

# ANALYZING WORDS AND MAKING DISCOVERIES ABOUT THE ALPHABETIC SYSTEM: ACTIVITIES FOR BEGINNING READERS

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*Teachers and researchers look again at the Benchmark Word Identification Program, explaining how they modified it to meet the needs of children who continued to have difficulty figuring out the alphabetic system of written language.*

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A child's ability to profit from opportunities to learn to read and spell is based on a foundation of language skills built during the preschool years. Children who enter first grade with a strong foundation are aware, for example, that the white spaces between groups of letters signal where words begin and end. They can segment words into individual sounds as they attempt to write them, for example, breaking *dad* into three sounds, /d/ /a/ /d/. They can match sounds with letters, and they can rhyme simple words such as *not-pot*, *will-pill*, and *can-man*. Do these first graders who possess a language foundation that includes concept of word, phonemic segmentation, sound-letter connections, and rhyming need to receive language arts instruction that emphasizes these aspects of language? Perhaps not.

But what about children who enter first grade without this foundation? During the past decade, systematic and explicit instruction designed to help students acquire this foundation has not been commonplace. Instead, instruction has featured exposure to good literature and frequent opportunities to read, speak, write, and listen. Although such an approach is necessary and may be sufficient for students who possess a solid foundation in language when they enter school, it

is sorely deficient for those who lack this foundation. These are the students we teach in our school. They come to us with a history of reading failure or with multiple indicators that they are at risk for reading failure in first grade. Despite at least average intelligence and the same opportunity to learn about language as their peers who readily learn to read, our students often have not figured out where individual words begin and end, how sounds and letters are matched, and, perhaps most significantly, how to segment words into sounds.

Some of these delayed readers have received instruction in decoding prior to entering our classes. All have engaged in process writing using invented spellings. All have held little books and followed along while an adult read the books to them. Some have even memorized these books. Nevertheless, they have not succeeded in mastering even a basic pre-primer sight vocabulary, and decoding unfamiliar words is completely foreign to them. These children are unaware of consistencies in our written language. Because they have made so few discoveries about how written language works, they tend to approach each new word as a unique form to be memorized, rather than as a code that can be broken by discovering similarities in sounds and letters among words.

How much do children need to know about language in order to become capable readers and spellers? Studies of readers as they proceed through the phases of word learning suggest that the more functional knowledge students have about the alphabetic system and how words are structured systematically to represent speech, the more fluent and automatic they become as readers (Adams, 1990; Gough, Ehri, & Treiman, 1992; Rieben

& Perfetti, 1991). Research indicates that students having difficulty learning to read are the ones who understand the least about the alphabetic system (Rack, Snowling, & Olson, 1992). Exposure to print has not solved the problem for them. If such children are to develop the knowledge about language that they need to become capable readers and spellers, their classroom environment will need to be crafted skillfully, and the instruction they receive will need to be scaffolded and paced sensitively to enable them to develop this foundation of knowledge. At least, this is what we have found for the delayed readers we have taught during the past 25 years. In this article, we describe word learning activities that we have devised to help at-risk readers make discoveries about the alphabetic system. We also discuss why we regard these discoveries as important for students' progress in learning to read and spell.

### Background, Theory, and Research

Several years ago we tackled the problem of improving our literature-based beginning reading and writing instruction by adding the Benchmark Word Identification program (BWI). This program introduces 120 key words containing high-frequency phonograms. It teaches students to decode new words by analogy using the key words which are displayed on a word wall (Gaskins et al., 1988). In general, we were pleased with the results. Our beginning readers were able to decode and spell significantly more words by the end of the year than they had in previous years. At each grade level our BWI students tended to read at higher levels than our students from previous years who had not participated in the program. However, there were still some students who continued to read slowly and who lagged behind in spelling. The consensus was that the BWI program, while effective for many of our students, was not meeting the needs of some students. As a result, in the fall of 1994 we decided to examine the research literature to see what might be missing in our beginning reading program. Various studies helped us to understand how beginners learn to read words. Based on theory and research findings, we devised ways to modify instruction at the beginning level (Gaskins, Ehri, Cress, O'Hara, & Donnelly, 1996-1997).

According to Ehri (1992, 1994), there are at least four ways to read words: by sight, by letter-sound decoding, by analogy, and by contextual guessing. To read words by sight, readers retrieve information about the words stored in memory from previous experiences reading the words. Letter-sound decoding involves sounding out the letters and blending them into sounds. Analogizing consists of accessing memory information about familiar sight words to read unknown words, for

example, reading *shower* by recognizing how it is similar to the known word *flower*. Contextual guessing involves using meaning-bearing cues in preceding text or in pictures to predict what a word might be. Sight word reading is the principal way that familiar words are read. Unfamiliar words that have not been stored in memory such as sight words are read by decoding, analogy, or contextual guessing.

