whole language program gives early on, but, once they had that exposure, they benefit from more systematic study.

2. *Builds on a foundation of phonemic awareness.* Phonemic awareness is not phonics. Phonemic awareness is awareness of sounds in *spoken* words; phonics is the relation between letters and sounds in *written* words. Phonemic awareness is an important precursor to success in reading. One study (Juel, 1988) found that children who were in the bottom fourth of their group in phonemic awareness in first grade remained in the bottom fourth of their class in reading four years later.

An example is Heather, a child I saw in our clinic. As part of an overall reading assessment, I gave Heather a task involving removing a phoneme from a spoken word. For example, I had Heather say *meat* and then repeat it without saying the /m/ sound (*eat*). When Heather said *chicken* after some hesitation, I was taken aback. When I had her say *coat* with the /k/ sound, she said *jacket*. Looking over the tasks we did together, it appeared that she viewed words only in terms of their meaning. For her, a little less than *meat* was *chicken,* a little less than *coat* was *jacket*.

For most communication, focusing on meaning is necessary. But for learning to read, especially learning about sound-symbol relationships, it is desirable to view words in terms of the sounds they contain. Only by understanding that spoken words contain phonemes can one learn the relationships between letters and sounds. The alternative is learning each word as a logograph, as in Chinese. This is possible, up to a certain limit, but does not use the alphabetic nature of our language to its best advantage.

Heather was a bright child, and this was her only difficulty, but she was having specific difficulties learning to decode. Other children like Heather, or children with more complex difficulties, are going to have similar problems. We worked for a short period of time on teaching her to reflect on sounds in spoken words, and, with about 6 weeks of instruction, she took off and became an excellent reader. The moral is that phonemic awareness is easily taught, but absence of it leads to reading difficulties.

3. *Is clear and direct.* Good teachers explain what they mean very clearly. Yet, some phonics instruction seems to be excessively ambiguous.

Some of this ambiguity comes from trying to solve the problem of pronouncing single phonemes. One cannot pronounce the sounds represented by many of the consonants in isolation. For example, the sound made by *b* cannot be spoken by itself, without adding a vowel (such as /buh/).

To avoid having the teacher add the vowel to the consonant sound, however, some basals have come up with some terribly circuitous routes. For example, a phonics lesson from a current basal program begins with a teacher presenting a picture of a key word, such as *bear*, pronouncing the key word and two or three words with a shared phonic element (such as *boat, ball,* and *bed*). The teacher is to point out that the sound at the beginning of each is spelled with a *B*. The teacher might then say some other words and ask if they, too, have the same sound. Next, written words are introduced and may be read by the whole class or by individuals. After this brief lesson, students might complete two worksheets, which both involve circling pictures of items that start with *b* and one which includes copying upper- and lowercase *b*'s.

In this lesson, (a) nowhere is the teacher supposed to attempt to say what sound the *b* is supposed to represent and (b) nowhere is the teacher directed to tell the children that these relationships have anything to do with reading words in text. For a child with little phonemic awareness, the instructions, which require that the child segment the initial phoneme from a word, would be very confusing. Children such as Heather view the word *bear* not as a combination of sounds or letters, but identical to its meaning. For that child, the question of what *bear* begins with does not make any sense, because it is seen as a whole meaning unit, not as a series of sounds that has a beginning and an end.

Some of this confusion could be alleviated if the teacher dealt with written words. A more direct approach is to show the word *bear*, in the context of a story or in isolation, and pointing out that it begins with the letter *b*, and that the letter *b* makes the /b/ sound. This approach goes right to the basic concept, that a letter in a word represents a particular phoneme, involving fewer extraneous concepts. Going the other direction, showing the

letter *b* and then showing words such as *bear* that begin with that letter, would also be clear. Each of these should be followed having children practice reading *words* that contain the letter *b*, rather than pictures. Children learn to read by reading words, in stories or in lists. This can be done in small groups or with pairs of children reading with each other independently. Circling pictures, coloring, cutting, and pasting, and so on wastes a lot of time.

4. *Is integrated into a total reading program.* Phonics instruction, no matter how useful it is, should never dominate reading instruction. I know of no research to guide us in deciding how much time should be spent on decoding instruction, but my rule of thumb is that at least half of the time devoted to reading (and probably more) should be spent reading connected text—stories, poems, plays, trade books, and so on. No more than 25% of the time (and possibly less) should be spent on phonics instruction and practice.

Unfortunately, I have seen too many schools in which one day the members of the reading group do the green pages (the skills instruction), the next day they read the story, and the third day they do the blue pages. The result is that, on most days, children are not reading text. Certainly, in these classes, children are going to view "reading" as filling out workbook pages, since this is what they do most of the time. Instead, they should read some text daily, preferably a complete story, with phonics instruction integrated into the text reading.

In many basals, the patterns taught in the phonics lessons appear infrequently in the text, leading students to believe that phonics is somehow unrelated to the task of reading (Adams, 1990). What is taught should be directly usable in children's reading. Juel and Roper/Schneider (1985) found that children were better able to use their phonics knowledge, for both decoding and comprehension, when the texts they read contained a higher percentage of words that conformed to the patterns they were taught. It is best to teach elements that can be used with stories the children are going to read. Teachers using a basal might rearrange the phonics lessons so that a more appropriate element is taught with each story.

