Mrs. Lopez is an elementary special education teacher working with students with severe reading difficulties. She is an experienced, skilled teacher with many teaching strategies in her repertoire. Though she was trained to teach reading with a literature-based, whole language approach, she has come to realize that many of her students need something more to develop the foundational skills of reading. Mrs. Lopez is convinced that students with reading-related learning disabilities must have intensive instruction in word recognition to develop into successful readers. She has diligently sought improved methods for teaching word recognition through professional development workshops and other sources. Many of the workshops she has attended stressed the importance of letter-sound correspondences and teaching students to sound out words. She has also learned about practices for teaching students to decode words by using patterns in words or “word families,” where groups of words with similar rimes (e.g., /ake/ in rake, fake, take) are taught together. She has used both methods with some success and has read about both approaches in professional journals (see box, “What Does the Literature Say?”).

Mrs. Lopez is wondering if they are equally effective. Most puzzling is that available materials, and workshops always emphasize either letter-sound blending or word patterns. Mrs. Lopez wants to use research-based strategies whenever possible, so she is wondering if she could simply choose which method she wants to use for particular students. Maybe it would be effective to use both methods simultaneously to give her students multiple strategies. Or, would this confuse her students? Mrs. Lopez wants what is best for her students but has been unable to find answers to her questions.

As the field of education has devoted more and more research to finding successful ways to teach children to read, it would seem that the answers to Mrs. Lopez’s questions would be easy to find. Most of the materials available for teaching reading, however, subscribe to either “sounding out” strategies or “word family” strategies, without sufficient explanation of why one method is favored over others. Although many effective special education teachers are using “balanced” approaches in that word-recognition strategies and skills are taught both in isolation and in the context of reading (Rankin-Erickson & Pressley, 2000), the specific strategies employed are often based on philosophies in reading rather than proven effectiveness (Vaughn, Moody, & Schumm, 1998).

For example, word-family instruction is often associated with literature-based, holistic instruction because breaking words into familiar patterns more closely resembles whole word instruction than does breaking a word into its individual sounds. Systematic letter-sound blending is often associated with phonics-oriented approaches and consists of using the smallest component parts, letters and their corresponding sounds, to arrive at the pronunciation of the word. Factors such as when a teacher received training, whether they have both general and special education experience, and the extent to which they have been involved in district or school-based
What do we know about letter-sound blending and word patterns?

Word recognition is a key ingredient of reading acquisition (Adams, 1990). To become a fluent, independent reader, a child must learn how to recognize words and decipher print to make meaning (Chard, Simmons, & Kameenui, 1998). It would be virtually impossible to teach beginning readers every word they may encounter in text. Consequently, it is vitally important that students learn generalizable techniques for reading words. Early reading instruction requires explicit instruction in strategies for word recognition. Letter-sound blending and learning familiar word patterns (i.e., “word families”) are important and compatible strategies in teaching word recognition to students with reading disabilities.

**Letter-Sound Blending**

Letter-sound blending teaches students to blend the individual sounds (phonemes) in a word together to form a meaningful word. For example, to read the word *sit* the student would look at each letter and say (or think) each sound /s/, /i/, /t/, then blend those sounds together to make the word *sit* (see Figure 2 for a sample lesson). Mrs. Lopez has taught word recognition using letter-sound blending for many years.

Instruction in letter-sound blending for beginning readers involves teaching a set of letter-sound correspondences followed by instruction in blending the phonemes to read words. There are programs that successfully use this technique (e.g., Engelmann & Bruner, 1988; Sprick, Howard, & Fidanque, 1998). Also, most teachers are familiar with this type of instruction as they encourage students to “sound out” words. This technique is based on research showing
What Does the Literature Say About Decoding Strategies?