The conventional view of sight word learning as students memorizing the visual forms of words is not accurate. Rather, a very different process is involved, one that requires students to know and use letter-sound correspondences. According to Ehri (1992, 1994), the most effective way to store sight words in memory involves bonding the written letters in individual words with their spoken identities already present in memory. This bonding between the spellings of words and their spoken forms occurs when readers analyze the letters in words as letters symbolizing sounds detected in the pronunciations of words. To do this, readers must know how to segment the pronunciations of words into

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sounds and they must know which letters typically symbolize these sounds in words. For example, the pronunciation of the word *speech* can be segmented into four sounds: /s/ /p/ /e/ /ch/; its spelling can be analyzed into four letter units, *s*, *p*, and digraphs *ee* and *ch*, which symbolize the sound units. To the extent that letters in spellings are bonded to sounds in pronunciations of individual words, the spellings of those words are retained in memory as the word's visual representation and are used to read words by sight. Results of various studies performed by Ehri and Wilce (e.g., 1987a, 1987b), as well as a theoretical paper by Perfetti (1991), support this view of sight word learning.

Beginning level readers do not start out reading words by sight in this way. Ehri (1994, 1995) distinguishes four phases in the development of sight word learning: pre-alphabetic; partial alphabetic; full alphabetic; and consolidated alphabetic. The least mature pre-

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alphabetic beginners read sight words by remembering distinctive *visual cues* in or around the word. For example, visual cue readers might read the word *donkey* by remembering the tail at the end of the word or the word *little* by remembering the tall posts in the middle. They select one visually distinctive cue and ignore all other cues. This is because they lack knowledge of letters and phonemic awareness (Gough & Hillinger, 1980).

Once beginners acquire some knowledge of letters and their names or sounds, and once they can distinguish some sounds in the pronunciation of words, they shift to the second phase which involves *phonetic cue* reading. They select one or a few salient letter-sound cues to remember how to read words. However, the cues selected are *partial* and involve only some of the letters present in spellings, perhaps only the initial and final letters. For example, phonetic cue readers might read *balloon* by detecting and remembering the presence of initial *b* for the sound /b/ at the beginning of *balloon* and final *n* for the sound /n/ but fail to remember much about other letters in the word.

Neither form of sight word reading, by visual cues or partial phonetic cues, is adequate. Using visual cues to remember how to read individual words places a huge burden on students' memories because there is no system to link spellings of words to their pronunciations. Each connection must be created and remembered on its own. Remembering phonetic cues is easier because letters and sounds provide a system linking spellings to pronunciations. However, several words may share some phonetic cues, for example, *balloon* and *button*, causing beginners to misread these somewhat similarly spelled words. In the third phase of sight word learning, referred to as the *full alphabetic* phase, these problems are solved. As described earlier, readers analyze the spellings of words fully as a sequence of letters symbolizing sounds detected in the spoken forms of words (Ehri, 1992; Perfetti, 1991). These connections between spellings and pronunciations are retained in memory and activated when words are read by sight. Even similarly spelled words are distinguished and remembered as different words.

The fourth phase is referred to as the *orthographic or consolidated alphabetic* phase. This form of sight word learning emerges after readers have had sufficient experience reading sight words as fully analyzed sound-letter forms. As a result of learning to read several different words containing the same syllabic or subsyllabic spelling patterns, the sound-letter blends become consolidated into larger units having characteristic spellings and pronunciations, for example, *-ing*, *-ment*, *-tion*, *-ay*, *-est*, *-ill*, *-ock*, *-unk*. Decoding new words

is much easier if these letters are known as units than if the letters must be blended into their corresponding sounds, for example, decoding *jump* by blending two units, *j-ump*, versus by blending four units, *j-u-m-p*. Evidence for alphabetic consolidation is provided by Glushko (1979), Juel (1983), and Treiman,

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Goswami, and Bruck (1990) among others. Teaching full-alphabetic-phase readers to read new words by analogy to known words may help them consolidate letters into larger units by drawing their attention to spelling patterns shared by different words and by causing them to process the letters as larger units. This is the process emphasized in BWI.

### Revising Instruction

The phase theory of sight word reading helped us realize that we may have been expecting some students to analogize in their word reading before they were able to. Recognizing that an unfamiliar word such as *join* has the same letter pattern as the key word *coin* requires that students have the key word preserved as a sight word in memory in a fully analyzed form so that shared letters are recognized. Students who have not progressed beyond the visual cue (pre-alphabetic) or phonetic cue (partial alphabetic) phases would have difficulty storing the key words of the BWI program fully in memory and using them to read unfamiliar words.

We realized that we needed to help students develop the foundation for advancing to the full alphabetic phase in their sight word learning in order for them to be able to analogize. Once they learned to segment spoken words into sounds and to match them to letters, they would be able to store the key words as fully analyzed sight words in memory and hence access them to read unfamiliar words sharing the same letters. What seemed to be missing in our analogy approach to word learning was teaching students how to: (a) fully analyze spoken and written words and (b) make discoveries about the structure of our alphabetic spelling system.

