spellings. Otherwise, they just sounded out the letters and overlooked pronunciations.

In sum, orthographic mapping requires that students know grapheme–phoneme relations and how to segment words into phonemes. How might letters and phonemic segmentation be taught? Our research offers suggestions to make instruction more effective.

Mnemonics to Teach Letters

Who are Annie Apple, Eddy Elephant, Kicking King, Sammy Snake, Zig Zag Zebra? These are letter–mnemonic

Figure 1
Letter-embedded Picture Mnemonics to Learn Associations between Graphemes and Phonemes. From *Letterland ABC*, L. Wendon (2021). Copyright Letterland International Ltd. Reprinted by permission



Note. The color figure can be viewed in the online version of this article at http://ila.onlinelibrary.wiley.com.

characters used to teach GP relations in the Letterland program and are shown in Figure 1 (Wendon, 2021).

What makes letter–mnemonics such as these so memorable? The key ingredient is the special relationship linking letter shapes to the objects that they resemble and that have names beginning with those letters. This link makes it possible for learners to look at a bare letter and remember its sound because the letter's shape reminds them of the object, its name, and the initial sound in the name.

Teachers using letter–mnemonics with this key ingredient have reported that children learn these GP relations quickly. With practice, the associations become automatic and the mediating character is phased out.

In addition to teachers' testimonies, controlled experiments have provided convincing evidence that mnemonics depicting letter–shape–object–name relations improve children's memory for GP associations. In one study, we compared two ways to teach children letter–sound relations to see whether embedded picture mnemonics were more effective than non-embedded pictures (Ehri et al., 1984).

Embedded pictures were drawings of objects shaped like a letter and having a name beginning with that letter's sound, for example, a snake drawn to form S, a table drawn to form T, mountains drawn to form M. Non-embedded pictures taught the same objects and names but the objects were drawn in a different shape from the letter, for example, a snake stretched out.

Except for this difference, learning procedures were the same in the two training conditions. Results showed that children learned GP relations much better with the picture embedded mnemonics. Our findings have been confirmed in other studies (Roberts & Sadler, 2019; Shmidman & Ehri, 2010).

There are other mnemonics that speed up children's learning of GPs. If children know the names of letters, a relevant phoneme can be found in many of the names. Vowel letter names contain their long vowel sounds (i.e., A, E, I, O, U). Most consonant letter names contain their sounds (e.g., Bee, Dee, Ess, Em). This makes learning these letter–sounds much easier.

If children can learn GPs from letter names they already know, then they have many fewer GPs to learn whose sounds are not in their names, such as short vowel GPs, consonant phonemes represented by the letters H, W, Y, and the sounds of C in *cat* and G in *gate*.

Acoustic and Articulatory Analysis to Teach Phonemic Awareness

Tell me the first sound in "cat," the final sound in "cat." Tell me all three sounds in "cat." How many sounds are there in "thing?" Did you say three, four, five? Some people say five because there are five letters in the spelling, but that is incorrect. Actually, there are only three phonemes in the pronunciation, "th" "i" "ng" (/θ/-/I/-/ŋ/).

The easiest way to detect phonemes is to monitor where your mouth is positioned and when it moves to another position to say the succession of phonemes in "thing." First, the tongue is positioned beneath the upper teeth for "th"/θ/, then the mouth opens for "i"/I/, then the back of the tongue lifts to close the vocal tract while the sound "ng"/ŋ/ emerges through the nose.

Let's try another word: "swish." It has five letters but fewer phonemes. Examine your mouth to see how many. First, the tongue lifts to the front roof of your mouth forcing out air to create a hissing sound /s/, then your lips round to say /w/, then your mouth opens to say "i"/I/, then your tongue lifts to mid roof forcing out air to say "sh"/š/. So "swish" has four phonemes.

Graphemes in spellings may help you detect phonemes but they can be misleading. You need to focus on analyzing the sounds in spoken words and the mouth positions and movements that accompany sounds to break words into their smallest pieces.

Teaching students phonemic awareness can be conducted using several tasks. The easiest tasks focus on single phonemes: say the first sound in "cat," the final sound, the middle sound; from an array of pictures, pick two whose names begin with the same sound.

More difficult is phoneme segmentation which requires identifying the sequence of separate phonemes in spoken words. Phoneme blending involves listening to phonemes spoken separately (e.g., /k/-/æ/-/t/) and then combining them to form a word (e.g., "cat"). In the latter task, words with more phonemes make sound blending harder.