- Letter-sound decoding instruction improves students' word recognition ability (Foorman et al., 1998).
- Letter-sound blending may be a necessary preskill before analogizing can be taught (Ehri & Robbins, 1992).
- Analogizing instruction improves students' word recognition ability (Gaskins et al., 1992).
- Young readers can be taught to use a clue word to read related words (Goswami & Bryant, 1992).
- Letter-sound blending and analogizing instruction improve students' word recognition abilities to a similar level (i.e., one method is not better than the other; Haskell, Foorman, & Swank, 1992; Joseph, 2000; O'Shaughnessy & Swanson, 2000).
- Students perform at higher levels when letter-sound blending and analogizing are both taught (Gaskins, Ehri, Cress, O'Hara, & Donnelly, 1997; Lovett, Lacerenza, & Borden, 2000).
- Students are explicitly taught letter-sound correspondences and blending (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; National Reading Panel, 2000). Recent evidence also suggests that effective decoding instruction should be explicit and systematic, that is, taught intentionally in a logical sequence, rather than embedded within more global literacy experiences (e.g., Torgesen, et al., 1999). Just as the evidence suggests, Mrs. Lopez has found that many of her students are successful in acquiring this strategy for word identification.

Word-Family Instruction

Similarly, using larger units of words, such as word families, has been shown to be an effective word-recognition method for students with reading disabilities (Gaskins, Gaskins, & Gaskins, 1992; Lovett & Steinbach, 1997). Mrs. Lopez learned about teaching word families through a series of workshops. She has also purchased books with activities for teaching and practicing these strategies. Word-family instruction teaches students to use word patterns, or families, to read unfamiliar words. The word pattern -- typically used involves the vowel and final consonants of the word, called the "rime" (e.g., the /at/ in cat or the /ek/ in beak). The initial consonants are referred to as "onsets" (e.g., the /c/ in cat or the /b/ in beak). With this method, the student is taught to blend the onset letter(s) and the ending rime pattern to read words. For example, the pattern or rime -it is taught. Then students can blend numerous onsets with the rime unit to read sit, fit, slit, bit, and any other words with the -it rime (see Figure 3 for a sample lesson).

Instruction can also begin with a keyword, such as "sit" in the previous example, and move to figuring out new words that have the same pattern. In this way, the student moves from the "known" to the "new." Then students are instructed to use the keyword to assist them in reading other words with similar patterns. For example, if the student knows the word sit, he or she can use the word pattern -it to read bit, kit, and fit. This is often referred to as "analogizing." Analogizing capitalizes on what the students already know (e.g., sit) to teach them new words (e.g., bit, kit, fit). Students are taught to use word parts from known words to make logical decisions about unfamiliar words.

Again, Mrs. Lopez has found that many students with reading disabilities are successful in acquiring this strategy and have enjoyed the activities she has incorporated in her reading program. On the surface, she has been unable to ascertain whether the word-family strategy is more or less effective than the letter-sound blending strategy.

As you can see from the research, both methods for teaching word recognition have been shown to be effective, just as the information Mrs. Lopez collected suggested. Young readers can improve their word-recognition abilities with letter-sound blending instruction or word-family instruction. Does this mean that Mrs. Lopez can use a well-designed program of either technique and her students will do well, or should Mrs. Lopez use both methods for her students to excel?

In fact, more recent research is suggesting that both methods should be taught (Lovett, Lacerenza, & Borden, 2000). Some researchers have suggested that students must learn to recognize words in a meaningful way...

Word Recognition: The Complete Package

- Letter-sound instruction.
- Letter-sound blending of words.
- Analogizing words.
- Less phonetically regular words.
- Spelling words.
- Reading connected text.

Guidelines for Teaching Decoding

- Select words that
  - Consist of previously taught letter-sound correspondences or letter combinations.
  - Progress from short vowel-consonant (VC) and consonant-vowel-consonant (CVC; 2 or 3 letters) words to longer words (4 or 5 letters) such as at, sat, slit, splat.
  - Initially contain continuous sounds in the initial position.
- Blend individual sounds without stopping between them.
- Follow sounding out of a word with its "fast" pronunciation.
- Move from orally sounding out words to silently "sounding out" words.
Figure 3. Sample Beginning Word-Family Lesson

This is an example of an appropriate activity for students who have mastered some letter-sounds and have mastered blending sounds to decode 3- and 4-letter words.

