A Closer Look at the Five Essential Components of Effective Reading Instruction

A Review of Scientifically Based Reading Research for Teachers

Introduction

Five Essential Components of Effective Reading Instruction

How can we teach all children to read accurately, rapidly, and with comprehension by the end of third grade? The National Reading Panel Report provides an answer to this question.

The National Reading Panel Report (National Institute of Child Health and Human Development [NICHD], 2000) summarized several decades of scientific research that clearly shows effective reading instruction addresses five critical areas:

- Phonemic awareness
- Phonics
- Fluency
- Vocabulary
- Comprehension

These five areas were incorporated into the No Child Left Behind Act and the Reading First initiative as essential components of effective reading instruction.

There are many approaches to teaching these five essential components. These approaches differ in how much guidance or direction teachers provide as their students are learning new skills, how clearly and directly teachers explain new skills, whether they demonstrate exactly how to use a specific skill, and whether the skills are taught in a thoughtful sequence. Scientific research reviewed by the National Reading Panel revealed that these different approaches or methods of teaching the five essential components are *not* equally effective. The most reliably effective approach is called *systematic and explicit instruction.*

Systematic instruction reflects several important characteristics. Skills and concepts are taught in a planned, logically progressive sequence. For example, certain sounds (those that are easier to learn or those used more often in the words students will read) are taught before other sounds. Lessons focus on clearly defined objectives that are stated in terms of what students will do. Multiple practice activities are scheduled purposefully to help students master and retain new skills. Students work on carefully designed tasks that give them opportunities to apply what they have been taught. Assessments are designed and used in a timely fashion to monitor skill acquisition as well as students' ability to apply new skills, to retain them over time, and to use them independently.

Explicit instruction means the teacher states clearly what is being taught and models effectively how it is used by a skilled reader. For example, in demonstrating how to blend sounds to pronounce an unfamiliar word, explicit instruction might sound like this: "I'll show you how to sound out this word. Listen carefully. I'll say the sound for each letter without stopping between the sounds." Explicit instruction ensures students' attention is drawn to important features of an example or demonstration.

Scientifically Based Reading Research

The conclusions of the National Reading Panel were based on a synthesis of research studies that met established criteria that define scientifically based reading research (NICHD, 2000). To be described as scientifically based, research findings or conclusions must be drawn from studies that used an experimental design to test the effectiveness of a teaching strategy or set of materials in improving one or more of the essential skills involved in reading. Further, these studies had to use samples of students who represented the larger population, so the findings would be relevant to schools. The studies had to be repeated, or replicated, to build confidence that the findings were solid, and not likely to be mere chance. Finally, the research had to be judged as sound and worthwhile by reading experts other than the studies' authors.

The use of instructional strategies and programs that reflect scientifically based reading research is a guiding principle of the No Child Left Behind Act and the Reading First initiative. Relying on rigorously tested instructional practices and materials provides a sound basis for instructional decisions.

Reading First

Reading First is a federal initiative authorized by the No Child Left Behind Act. The U.S. Department of Education provides Reading First grants to states, which, in turn, award subgrants to eligible school districts that submit approved proposals for how they will apply scientifically based reading research to improve reading instruction and student achievement. The common goal of the U.S. Department of Education, the states, and the local school districts is for all students to be reading at or above grade level by the end of third grade. This goal was established because children who are not proficient readers by the end of fourth grade are not likely *ever* to be proficient readers. It is wiser to ensure that students are good readers in the primary grades than to wait until their last chance may have passed and then try to provide remedial reading instruction that may not work.

The Reading First initiative provides guidance on several key elements, which can be thought of as four "pillars" of an effective reading program. The four pillars are as follows:

Valid and Reliable Assessments. An effective reading program will utilize valid and reliable assessments that help teachers know what skills students have acquired, which students are experiencing difficulty, and how much progress students have made. This is accomplished through the use of screening, diagnostics, progress monitoring, and outcome assessments. These assessments are ongoing and include both formal (standardized, quantitative) and

informal measures of students' reading skills that guide the teacher in planning and evaluating instruction.