Based on our belief that there needed to be more emphasis on fully analyzing words and on making discoveries about letter-sound regularities in words, we decided to add an emphasis on word analysis and discovery to the original BWI program, as well as to increase opportunities for students to apply their language discoveries when they read engaging text. We created a 5-day cycle of activities to be employed during the word identification (i.d.) portion of literacy instruction. During this time students are introduced to three or four new key words and provided with reading and writing practice that is in addition to their daily literature-based reading and process writing. This cycle of word i.d. activities is repeated each week. Although activities may differ on each day of the cycle, each day includes a lesson on analyzing words and discovering how our language works and consists of four parts: discussion, word analysis, guided practice, and spelling. Each of these parts is reinforced during other reading and writing activities throughout the day. A description of each part of the word i.d. activities follows.

#### Discussion

Each day's lesson begins and ends with discussion. Discussion serves several purposes: (1) it clarifies goals, rationale, and strategies for analyzing and decoding words; (2) it increases students' metacognitive awareness regarding how they can take control of making discoveries about the structure of their language and about learning words; and (3) it allows students to share discoveries from their work as "word detectives."

The strategies that receive the most attention during discussion are learning words in a fully-analyzed way, discovering consistencies in our language, noticing spelling patterns in words, and using known words that contain these spelling patterns to decode unknown words. Students discuss *what* strategies they are learning, *why* they are important, *when* they can use them, and *how* to use the strategies. For example, on December 12 the discussion of what, why, when, and how began like this:

Today's goal in word i.d. is to learn three new key words. These are words that have common spelling patterns. So if we have these new key words fully analyzed in our head, then when we come to another word with the same spelling pattern we'll be able to figure it out. Okay, so today's goal is to get our new key words in our head in a fully analyzed way, from the beginning to the middle to the end of the word. . . . That means that you will match up every sound you hear in a word to the letters that represent those sounds. You are going to store in your head the letters that represent each sound so

you'll be able to read the word the next time you see it. If you only look at some of the letters when you are looking at the word for the first time, you might not be able to get that word out of your head when you need it again. Your brain won't know what sound to say for the letters you never looked at.

As soon as possible during the school year, the teacher involves students in the discussion of the what, why, when, and how of the strategy. Thus, by spring, a typical discussion sounds like this:

- T: What strategy are we going to use today to learn our three new key words?  
 S: Fully analyze the words.  
 T: Why do we do this?  
 S: To hook the letters to the sounds.  
 S: So we will be able to get the word out of our head when we need it.  
 T: When can you use this strategy of fully analyzing words?  
 S: Any time we want to remember a new word.  
 T: How do you fully analyze a word?  
 S: Stretch out the word and match the sounds to the letters.

We have discovered that, when students understand the rationale for processes such as fully analyzing words, or generating and applying knowledge about how our language works, they are more motivated to use the strategies they are learning. Emphasis during these discussions is also placed on students developing metacognitive knowledge about their own learning processes. For example, students develop the awareness that it is a good idea to be reflective and to take time to analyze words fully so that all the letters in these words will be retained in memory. One way teachers develop this awareness is by sharing real-life examples of what happens when a word is not fully analyzed. One teacher shared the consequence of not fully analyzing a word in this way:

I was reading a story in preparation for discussing it with the class. The story was about some girls and boys playing soccer. I read, "The boy kicked the ball to a *goal*." I thought that the team won the game. But, when my students read the story, they disagreed with me. They thought the game ended with neither team scoring a goal. When I went back and looked carefully at the words in the story. I was so embarrassed. I discovered that it really said, "The boy kicked the ball to a *girl*."

The teacher wrote *goal* and *girl* on the chalkboard and asked, "Can anyone tell me what mistake I made?" On another occasion the teacher told her class about fixing a special dinner for her husband that did not turn out as expected because she misread the recipe. She put two *tablespoons* of salt in the meat sauce when the recipe really called for two *teaspoons*. Students love hearing

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these stories and often refer to them when discussing their own confusions about what they have read.

Another important part of the discussion portion of the lesson is the teacher's explicit teaching, modeling, and scaffolding of how to stretch out sounds in words and to self-talk about the sounds and the match between the sounds that are heard and the letters that are seen. For example, on December 12 the teacher supported students in fully analyzing the word *red*.

T: The first word we are going to analyze is the word *red*. Stretch it with me—/r/, /e/, /d/. Okay, how many sounds do we hear?

S: (In unison.) Three.

T: We hear three sounds. How many letters do we see? (Teacher places the word card for *red* on the chalkboard.)

S: Three.

T: So, if we hear three sounds and see three letters, that tells me something important about that word. (Many hands are raised and the teacher calls on a student.)