More advanced tasks involve adding phonemes (e.g., say "love," now add /g/ as the beginning), deleting phonemes (e.g., say "glove" without /g/), and substituting phonemes (e.g., say "live," now replace /l/ with /g/).

Phonemic awareness tasks involve manipulating phonemes in spoken words. These tasks can be conducted by having students move tokens to mark the phonemes they manipulate. For example, in a phoneme segmentation task, they can move a penny onto a penciled line as they pronounce each phoneme in the sequence.

If students know grapheme–phoneme relations, they can be given letters rather than tokens to select and move onto a line as they say each phoneme. In this case, they are learning to spell the phonemes in words.

Also students can be taught to monitor their mouth positions and movements to segment words into phonemes. In one study (Boyer & Ehri, 2011), we taught kindergartners to move pictures of mouth positions onto a line as they pronounced the sequence of phonemes in words. They were aided by mirrors to examine their mouth positions and movements.

For example, to segment "meet," they first selected a picture of lips closed to say /m/, then a picture of the mouth open and smiling to say /i/, then a picture of the tongue lifted to the roof of the mouth to say /t/. Children were also taught to segment the words into phonemes using letters. This combined mouth–letter segmentation instruction improved their ability to learn to read words after training compared to instruction where they segmented words with letters only.

Decoding Instruction

An important word reading strategy taught in synthetic phonics programs is decoding. This involves transforming graphemes into phonemes and blending them to form a recognizable word. This enables students to read words they have never read before. Once words are decoded a few times by connecting graphemes to phonemes, their spellings become bonded to their pronunciations and meanings in memory and enable students to read the words automatically by sight. There is no longer a need to decode these words.

Some features of words make decoding more difficult. The longer the spelling, the more GPs that students must remember to blend. Stop consonants in words are hard to pronounce individually without adding a schwa vowel. This complicates the blending process. Try saying the sounds of the following letters without adding a vocalic "uh:" t, d, p, b, g, j, k. If students decode words with stop consonants by first pronouncing each grapheme separately, /tuh/-/a/-/puh/, and then blending the sounds, they must delete the "uhs" to form "top."

We performed a study to compare this decoding procedure to another in which students were taught to hold and connect phonemes rather than say each separately (Gonzalez & Ehri, 2021). The words taught were consonant–vowel–consonant (CVC) words that contained continuant consonants: f, l, m, n, r, s, v, z. Try saying these sounds. Unlike stop consonants, you can pronounce and hold each sound without adding a schwa vowel. When decoded in a CVC word, the phonemes can be held and blended without breaking the speech stream between sounds, for example, /ssssaaaammmm/, "sam."

In our study, children were first taught to decode CVC words containing continuant consonants, either by holding and extending the phonemes before blending them as described above, or by breaking the speech stream between phonemes, /ssss/-/aaaa/-/mmmm/. Once they could decode these CVCs perfectly, then they were given CVCs with stop consonants to decode.

Results showed that students who had been taught to hold and connect sounds learned to decode both types of CVCs better than students who were taught to break between sounds. Learning to decode by saying sounds separately not only disrupted blending because students had to delete schwas but also because pausing between sounds caused students to forget one of the sounds, typically the first sound.

These findings suggest that to teach decoding, students should begin with CVCs containing continuant consonants and they should be taught to hold and stretch the separate phonemes without breaking the speech stream. This teaches them how to blend. When they have mastered this task, then they can transition more easily to decoding CVCs with stop consonants.

An alternative approach to decoding CVCs involves teaching students to pronounce the first two graphemes as a blended sound, and then to add the final grapheme, for example, "ba – t" "bat." This avoids attaching a schwa vowel to the initial stop consonant (Beck, 2006).

English is an alphabetic writing system composed of grapheme–phoneme units. These units combine to form larger syllabic units (e.g., *ha-lo*, *mar-ket*), onset-rime units (e.g., *st-art*), and morphemic units (e.g., *chew-ing*, *paint-ed*).

Some phonics programs begin by teaching students to decode GP units which are the basic building blocks of the writing system. Other programs start out by teaching beginners to read larger multi-letter units such as onsets and rimes or syllabic units that consist of blended GP units. These are preferred because they are easier to detect in spoken words than phonemes are.

We conducted a study to determine whether it was better to teach beginners to decode words using GP units or larger consonant–vowel (CV) syllabic units (Sargiani et al., in press). The students were Brazilian Portuguese-speaking first graders.