Instructional Programs and Aligned Materials. Effective instructional programs and materials emphasize the five essential components of effective reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension. These programs and materials provide instruction in the five components that is explicit (focused, clear, and involves much modeling of how to use each skill) and systematic (precisely planned, sequenced, and comprehensive). They provide ample time for students to learn, practice, and apply the skills they have been taught in reading meaningful text.

Aligned Professional Development. Strong professional development helps teachers understand and use instructional practices that reliably foster high student achievement. It is tailored to support the specific instructional program teachers are using as well as the academic standards adopted at the state level. The learning experiences give teachers time to acquire new knowledge of how to assess and teach the five essential components, support for putting this new knowledge into practice with students, and feedback on how well teachers use what they have learned.

Dynamic Instructional Leadership. Reading First recognizes the critical role of instructional leaders. This role requires a strong, active commitment to supporting improved reading instruction and the implementation of scientifically based reading research in the classroom. Instructional leaders provide coaching and support and are responsible for establishing and communicating clear goals and expectations for student learning. Administrators at the district and building levels must be ready to provide the resources needed to ensure that schools are making adequate progress.

A Closer Look at the Five Essential Components of Effective Reading Instruction

This document focuses on the second pillar, instructional programs and aligned materials. Its purpose is to provide teachers with a clear, concise review of strategies for teaching reading, drawn from scientifically based reading research. It is organized around the five essential components of effective reading instruction and the methods of explicit and systematic instruction identified by the National Reading Panel and applied through the Reading First initiative. The document includes:

- Concise summaries of research findings.
- Descriptions of effective instructional strategies.
- Lesson excerpts illustrating these strategies in use.
- References and resources for more in-depth exploration of specific topics.

This information will give teachers a better understanding of how the five essential components of effective reading instruction can be implemented in the classroom.

Phonemic Awareness

Phonemic awareness is commonly defined as the understanding that spoken words are made up of separate units of sound that are blended together when words are pronounced. However, it can also be thought of as skill at hearing and producing the separate sounds in words, dividing or segmenting words into their component sounds, blending separate sounds into words, and recognizing words that sound alike or different. It is defined by reading experts as the ability to "focus on and manipulate phonemes in spoken words" (NICHD, 2000). For example, hearing and saying that the word *cat* has three sounds, or phonemes /k/ /a/ /t/ is an example of phonemic awareness skill.

We know that phonemic awareness is important in learning to read languages that are based on an alphabet (Wagner, Torgesen, & Rashotte, 1994). Phonemic awareness can also be used to predict how well children will learn to read. Researchers were able to identify who would learn to read more easily and who would have difficulty by measuring the extent to which children had developed phonemic awareness (Share, Jorm, Maclean, & Matthews, 1984). More importantly, a number of studies have shown that teaching phonemic awareness to young children significantly increases their later reading achievement (Cunningham, 1989; Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Lundberg, Frost, & Peterson, 1988). As an essential part of learning to read and a strong predictor of reading success, phonemic awareness is a concept every reading teacher should understand and be able to teach proficiently (Adams, Foorman, Lundberg, & Beeler, 1998).

This section addresses four important questions about phonemic awareness:

- What are phonemes?
- How can we know if children are developing phonemic awareness?
- How does phonemic awareness help young children learn to read?
- How can teachers help students develop phonemic awareness?

What Are Phonemes?

Phonemes are the sounds that make up spoken words. They are the smallest segments of sounds within spoken language. For example, the word *no* is made up of two phonemes: /n/ and /o/. We hear them as a single word because we blend the individual phonemes into a unit as we pronounce the word. Phonemes are represented in written language by *graphemes*. Graphemes may be single letters (a, t, k, e, or n) or clusters of letters that represent single sounds (th, sh, oo, ough, or ck). Think of phonemes not as "the sounds that letters make" but as the sounds of speech that can be represented by letters.

> Phonemes are speech sounds, not letters. This symbol, *b*, is not a phoneme. It is a letter that has been designated to represent the phoneme /b/.