Prerequisites: Ability to blend 3- and 4-phoneme words
New letter-sound: /k/
Review letter-sounds: /l, /v, /p, /t, /n, /s, /a, /v, /o, /h, /g, /o/
Skill words (containing only mastered review-letter-sounds): top, fit, hat, hop, plan, stop, ham, dip, glad, split
New rime pattern: -and
Practice words: hand, land, stand, sand
Materials for activity: Paper bag or box; cards with individual letters or blends on them (h, l, st, s); cards with the rime pattern, one for each student

Lesson:
1. Show the letter k and model the sound.
2. Lead the students in pronouncing the sound of k.
3. Test students as a group and individually on the sound of k.
4. Review previously taught letter-sounds by showing letters and asking students to say the sound.
5. Review skills by presenting a list of words containing previously taught letter-sounds and rimes. Words can be presented on the board or on flashcards. Have students read each word.
6. Introduce students to the rime (-and). Have students use blending skills to decode the rime.
7. Model making a word with the rime by placing a letter card in front of the rime pattern. Model reading the word and lead students in blending the onset and rime to read the word.
8. Place a different letter card in front of the rime and ask the students to say the onset and the rime and then read the word.
9. Pass out a rime card (-and cards) to each student. Place the individual letter cards into the bag or box.
10. Have students take turns reaching into the bag to remove one letter.
11. Have each student place the letter at the front of the rime card to form a word.
12. Ask students to blend the onset and rime and read the word.
13. Repeat steps 10-12 several times.

How Can We Effectively Use Both Letter-Sound Blending and Word Patterns?

Because letter-sounds and blending are necessary preskills to word recognition, we suggest teaching these skills first. Because students are able to generalize better using word families and, in fact, advanced readers use onset-rime when reading and not individual letter-sound blending (Coltheart & Leahy, 1992), word family instruction seems to be an appropriate next step in advancing the reading skills of students. In the approach we present, word family instruction is intertwined with letter-sound instruction once students have mastered the ability to blend individual phonemes.

Letter-Sound Correspondence

To begin instruction, students should be taught letter-sound correspondences. A sequential introduction of letters and their sounds is needed. Most beginning reading programs include a set sequence of letter-sound introduction. Students should first learn what sounds individual letters make and then they can begin using this information to read words. It is important to introduce letters that are found in many words early in the sequence (e.g., teach /s/ early in the sequence because it is found in many words; teach /z/ later in the sequence because few words contain this sound).

Also, letter-sounds that can be confused should be separated in the sequence. For example, the short vowel sounds for /e/ and /i/ should not be taught consecutively because their sounds are so similar and can be easily confused by students. Later, it may be necessary to intentionally teach students to discriminate between easily confused sounds by juxtaposing sounds.

Decoding With Letter-Sound Blending

Instruction in decoding can begin as soon as students know enough sounds to make words. For example, if students know the sounds /s/, /t/, and /a/, the student can be taught to blend the sounds and read the words at and sat.

Improved scores in reading result when students are explicitly taught letter-sound correspondences with blending.
Even though there are only a few words the students can read initially, it will give them early opportunities for practice in using their letter-sound knowledge to read real words. This initial practice in blending is necessary for the student to gain proficiency so that he or she can eventually blend sounds quickly and silently. Instruction should continue introducing new letter-sounds one by one, followed by practice blending sounds into words. Only words containing sounds the student has mastered should be used. For example, if a student knows the sounds /s/, /t/, /a/, /n/, /p/, and /t/, the word pat is appropriate but the word bat is not because the student has not mastered the sound for the letter b. Likewise, the word pan is appropriate but the word pain is not because ai is a letter combination that makes its own sound and has not yet been taught.

**Practice, Practice, Practice**

Teachers should continue teaching new sounds and practicing decoding with different words to achieve mastery. These words should also be practiced in connected text, sentences, and stories, even if the first stories are quite short. Students need practice reading with the skills they have acquired. The number of words they can read and the length of the text will build quickly as students master more sounds. In addition to this instruction, less phonetically regular words (i.e., irregular or exception words, such as was, the) that do not follow regular sound patterns should be taught to assist students in reading beginning text. Beginning reading instruction, then, should include instruction in the following:

- Individual letter-sounds.
- Blending sounds into words.
- Less phonetically regular words that are common in text.
- Reading connected text (sentences and short passages).

**Word Families and Analogizing**

Once students have the ability to blend sounds and decode three- and four-syllable words, instruction in word families and analogizing can begin. The point at which a student is able to quickly and accurately decode words by blending sounds may vary for different students. This skill is necessary, however, for students to understand that words are composed of individual sounds before they can take full advantage of the chunking involved in using word families.