S: That every letter has a sound.

T: Would you check your goal? I love the way you had your hand up. I could tell that you were right with me. Every letter has a sound. That means that I need to be able to account for every sound by the letters that I see—that means that every single letter represents a sound. Now take a look at the vowel. What's the vowel?

S: *e*

T: Where is the vowel? Where it is is very important.

S: Between two consonants.

T: Right—between two consonants. Let's think—what have we learned about an *e* that comes between two consonants? It seems to me that we know the sound that vowel's going to make. If it's the only vowel in the word and it's between two consonants, who can tell me the sound that vowel will make? I don't want to know what it won't do. I want to know what it will do. What sound will it make?

S: /e/

T: How did you know that?

S: Because I know *let*.

T: Okay, we have another word on the word wall that has the same vowel in the same location. The *e* is in between two consonants and is the only vowel so the sound will be . . . ?

S: /e/

T: Okay, very good. Let's stretch it and check it out.

S: (In unison.) /r/, /e/, /d/.

T: Okay, who can tell me another word on the word wall that has a vowel that will make the same sound.

S: *Let*.

T: *Let* is one. There's another one.

S: *Tell*.

T: Is there any other word wall word that would be similar to *red* in any way? Now be careful about the information you are using about how these letters and sounds are matched up. Make sure you're accurate.

S: *Not*.

T: Explain what you mean.

S: They both have one vowel, and they're between two consonants, and they don't say their name.

Students are cued to analyze a word in this way by following a chart posted on the chalkboard in the classroom. The Talk to Yourself chart lists six steps:

1. The word is \_\_\_\_\_.
2. Stretch the word.  
I hear \_\_\_\_\_ sounds.
3. I see \_\_\_\_\_ letters because \_\_\_\_\_.
4. The spelling pattern is \_\_\_\_\_.
5. This is what I know about the vowel. \_\_\_\_\_
6. Another word on the Word Wall like \_\_\_\_\_ is \_\_\_\_\_ . They are alike because \_\_\_\_\_.

Each day students are asked to share with the class what they have discovered about how our written language works. Expressing the discoveries they have made about words presents students with an opportunity to both monitor what they understand about features of our language and to obtain clarification when necessary. This public talk about language also provides students with the metacognitive tools they need to be in control of learning words on their own. Perhaps most important of all, students love sharing their discoveries and witnessing the astonishment of adults when students notice regularities that have not been mentioned in class or that adults themselves have not recognized. Some examples of students' discoveries in their own words are given below.

In the word *gone*, even though there is an *e* on the end, the *o* doesn't say its name.

There is (sic) two ways to spell *tail*: *t-a-i-l* and *t-a-l-e*.

In the word *soil* the *o-i* says /oi/.

*y* at the end of a two-beat word can say *e*.

In *Noodles* (name of a character in a story) the *o-o* says /oo/ and in *look* it does not say the same.

I discovered that my name (Nathan) has two letters that make one sound—*t-h* says /th/.

In the word *Niki* its a two-chunk word, and both vowels say their own name.

### Word Analysis

Students are provided with opportunities for guided practice in fully analyzing words, as well as in developing metacognitive strategies for taking charge of their own word learning. They engage in activities that encourage and reinforce reflectivity and self-talk as they listen for

sounds in words and match those sounds with letters. Students become very excited about the discoveries they make about sound-letter matches. For example, one day early in the school year after students had analyzed the sounds and letters in the word *black*, the teacher asked,

*Expressing the discoveries they have made about words presents students with an opportunity to both monitor what they understand about features of our language and to obtain clarification when necessary.*

“What did you notice when you tried to match the sounds to the letters?” One 6-year-old threw up his hand and blurted out incredulously, “I don’t hear the *c*.”

Each day students analyze and make discoveries about sounds and letters in key words—words that have been selected for the program because they contain high-frequency phonograms (e.g., *-in*, *-and*, *-up*, *-et*, *-op*, *-ate*, *-ent*). The specific word detective activities vary but always require that students perform three steps: stretch out sounds in words, analyze and talk to themselves about each sound-letter correspondence, and summarize the clues they have discovered about sounds and letters in words. Often they share with a partner what they have learned about a word. On November 13, John and his partner had the opportunity to “show off” for the class the discoveries they discussed during their partner share. This is what John said (in quotes) about *long* as the teacher cued John from the Talk to Yourself chart.

The word is “*long*.” Stretch it out . . . “/l/, /o/, /ng/.” I hear “three sounds.” How many letters? “Four.” You have to explain why in the word *long* you hear three sounds but see four letters. “Because the *n* and *g* make one sound.” Talk about the vowel now. “It is between two consonants.” What is it? “*o*.” Another word on the word wall? “*King*.” How are they alike? “Both have an *n* and *g*, and they both make one sound.” That’s right. The *n* and *g* in both words represent one sound. What is the spelling pattern in *long*? “*o-n-g*.”