Phonemes are difficult to distinguish in normal speech because the individual sounds slide into one another as words are spoken. An adult who is asked to count the phonemes in a given word will probably rely on his or her knowledge of how many letters are used to spell the word (Ehri, 1984). But this is not a completely reliable indicator because some phonemes are represented by a combination or cluster of letters. For example, there are four phonemes in the word *salt* but only two in the word *though*. A more reliable way to identify phonemes within a word is to "stretch out" the word's pronunciation and count the number of changes in how the mouth, tongue, and lips work as they make the individual sounds.

Here is a way to check your own understanding of phonemes. How many phonemes are in these words? (The answers are on the next page).

- ran
- rain
- reign
- ate
- eight
- straight

How Can We Know if Children Are Developing Phonemic Awareness?

There are several levels of phonemic awareness that may be demonstrated through different classroom activities (Schatschneider, Francis, Foorman, Fletcher, & Mehta, 1999). These levels represent increasingly difficult tasks, and as such, they may provide an indication of how a child's phonemic awareness is developing.

Phonemic Awareness Task	Demonstration Activity	Example
Isolating phonemes	Students identify specific sounds at the beginning, middle, and end of words.	Teacher (T): What is the first sound in the word *dog*? Student (S): /d/
Blending onset-rimes *(The onset is the leading consonant(s) in a syllable; the rime is the vowel(s) and following consonants.)*	Students blend onset-rimes to form real words.	T: What word can you make by blending these two sounds together? *s…and* S: sand
Blending phonemes	Students blend phonemes to form real words.	Teacher: What word is made from blending these sounds: /b/ /a/ /t/? S: bat

Phonemic Awareness Task	Demonstration Activity	Example
Deleting phonemes	Students identify the word that remains when a phoneme is removed or deleted.	T: What word is left when we drop the /s/ from the word *spot*? S: pot
Segmenting words into phonemes	Students break a word into its individual sounds by counting the sounds or by moving a marker for each sound.	T: Show me how many phonemes are there in the word *bake*. S: three – /b/ /a/ /k/
Adding phonemes	Students make new words by adding a phoneme to a word.	T: What word do you make when you add a /b/ to the beginning of the word *ring*? S: bring
Substituting phonemes	Students make a new word by replacing a specified phoneme with another.	T: Say the word *bag*. Now change the /b/ to an /r/. What is the new word? S: rag

Notice how tasks near the bottom of the list are more difficult than tasks near the top. They are more difficult, in part, because they involve skills that are included in performing the tasks near the top of the list. For this reason, these more difficult skills should be taught later. For example, in order to add or substitute phonemes, a child must already be able to isolate and blend phonemes. This demonstrates the importance of systematic instruction. If teachers teach the harder phonemic awareness tasks before children have learned the easier ones, many children will fail to develop phonemic awareness. These children will struggle with more difficult reading skills that require phonemic awareness, such as using phonics to decode unfamiliar words.

How many phonemes did you hear?

- ran (3) /r/ /a/ /n/
- rain (3) /r/ /a/ /n/
- reign (3) /r/ /a/ /n/
- ate (2) /a/ /t/
- eight (2) /a/ /t/
- straight (5) /s/ /t/ /r//a/ /t/

How Does Phonemic Awareness Help Young Children Learn to Read?

Phonemic awareness helps young children use more advanced ways of learning new words. Learning a new word involves forming a connection between visual information about the word as it appears in print and its meaning, pronunciation, and other information that is stored in the child's oral vocabulary. This connection is what enables the reader to access information

about the word stored in the brain when the word is encountered in print. Faster, stronger connections help produce more proficient reading. In the more advanced phases of learning new words, phonemic awareness plays an important role in making these connections.

There are four developmental phases that describe how children learn new words (Ehri, 1998). The first of these phases is called the prealphabetic phase. In this phase, children form connections between visual features of the word in print and its pronunciation and meaning. When children recognize logos such as McDonald's or Coca-Cola by their design rather than by the letters that make up these words, they are using prealphabetic strategies. Phonemic awareness is not utilized at this phase because the connections children make between words in print and meaning are not based on letter-sound correspondences.