Teachers using trade books might choose elements from the books they plan to use, and either preteach them or integrate the instruction into the lesson. A good procedure for doing this is described by Trachtenburg (1990). She suggests beginning by reading a quality children's story (such as *Angus and the Cat*, cited in Trachtenburg, 1990), providing instruction in a high utility phonic element appearing in that story (short *a* in this case), and using that element to help read another book (such as *The Cat in the Hat* or *Who Took the Farmer's Hat*?). Trachtenburg (1990) provides a list of trade books that contain high percentages of common phonic elements.

Reading Recovery is another example of how phonics instruction can be integrated into a total reading program. Reading Recovery lessons differ depending on the child's needs, but a typical lesson begins with the rereading of a familiar book, followed by the taking of a "running record" on a book introduced the previous session (see Pinnell, Fried, & Estice, 1990, for details). The phonics instruction occurs in the middle of the lesson and could involve directed work in phonemic awareness, letter-sound correspondences using children's spelling or magnetic letters, or even lists of words. The teacher chooses a pattern with which the child had difficulty. The "phonics" instruction is a relatively small component of the total Reading Recovery program, but it is an important one.

5. *Focuses on reading words, not learning rules.* When competent adults read, they do not refer to a set of rules that they store in their heads. Instead, as Adams (1990) points out, they recognize new words by comparing them or spelling patterns within them to words they already know. When an unknown word such as *Minatory* is encountered, it is not read by figuring out whether the first syllable is open or closed. Instead most people that I have asked usually say the first syllable says /min/ as in *minute* or *miniature*, comparing it to a pattern in a word they already know how to pronounce. Effective decoders see words not in terms of phonics rules, but in terms of patterns of letters that are used to aid in identification.

Effective phonics instruction helps children do this, by first drawing their attention to the order of letters in words, forcing them to examine common patterns in English through sounding out words, and showing similarities between words. As an interim step, rules can

be useful in helping children see patterns. Some rules, such as the silent *e* rule, point out common patterns in English. However, rules are not useful enough to be taught as absolutes. Clymer (1963) found that only 45% of the commonly taught phonics rules worked as much as 75% of the time.

A good guideline might be that rules might be pointed out, as a way of highlighting a particular spelling pattern, but children should not be asked to memorize or recite them. And, when rules are pointed out, they should be discussed as tentative, with exceptions given at the same time as conforming patterns. Finally, only rules with reasonable utility should be used. Teaching children that *ough* has six sounds is a waste of everyone's time.

6. *May include onsets and rimes.* An alternative to teaching rules is using onsets and rimes. Treiman (1985) has found that breaking down syllables into onsets (or the part of the syllable before the vowel) and rimes (the part from the vowel onward) is useful to describe how we process syllables in oral language. Teaching onsets and rimes may be useful in written language as well.

Adams (1990) points out that letter-sound correspondences are more stable when one looks at rimes than when letters are looked at in isolation. For example, *ea* taken alone is thought of as irregular. However, it is very regular in all rimes, except *-ead* (bead vs. bread), *-eaf* (sheaf vs. deaf), and *-ear* (hear vs. bear). Then rime *-ean*, for example, nearly always has the long *e* sound. Of the 286 phonograms that appear in primary grade texts, 95% of them were pronounced the same in every word in which they appeared (Adams, 1990).

In addition, nearly 500 words can be derived from the following 37 rimes:

-ack	-ain	-ake	-ale	-all	-ame
-an	-ank	-ap	-ash	-at	-ate
-aw	-ay	-eat	-ell	-est	-ice
-ick	-ide	-ight	-ill	-in	-ine
-ing	-ink	-ip	-ir	-ock	-oke
-op	-or	-ore	-uck	-ug	-ump
-unk					

Rime-based instruction is used in a number of successful reading programs. In one such program, children are taught to compare an unknown word to already known words and to use context to confirm their predictions (Gaskins et al., 1988). For example, when encountering *wheat* in a sentence, such as *The little red hen gathered the wheat*, a student might be taught to compare it to *meat* and say "If m-e-a-t is *meat* then this is *wheat*." The student would then cross-check the pronunciation by seeing if *wheat* made sense in the sentence. This approach is comprehension oriented in that students are focused on the comprehension of sentences and stories, but it does teach decoding effectively (see also Cunningham, 1991).

7. *May include invented spelling practice.* It has been suggested that when children work out their invented spellings, they are learning phonic principles, but learning them "naturally." For this reason, many whole language advocates suggest that practice in writing with invented spelling might be a good substitute for direct phonics instruction. Practice with invented spelling does improve children's awareness of phonemes, which, as discussed earlier, is an important precursor to learning to decode.

However, there is very little research on the effects of invented spelling. That research is positive, but I know of only one study that directly addresses the question. Clarke (1989) found that children who were encouraged to invent spelling and given additional time for writing journals were significantly better at decoding and comprehension than children in a traditional spelling program. However, the classes she studied used a synthetic phonics program as their core reading program. These results may not transfer to a whole language program or even to a more eclectic basal program. An evaluation of the Writing-to-Read program, a computer-based program incorporating writing, found that it had little effect on children's reading abilities (Slavin, 1991).

We need not wait for the research needed to evaluate the use of invented spelling. Writing stories and journal entries using invented spelling does not seem to hurt one's reading or spelling abilities and may help them, and it certainly improves children's writing.

8. *Develops independent word recognition strategies, focusing attention on the internal structure of words.* The object of phonics instruction is to get children to notice orthographic patterns in words and to use those patterns to recognize words. Effective strategies,