As the school year progressed, students remembered the prompts on the Talk to Yourself chart and could summarize these six aspects of a word with little or no teacher prompting.

Partner-share activities emphasize various facets of students’ analyses of key words. For example, on one day students might be asked to share with their partner a

summary, like the one above, of facts they have discovered about the sound-letter matches in one of the three or four key words featured that week. On another day each student may choose a key word learned earlier in the year, share with a partner a summary of the facts he or she knows about the key word, and pick another word on the word wall that has something in common with the key word that was explained to the partner. Another favorite partner activity is to change one of the vowels in a key word to make a new word and then explain how the new word was created. For example, one student said, “My word is *treat*. My new word is *trout*. I made this word because I know *e-a* makes one sound and *o-u* makes one sound—*e-a* says *e* and *o-u* says *ou* like in *ouch*. Do you agree?”

Another word-analysis activity is Ready-Set-Show. In this activity taken from the original BWI program, students copy on individual word cards several key words the teacher has written on the chalkboard. Then the words are pronounced, analyzed, and placed face up on each student’s desk. Following this preparation, students play Ready-Set-Show. The teacher pronounces a word, then students stretch and analyze the sounds they hear in that word and compare what they hear with the sounds in the several words that are written on the word cards on their desks. When the teacher says, “Ready, set, show,” students hold up the card that contains the word with the same sound or sounds as in the word the teacher read. For example, students listen to the teacher say *blanket*. They stretch and analyze all its sounds. Then they are asked to match its beginning sounds with the letters that begin one of the four key words on their desks (*black*). These steps are repeated for approximately twelve words, providing students with practice in phonemic segmentation and sound-letter matching.

#### Guided Practice

Each day students are given a variety of scaffolded opportunities to apply and explain what they are learning about words. Prior to beginning an activity, the teacher discusses with the students the reasons for the activity and solicits from them the rationale for fully analyzing words, both the key words being learned as sight words and the words being decoded. The goal of guided practice is that, through repeated encounters with words containing high-frequency features of our language, the number of fully analyzed words in students’ lexical memories will substantially increase as will their confidence in applying what they know about words to decode unknown words.

One form of guided practice is reading Predictable Rhymes, little books written specifically to feature

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spelling patterns in the key words that have been learned to date, especially the newly introduced words. Figure 1 presents an example of a predictable rhyme that features the key words *tent*, *round*, *skate*, and *ten*. On the day that these new key words are introduced, the Predictable Rhyme is also introduced. Teachers discuss background information related to the story, survey the text with students, and encourage students to make predictions about what will happen in the story. Then students listen to the teacher read the Predictable Rhyme. After hearing the text, the story is discussed with respect to meaning and rhymes, then students are given copies so they can choral read. Students are asked to point to each word as the text is read, and their success in doing this is monitored to foster awareness of the concept of word. On subsequent days students again read the Predictable Rhyme together, with the teacher stopping occasionally to allow a student or the class to "show off." Students love the opportunity to "show off" by reading a word, phrase, line, or verse or by explaining what they noticed about the words in the story.

**William's Room**  
by Irene W. Gaskins

William's room is full of toys.  
They're everywhere—  
In his bed, on the floor,  
Even piled high in a chair.

There's even a tent in William's room!  
The tent is round—  
But, it can't always be found.  
Yesterday his tent disappeared.  
Susan found it—it was under:  
father's black skate,  
ten stuffed animals,  
an old broken plate,  
his sister's Monopoly game,  
a heater grate,  
and lots and lots of trucks and cars.

Just ask William—he'll tell you,  
His room is magnificent.  
It's a place where he doesn't need consent  
To make a mess of great proportionment.

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**Figure 1.** A Predictable Rhyme Used To Feature Spelling Patterns

The culminating activity of the week is to have students read to partners the whole set of Predictable Rhymes accumulated from each week's lessons to date. Students also take home copies of the Predictable Rhymes and throughout the week read them as part of their thirty minutes of nightly oral reading to parents or other family members. Also, as part of their homework, they tell their parents what they have discovered about how our language works. Words in the Predictable Rhyme are used as a springboard for this discussion. Students dictate their discoveries about how our language works, and a parent or other adult writes these comments in each student's language log. Students take pride in telling their parents what they have discovered, and their parents are frequently amazed by the discoveries their children make about spelling regularities.

A few examples of discoveries that one student, Brad, dictated for his language log between November 6 and January 23 when "William's Room" was read are listed below. Although the children's discoveries are not always elegantly stated and sometimes are inaccurate, each provides a window into students' attempts to figure out how our language works. In Brad's case, for example, we see him trying to make sense of the strong *r* sound he hears in some words.

November 6: There has to be a vowel in every word or it's not a word. *t-h* makes a /th/ sound.