Portuguese is an alphabetic writing system where syllables are salient units in spoken words. A common approach in Brazil is to teach beginners to decode whole syllabic units (e.g., *ba*, *be*, *bo*) rather than GP units at the start of reading instruction.

However, results of our study showed that this approach was not nearly as effective as teaching children to decode by sounding out and blending GP units (e.g., *b-a ba*, *b-e be*, *b-o bo*). Students who were taught with GPs learned to decode CVs much faster than the syllable group.

Once students in both training conditions had mastered reading CV words using one or the other method, they were tested on their ability to read longer words, to spell words, and to segment words into phonemes. Students taught to read with GPs far outperformed the syllable group on all of these tasks.

Surprisingly, students taught to decode syllables did not distinguish GP subunits embedded in the syllables, even though each contained only two GPs, and even though they read and reread them many times until mastery.

These findings suggest that when the basic units of a writing system are GP units, children should begin instruction by learning to decode words using these basic units rather than larger units such as syllables or onset-rime units.

Some educators have suggested that when words in alphabetic writing systems such as Portuguese are spelled with highly regular GP units and when syllables are salient in spoken words, children do not need to be taught GP units explicitly because they will figure out GP units embedded in the syllables on their own. However, our findings did not show this.

How Reading Text Contributes to Sight Word Learning

As explained previously, orthographic mapping creates connections between graphemes and phonemes to secure spellings bonded to pronunciations of words in memory. However, meanings must also become bonded to spellings in memory.

Bonding is facilitated when words are read in meaningful contexts. Connecting semantic information to spellings of words is especially important for words that have little meaning when pronounced in isolation. Such words require sentence contexts to activate their meanings.

Suppose you gave a beginning reader practice reading the following words on flash cards: *did*, *am*, *with*, *had*, *hid*, *very*, *went*. If they knew the relevant grapheme–phoneme relations, they could remember how to read the words after a few practice runs through the cards. However, the words they learned would have no meanings because these words require sentence contexts to activate their meanings. In a study, we found that when children who were prereaders listened to these words pronounced in isolation, they regard them as nonsense words (Ehri, 1975).

An important function of reading words in text is to activate meanings and syntactic information about the words' roles in sentences so that this information becomes bonded to spellings and pronunciations stored in memory. Giving children lots of practice reading and comprehending text at their level serves this purpose. It establishes fully formed sight words with all their identities—spellings, pronunciations, meanings, roles in sentences—bonded together as one unit in memory.

Oral versus Silent Reading of Words

How should beginners be expected to read text? In many kindergarten and first-grade classes, children are told to read text silently. How might this affect their progress in learning to read?

Reflect on sight word learning processes already explained. In order for readers to store words in memory to build their sight vocabularies, GP connections must be formed between spellings and spoken words. If readers don't stop and ***pronounce*** unfamiliar words, then connections won't be formed and the words will not enter memory. The process of orthographic mapping requires this.

It may be especially important to instill this habit of pronouncing words aloud in beginning readers for whom decoding words takes time and effort. If they read text silently, they may just skip over unfamiliar words and guess them without looking at their spellings.

In one study, we showed that students reading text retained more information about new vocabulary words when they pronounced them aloud than when they read them silently (Rosenthal & Ehri, 2011).

Solutions for Teaching Students to Read Irregularly Spelled Words

Beginners need to read words in text to bond their meanings to spellings and pronunciations in memory. However, bonding of meanings may be thwarted by the presence of irregularly spelled words that defeat decoding attempts.

Many high-frequency words are needed to form sentences yet their spellings do not conform fully to the writing system, words such as *said*, *the*, *was*, *have*, *of*, *could*, *been*, *laugh*, *talk*, *though*, *one*, *once*. This makes text reading more difficult for beginning readers.

Various instructional solutions have been adopted. One is to have children practice reading these words in isolation on flash cards. However, meanings of the words will not be activated and become bonded to spellings in memory. Words must be read in sentence contexts to activate meanings. Otherwise, children will regard words like *was* and *said* as nonwords.

A better solution adopted in some systematic phonics programs is to have beginners read decodable texts that are tailored to the GP units they have been taught and that minimize the number of irregularly spelled words. Students may begin reading texts as soon as they have learned as few as four consonant and two vowel GP units.

As students learn more GP units, the word possibilities expand. Irregular words may be read and remembered by forming partial connections between regularly spelled GPs, for example, initial and final consonants in *was*, *said*, *talk*.