Teachers should choose rime patterns that contain only the sounds the student has mastered. For example, if a student has mastered /l/, /t/, /p/, and /n/, the rime -in can be taught with the words in, pin, tin. As the student learns more sounds, additional words can be practiced with -in and new rimes can be taught, such as -it. To find appropriate rimes teachers will need a list of rimes that occur frequently in written words (e.g., Cunningham, & Hall, 1994; Fry, Kress, & Fountoukidis, 1993). Some rimes have a higher utility (are more common in words) than other rimes. These high-utility rimes are important to teach because students can access many words that they will encounter in text. The choice of rimes to teach should be guided by two guidelines: (a) the sounds the student knows, and (b) the utility of the rime. Just as in letter-sound blending, rimes that contain sounds the student does not know should not be taught because the student will not be able to understand the individual sounds in the rime and will be less likely to use the rime in unknown words.

Each rime should be taught by allowing students to use their knowledge of blending. The students should blend the sounds of the rime together to determine how to read the rime. Then, practice with words in the family can help the student to see that they can use this larger chunk of letters to read faster rather than blending each individual sound.

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**Guidelines for Teaching Analogizing**

- Select rimes that consist of previously taught letter-sound correspondences or letter combinations.
- Select words that progress from simple onsets, then blends; then multisyllabic words.
- Provide opportunities for students to find similar patterns in words and teach them to use words they know to read other words.

**Advanced Letter Combinations**

Once students have mastered the individual letter-sounds, more advanced correspondences with letter combinations can be taught. Similar to teaching letter-sounds, a sequence is needed to teach the letter combinations. Teachers should move their students through this sequence by teaching each letter combination in isolation to mastery and then placing it in words.

For many students, analogizing instruction can continue with these sounds by having students blend the sounds in the rime to initially read the rime. This will help them understand the new components of the rime. For example, when students know the most common sounds of all the consonants and vowels and the letter combinations /th/, /er/, /ing/, /sh/, /wh/, /qu/, /ol/, and /oa/, the rime -cat can be taught with words similar to boat, throat, and float. Likewise, the rime -oad can be taught. There may be some students that need the practice of letter-sound decoding with letter combinations before they will be able to easily use the rime patterns. As with all instruction, teachers should remain flexible with their instruction and be sure that students are mastering the techniques taught. Otherwise, instruction should back up to easier tasks.

**Structural Analysis**

More advanced students who have mastered the letter-sounds and letter combinations are ready for structural analysis. Structural analysis is the use of structural units or groups of words such as prefixes, suffixes, and base words to
Adapting a program, however, will require expert knowledge in letter-sound blending, word families, and an understanding of the roles these strategies play in reading. Fortunately, knowledge of effective instruction in word recognition can be taught to teachers in a short amount of time. In a study with preservice teachers, we were able to train novice teachers using this approach with only 4-6 hours of instruction. As more research is conducted using both of these methods, we hope that instructional materials will begin to provide sufficient amounts of student instruction in both techniques.

References

IN WORD FAMILIES, GROUPS OF WORDS WITH SIMILAR RIMES (E.G., /AKE/ IN RAKE, FAKE, TAKE) ARE TAUGHT TOGETHER.

read words. These units will allow students to progress into multisyllabic words.

Each word-study lesson should include instruction in the following:
- Letter-sound blending or analyzing.
- Practice with spelling targeted words.
- Instruction in less phonetically regular words.
- Practice reading targeted words in connected text.

All of these steps are critical components of effective word recognition instruction.

Final Thoughts
Given the fact that phonological deficits are one primary cause of reading disorder (Wolf & Bowers, 1999), effective word-recognition instruction is a critical component of any reading intervention. Using the information provided in this article, Mrs. Lopez should systematically combine both word-recognition strategies to allow her students with reading disabilities to excel in their word-recognition abilities. Unfortunately, the majority of beginning reading programs available to general or special education teachers do not combine both of the methods discussed in this article.

A good reading program, however, will come with an excellent sequence for letter-sound introduction and activities for teaching one of these methods. It is a rather simple adaptation to teach the method not given in the program, using words and text available in the materials.

For example, a program that emphasizes word-family instruction can be adapted to instruct in letter-sound blending. Rather than initially teaching the rime given, the teacher can have the students sound out each phoneme to read the words until this skill is mastered. Then instruction in the rimes can be given.

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