Sometimes like the word *right* you hear three sounds but there are five letters.

Sometimes like in the word *marching* the *a-r* makes the *r* sound.

November 9: Sometimes like in the word *word* the *r* takes away the *o* sound.

The word *wrong* has a *w* but the *w* makes the *r* say *r*.

November 15: In the word *out* the *o-u* says *ow* like in *ouch*.

November 27: *c-k* only makes one sound which is /k/.

Sometimes in a word with an *r* and a vowel together, the *r* takes over the sound of the vowel.

In the word *find* the *i* says its name but there is no other vowel to make the *i* say its name so its a mystery.

In the word *great* the *ea* says *a* because it doesn't follow the rule of two vowels together the first one says its name. The *a* takes away the *e* sound.

In the word *enormous*, at the end the *o-u* says *uh*.

January 2: In the words *name* and *make* and *hope* there is a special pattern which is vowel, consonant, *e*.

January 23: In the word *proportionment* the *t-i-o-n* says *shun* and the spelling patterns are *o* and *o-r* and *i-o-n* and *e-n-t...* and there are 12 sounds... and there are 14 letters.

As further in-class practice during the week, students search a one-page copy of the Predictable Rhyme to find, circle, and read words that have the same spelling patterns as the new key words featured that week. They also look for words that they can read because the words have the same spelling patterns as words they learned in earlier weeks. These words are underlined. After spending approximately five minutes hunting for words, individual students share words they can read in a specific line of the text, as well as the key words that helped them read the word. This Word Hunt is one of the students' favorite activities, and they audibly groan when the activity is concluded. The power they feel in their ability to decode difficult words is clearly visible in their reactions. Of course, words such as *magnificent* and *proportionment* are their favorites. Reading these "college" words makes them feel very good about themselves!

Further practice applying what they are discovering about language is accomplished later in the week by echo reading in an easy-reading trade book or a second little book written to reinforce the spelling patterns just introduced. The book is echo-read and discussed with respect to meaning and word features, then it too is sent home in the bag of little books that reinforce the spelling patterns that have been learned to date and are read nightly by the students. During echo reading students practically jump out of their seats because they are so eager to point out all the words that contain spelling patterns they know from the key words.

Another activity that students enjoy is Looking Through Words. This activity is composed of a one-page sheet containing six to ten columns of words. Each column begins with a key word under which are listed words or pseudowords, each one different from the one above it by only one letter. (Figure 2 illustrates three columns from Looking Through Words.) Students hold place markers under each row of words beginning at the top; a student is called on to pronounce the key word at the top; then everyone moves the card down to the next line. Another student is called on who announces the change in the word and pronounces the word or pseudoword that resulted from the change. Several children contribute to building the word as their cards are moved down the column, changes are described, and pseudowords and words are pronounced. Finally, the "college" word is revealed. Students love the feeling of accomplishment when they reach the bottom of the column and can pronounce the hard word. The entire class then reads the column of words and pseudowords in unison. For many of our students, Looking Through Words is their first experience looking carefully at every

and	not	her
an	noc	her mom
at	noc go	her mom he
ath	noc o	her mom e
bath	noc o skate	her mom e her
bath tent	noc o kate	her mom e ter
bath ten	noc o late	ther mom e ter
bath tun	choc o late	thermometer
bath tub	chocolate	
bathtub		

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Figure 2. Looking Through Words

letter in a word and noticing how a letter's placement in relationship to other letters affects its sound.

Students also complete a Rhyming Word Sort during the week. This activity is similar to the Rhyming Word Sorts that are part of the original BWI program. One-syllable words with the same spelling patterns as the key words for the week are presented in a word bank on the worksheet. The words are arranged so that no two words with the same spelling pattern are placed next to each other. The students' task is to underline the spelling patterns in each word, then write the word-bank word beneath the key word with the same spelling pattern at the bottom of the page. As students complete this activity, the teacher listens to each student individually decode the words in random order, making sure not to point to two words in a row with the same pattern. The student applies the analogy strategy by saying, "If this is (saying the key word at top of list), then this is (saying the word to which teacher points)." Figure 3 contains an example of a Rhyming Word Sort.

A second guided practice activity taken from the original BWI program is the Compare/Contrast worksheet. On this worksheet, one-syllable words with the same spelling patterns as the new words for the week are presented in sentences. Students circle the spelling



# Language Arts

Name \_\_\_\_\_

Date \_\_\_\_\_

*Word Bank:*

dim dame him cap came by fame lap game gap  
lame rap rim same nap tame

*Bonus Bank:*

brim chap cry blame fly grim frame flap dry  
prim fry shame pry scrap sky clap skim why

swim	my	name	map

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**Figure 3.** Rhyming Word Sort

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pattern in each of the underlined application words and write the key word for each underlined word beneath the word. When a student completes the sheet, the teacher reads each sentence to the student, stopping at the underlined word. The student says, "If this is (saying the key word he or she wrote), then this is (saying the underlined word)." This activity and the preceding activity focus students' attention on discriminating spelling patterns and applying what they know about key words to decode unknown words.