Another approach is to teach students to decode flexibly by testing alternative pronunciations of an irregular spelling until they hit upon a meaningful word that matches some of the GPs in the spelling and fits the context, for example, "The child complained that his *stomach* ached," first decoded as "stow-match," a nonword, but then adjusted to the familiar word "stu-muck" (Tunmer & Chapman, 2012).

The text itself might be written to make decoding words easier. Letters in words might be specially marked to indicate how they are pronounced, hence making irregularly spelled words decodable (Silverzweig, 2021). For example, a small x might be printed beneath silent letters, and a horizontal line printed above letters representing long vowels.

Other diacritics might be used to distinguish between alternative pronunciations of GPs such as S /s/ and /z/, G /g/ and /j/, C /s/ and /k/. Writing systems such as Hebrew and Portuguese use diacritics to enhance the transparency of spelling–sound relations. In Hebrew, vowels are marked in texts for students learning to read but are dropped in more advanced text.

Involvement of Vocabulary Knowledge

Suppose that children entering kindergarten are assessed on many characteristics. Which ones are good indicators of how well they will learn to read during kindergarten and first grade? Among the best predictors are letter naming, phoneme segmentation, and vocabulary knowledge (Share et al., 1984).

Vocabulary contributes in several ways. When children transform spellings into pronunciations to decode words never read before, they need vocabulary knowledge to recognize the meanings of those pronunciations. If the words have variable GP spellings so that flexible decoding is required, they need vocabulary knowledge to sort through the possible pronunciations to find the right word.

If children lack knowledge of the meanings of words they decode during text reading, then they must use the context to figure out what the words might mean. This is necessary to store the words in memory and grow their sight vocabularies.

However, as a source of vocabulary growth, reading unfamiliar words in text is problematic. Often meanings are opaque. Children may be tempted to skip such words rather than try to decode them and figure out their meanings. Having a more extensive spoken vocabulary reduces the need to learn new word meanings from print.

Not only does vocabulary knowledge help children learn to read, but also learning to read awakens children's awareness of words. If you ask novice beginners to point to the words as they recite a line of memorized text, their pointing will be governed by salient spoken syllables rather than printed words (Morris, 1983). Learning to read teaches them how to break speech into separate words, for example, "Gimme apeesa bread" becomes six words.

Spellings can enhance the learning of new vocabulary words among students who know GP relations. We conducted an experiment in which one group of students studied spellings, pronunciations, and meanings of new vocabulary words while the other group studied only pronunciations and meanings (Chambre et al., 2020; Rosenthal & Ehri, 2008). Students exposed to spellings remembered the words much better than those who did not see spellings. This is because spellings activated GP connections that better secured the pronunciations of words in memory.

Phases of Development in Learning to Read and Spell Words

At the beginning of the school year, the diversity among kindergartners and first graders in their literacy

development is likely to be extensive. Some children can name all the letters, whereas other children know few if any letters. Some children can call on their knowledge of letter names to write sounds they detect in words, for example, MT for "empty" or YF for "wife," while other children can spell words conventionally. Some children can read only a few preprimer words from memory, whereas others can read words beyond their grade level. How does a teacher plan reading instruction when faced with such diversity?

Assessment

The first step is to assess each student's level of development of skills that are needed in learning to read words:

1. Letters: How many uppercase and lowercase letters can students name? How many grapheme–phoneme relations have they learned?
2. Phonemic awareness: Can they say the first sound in words? the final sound? Can they segment spoken words into all their phonemes?
3. Reading words: How many preprimer, first-grade-, and second-grade-level words can they read immediately from memory?
4. Decoding pseudowords: Can they pronounce the spellings of words they have never read before, such as *baf*, *nep*, *sig*, *lod*?
5. Spelling words: Can they invent spellings by detecting phonemes in pronunciations and writing letters that represent the phonemes? Can they spell words conventionally?
6. Reading text: Can they read preprimer, primer, first-grade, and second-grade-level text?

These are skills that indicate whether a child has moved into reading and how advanced they are. If a child knows few if any letters, they will show little ability on the other tasks. Letter knowledge initiates the emergence of learning on the other tasks.

Based on our research, we have portrayed the course of learning to read and spell words as a series of four developmental phases. Children's performance in the above tasks can reveal their phase of development and what they need to learn to move to the next phase (Ehri, 2005). The phases are labeled to indicate the predominant type of alphabetic connection used to read words.

Pre-alphabetic Phase

In this phase, children lack much knowledge of letter shapes, names, or sounds. If they can read their own names or recognize words in environmental print, they do this by remembering salient visual cues rather than letter–sound cues in the spellings of these words. Hence, they are pre-alphabetic. They may know some letter names but will perform poorly on the other tasks listed above.