*Spelling*

To develop the ability to segment words into sounds and to reinforce the match between sounds and letters, students each day write key words from memory. Several different spelling activities are used. One activity employs Elkonin boxes (Elkonin, 1973). Students are provided with a spelling sheet that contains groups of boxes, each group containing the same number of empty boxes as there are sounds in each of the key words introduced that week. For example, if the first word to be spelled were *ship*, there would be three empty boxes next to number one on the spelling sheet. When the teacher pronounced the word, students would stretch out the sounds in the word, then put the letters *s* and *h* in the first box because *sh* represents one sound, then place *i* and *p* each in a separate box because each represents one sound. Figure 4 provides an example of Elkonin boxes marked for spelling *ship*, *let*, *right*, *name*, and *black* and shows how the boxes should

look after students have written the words. As students ponder what to write in each box, the teacher models aloud her own thinking about possible sound-letter matches.

For example, the teacher pronounced *ship* and said, "Hmmm. I hear one sound before the vowel, but I seem to remember that it took two letters to represent that sound." After students have placed letters for a word in the boxes, they share what letters they placed in each box and why. The next day students again stretch and spell words using Elkonin boxes. However, the correctness of each spelling is checked by chanting the spellings chorally after all three or four words have been written in boxes. Elkonin boxes are used to guide students' segmentation of words into sounds and to help students visualize the match between each sound and a letter or letters. After spelling words in Elkonin boxes for two days, students write the key words for the week, and words from previous weeks, without the boxes, as students do in the original BWI program. Words that rhyme and have the same spelling patterns as key words are also included as part of the spelling activity. Words are checked as students chorally chant the spelling of each word and put a small dot under each letter as it is said.

Phonemic segmentation and analysis of words are further reinforced by playing What's In My Head. This game, adapted from the original BWI program to match our new emphasis on fully analyzing the sounds and letters in words, is part of almost every lesson. What's In

1						1	sh	i	p				
2						2	l	e	t				
3						3	r	igh	t				
4						4	n	a	me				
5						5	b	l	a	ck			

Figure 4. Elkonin Boxes

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My Head has proven to be a valuable activity because it encourages students to think about what they know about language and sound-letter matches. During the activity students write a key word for each of five clues. The goal of this activity is to discover the teacher's word using all the information given by the teacher. Students are encouraged to change their predictions when new information is given that does not fit the words they have written. Some examples of clues the teacher provides are: My word has \_\_\_\_\_ sounds. It has \_\_\_\_\_ letters. The vowel makes the same sound as you hear in \_\_\_\_\_. The word begins with the same letter as the word \_\_\_\_\_. The word ends with the same letter as the word \_\_\_\_\_. The spelling pattern in the word is \_\_\_\_\_.

During one lesson the clues were: "My word is a 4-letter word. My word begins with two consonants whose sounds are blended together. If you take off the blend, and put on a capital *t*, the new word would be *Tim*. My word begins like *swing*. Let's go for a \_\_\_\_\_ in the pool." Many of our students correctly guessed the mystery word when clue three was given and were able to confirm the correctness of their guess with clues that followed regarding the consonant blend and the context in which the word was used.

Once a week students also play Partner What's In My Head. Students each select a key word as their personal mystery word and complete a worksheet for the mystery word by filling in information about the six clues above. Students exchange worksheets and try to figure out their partner's mystery word using all the information in the clues.

### Discussion

Not only theory and research but also our own teaching experiences confirm that children who encounter special difficulties figuring out the alphabetic system that governs written forms of words are at risk for reading failure. Although we had adopted an instructional program, the Benchmark Word Identification program, that eased the word learning task for some students, we found that it still fell short for other students. The program was not enabling these students to acquire adequate memory for the written forms of words nor was it enabling them to discover how language works systematically to represent words alphabetically. We decided to modify the program to improve students' ability to form full representations of sight words in memory. Attention was focused on learning the BWI key words as sight words. This was accomplished by analyzing how sounds in the pronunciations of key words matched letters in the spellings. Also, activities were created to

help students discover regularities of the spelling system, with the belief that this information would improve their ability to analyze and remember how to read and spell the key words and to use them to read new words.

We have described several of the activities devised to accomplish these purposes, and we have illustrated their impact on students at the school. We have been truly amazed at our students' involvement, interest, and enthusiasm. They love making discoveries and reading hard words. They seem to own their discoveries and exhibit delight in having the immediate opportunity to read interesting, enjoyable texts that are full of opportunities for them to make and apply their discoveries. Each day we monitor students' success in performing the activities to determine which seem most effective, and this information is used to fine-tune the program. Our observations convince us that we are on the right track. Our students are reading with more confidence and proficiency than we have witnessed in past years. They are eager to read to anyone who will listen, and they take great pride in being able to decode what they consider to be "college" words. They view themselves as readers and spellers who know a great deal about their language and who have the tools to decode or encode almost any word they encounter.

What do children need to know about language? They need to know enough to feel confident and competent with respect to reading and spelling. In our case, this involved adding two components to our existing program. One addition involved teaching students how to make alphabetic sense of the spellings of individual words in order to remember the words in a fully analyzed way. The second addition was teaching students how to operate as word detectives to make discoveries about how our language works, thus improving their knowledge of the general alphabetic system.

To what extent does our program involve teaching students rules? Certainly some of the discoveries that students make may sound like phonics rules when a student conveys a discovery to someone else. For example, a child may explain that a final *e* makes the preceding vowel say its name. However, other regularities detected by children are quite different from phonics rules, particularly the spelling patterns contained in key words that are generalized to other words, such as *tent* generalized in learning *sent*, *rent*, *bent*. Moreover, we believe that there are important differences between teaching rules to students and structuring students' learning so that they discover patterns and regularities that are first offered as hypotheses and survive long enough to become rules. In the program described above, the hypotheses and rules are derived by the students from their own

experiences with words rather than imposed on them by teachers. Students propose more hypotheses than they retain as permanent discoveries. They do not adopt rules until they have experienced a sufficient number of recurrences of a pattern in different words, and they only express rules that make sense to them. They do not memorize unfathomable rules proposed by others. Rather they take ownership of the regularities they discover and are excited about having discovered them. Students are regularly cautioned to be flexible about their discoveries, so they do not expect regularities to be inviolate. This attitude causes students to notice when regularities they have found elsewhere do not apply, as illustrated above when a child remarked that he did not see the letters *sh* in the spelling of *proportionment*, a word whose pronunciation led him to expect these letters.

The purpose of detecting alphabetic regularities in our program is somewhat different from the purpose characteristic of most phonics programs. In traditional programs, phonics rules are taught in order to enable students to use the rules to decode new words. In contrast, the primary purpose of our approach is to help children build a mature sight vocabulary comprised of words that are fully represented in memory with all of their letters secured to sounds in their pronunciations. In turn, it is this mature sight vocabulary, principally in the form of key words, that becomes the vehicle for helping students decode new words by analogy.

We have occasionally observed our teachers restate a student's discovery as a phonics rule that the teachers may have learned as children. However, it is intended as food for thought rather than as a dictum to be memorized. Students also occasionally recite a rule that they learned in another setting. Teachers usually respond in one of two ways: They ask students to put the rule in their own words and identify several words where this rule applies, or they pose the rule as another hypothesis for which students need to gather evidence. In all cases, as students share their discoveries, teachers restate what students say in the form of a hypothesis or theory. The following reply illustrates a teacher's reaction to a student who has expressed a discovery:

Jill just shared with us her discovery that *c* can represent both the /s/ and the /k/ sounds. She thinks that maybe the letter that comes after the *c* has something to do with the sound of *c*. Let's all be alert to examples of words with a *c* and look for and share with the class words to confirm or reject Jill's hypothesis that the sound represented by *c* is related to the letter that follows the *c*.

We believe that students who make discoveries about how our language works have a considerable advantage

in learning to read and spell. It is a teacher's responsibility to shape the learning environment so that students discover, discuss, and apply the regularities in our language as they learn how to read. Over 25 years ago, Venezky (1970) came to a similar conclusion. He completed a study of the English language "to discover and describe the underlying patterns in the current orthography" (p. 126). His goal was to improve the teaching of reading. After an exhaustive study of grapheme-phoneme correspondences in the 20,000 most common words in English, he concluded that there is a great deal that readers need to know about how English works. Specifically, they need to be aware of three types of patterns in words—patterns of letters (graphemes), of meaning units (morphemes), and of sounds (phonemes). Venezky theorized that, armed with an awareness of these patterns, readers construct a model for relating sounds and letters. Then, based on this model, they develop generalizations for predicting the pronunciation of words. A central thesis was that it is not individual letters that represent sounds, but rather patterns of letters. The patterns in words and sentences that readers observe over time form the basis for accurate predictions about how to read words. This work is congruent with the program we have devised and described above.

Knowing how our language works is essential to becoming a good reader and speller; thus, it does not make sense to leave the development of this knowledge to chance. Instruction needs to be scaffolded so that children develop an awareness of the structure of written language and apply this awareness to decoding and remembering unknown words. Beginners who become readers learn about the regularities of English through the processes of discovery and induction. If these inductions are to be made, students like the ones we teach need to be guided to map sounds in words to their spellings and to discover the patterns in language. Armed with the strategies of mapping sounds to letters and making discoveries about written language, beginning readers are empowered to become capable readers.

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