Instruction moving them toward the next phase requires teaching letter shapes, names, and grapheme–phoneme relations. In addition, phonemic awareness instruction is needed to teach them to detect phonemes in spoken words. Using mirrors to direct children's attention to their mouth positions and movements in saying sounds in words can help them understand the task and separate one phoneme from the next.

Partial Alphabetic Phase

In this phase, students have learned most letter shapes and names. This enables them to begin operating alphabetically to read and spell words.

Phonemic segmentation instruction improves their ability to detect phonemes in pronunciations of words and connect them to graphemes in spellings. However, the connections formed remain partial rather than complete, typically involving initial and final letter–sounds as students are still mastering the GP writing system.

Memory for correct spellings is poor, and students are unable to sound out words to decode them. They can read some words from memory by forming partial GP connections linking spellings to pronunciations but may confuse similarly spelled words.

Moving students to the next phase requires teaching them to segment pronunciations of words into all of their phonemes and to represent them with graphemes. It requires teaching the major GP relations and how to use them to decode words by transforming graphemes into blended phonemes. Reading words in decodable books provides decoding practice and builds students' sight vocabularies. These components of systematic phonics instruction enable children to move into the next phase.

Full Alphabetic Phase

In this phase, children have learned the major GP relations comprising the writing system. They can apply a decoding strategy to read new words. They can apply this strategy to teach themselves new words encountered in text (Share, 2008).

Students are able to process complete GP connections in words to store them in memory for sight word reading and spelling. They are able to read familiar words automatically. They become able to remember the correct spellings of words. Their sight word vocabulary grows as

they practice reading text. Several studies have provided evidence for these learning processes (Ehri, 2020).

Consolidated Alphabetic Phase

This phase emerges when children have acquired a substantial bank of sight words stored as whole units in memory, and when they have acquired more extensive knowledge of the writing system consisting of syllabic and morphemic spelling–sound units.

These multi-letter units have been formed by consolidating GP units. Students can use knowledge of these consolidated units to decode new words and add them to their sight vocabulary. Rather than decode individual GP units, this knowledge enables readers to break words into larger onset rime units (e.g., *st-art*, *spl-ash*), syllabic units (e.g., *in-ter-est-ing*), and morphemic units (i.e., affixes and root words such as *un-happi-ness*) to decode them.

In one study, we taught students to decode multisyllabic words by breaking spellings into units that mapped syllables in the pronunciations of words (Bhattacharya & Ehri, 2004). Following training, they performed much better in remembering the taught words and reading and spelling new words than a comparison group who practiced reading the same words without breaking them into syllabic units.

Implications for Instruction

How does phase theory translate into instructional practice? It underscores the importance of equipping students with foundational knowledge when they begin learning to read. This includes grapheme–phoneme knowledge, phonemic awareness, and decoding skill. These skills are most effectively taught in systematic phonics programs where students learn and apply the major GP relations to decode words and to store them in memory.

Phase theory provides a framework for assessing how advanced students are in acquiring literacy skills when they begin school, and which skills are needed to grow their ability to read and spell words.

Phase theory focuses on the acquisition of sight words and the processes that enable students to read words accurately and automatically from memory. If phonemic awareness, knowledge of GP relations, and decoding skill are taught systematically when instruction begins, students may spend less time in the partial alphabetic phase.

Phase theory points to the importance of students mastering the major GP relations and decoding skill. As beginners practice reading text at their level on a regular basis and applying decoding skill to read unfamiliar words, their memory bank of sight words grows rapidly. As they acquire knowledge of multi-letter spelling units, decoding multisyllabic words becomes easier.

In sum, phase theory shows that reading and spelling skills are acquired gradually and require instruction and practice in order for students to become proficient in reading words automatically and spelling words accurately.

TAKE ACTION

1. Assess each students' level of literacy development and decide whether the instruction they are receiving is appropriate in light of the information presented here.
2. Evaluate your phonics curriculum to determine whether and how well it teaches phonemic awareness, GP relations, decoding skill, and sight word learning.
3. Examine whether the A–Z letter–picture pairs in your classroom are letter-embedded picture mnemonics or pictures unrelated to the shapes of letters.
4. Try creating your own set of letter-embedded picture mnemonics to teach the five short vowels. Use these to teach students who have not yet learned them.
5. For students who are unable to segment spoken CVCs into phonemes, try giving them mirrors and directing their attention to mouth positions and movements.

Conflict of Interest

None

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