In the second phase, the partial alphabetic phase, the child makes a connection between *some* of the letters within the word as it appears in print and the meaning and pronunciation stored in the child's oral vocabulary. A low level of phonemic awareness is needed to make these kinds of partial alphabetic connections. Because they are using some alphabetic information in making these connections, children speed up their learning of new words as they enter this phase.

In the third phase, the full alphabetic phase, the child makes connections between the full sequence of letters and the word's meaning and pronunciation. In this phase, phonemic awareness is even more important to new word learning. That is, children learn new words faster when they are able to match speech sounds or phonemes with the letters they see in print (NICHD, 2000).

In the fourth and final phase of development in how new words are learned, the consolidated alphabetic phase, children are able to use the idea that a sequence or cluster of letters (*-tion, -ake, trans-*, etc.) can be used in many different words to represent the same series of phonemes. This allows faster word recognition for known words and more efficient learning of unfamiliar words.

Because the English spelling system is based on the representation of phonemes by graphemes, students who have developed phonemic awareness have an easier time recognizing unfamiliar words in print. Here are two ways phonemic awareness plays a key role in the processes readers use to recognize unfamiliar words.

Using Phonemes in Decoding: The term *decoding* is used to describe how the reader translates "graphemes into phonemes and then blends the phonemes to form words with recognizable meanings." (NICHD, 2000, p. 2-11). In other words, the reader matches a sound with each of the letters or letter combinations that make up the word's spelling and then blends these sounds into an "estimate" of the word's pronunciation. This trial pronunciation is used to access the word's meaning in the reader's oral vocabulary (the brain's storehouse of information about words). If the meaning that is associated with the trial pronunciation makes sense in the sentence, the reader continues reading. If it does not make sense, the reader may reformulate the trial pronunciation and try again to find a word that matches it.

Using Phonemes in New Word Learning: Words become sight words (words that are recognized immediately) when the reader has formed a strong connection between the sequence of letters in the word's spelling and the word's pronunciation and meaning as it is stored in the reader's oral vocabulary. The ability to "segment pronunciations into phonemes that link to graphemes" is thought to strengthen these connections (NICHD, 2000, p. 2-12).

How Can Teachers Help Students Develop Phonemic Awareness?

The National Reading Panel Report stated that "the extent of phonemic awareness needed to contribute maximally to children's reading development does not arise from incidental learning or instruction that is not focused on this objective" (NICHD, 2000, p. 2-33). Comprehension of main ideas of a spoken message is demonstrated by restating or rephrasing key points. Therefore, it is important that teachers understand how to teach phonemic awareness. The following points highlight key ideas for teaching phonemic awareness:

Assess the kinds of phonemic awareness tasks students are able to perform and plan instruction accordingly. Nonreaders in kindergarten and first grade who have developed little or no phonemic awareness will benefit from explicit and systematic instruction that begins with the easier levels of phonemic awareness such as identifying the initial sounds in spoken words. More mature readers may need instruction in segmenting, blending, and deleting phonemes. (NICHD, 2000, p. 2-31)

Focus on one or two phonemic awareness skills. Phonemic awareness instruction that focuses on no more than one or two skills at a time is more effective than trying to teach many different phonemic awareness skills at the same time (NICHD, 2000, p. 2-21).

Allocate a reasonable amount of time to phonemic awareness instruction. Studies that produced the strongest results engaged students with phonemic awareness activities between a total of 5 to 18 hours (NICHD, 2000, p. 2-22)

Emphasize segmenting words into phonemes. Teaching young readers to segment words into individual phonemes appears to be as effective in helping them learn to read as instruction in both segmenting and blending (Torgesen, Morgan, & Davis, 1992). While blending is an essential skill for use in decoding, Torgesen, et al. (1992) concluded that emphasis should be placed on segmenting words into phonemes.

Working with small groups of three to four children to teach phonemic awareness may be more effective than one-on-one tutoring. It appears that children learn from observing and listening to the responses of other children and what the teacher says to the other children about their responses. (NICHD, 2000, p. 2-22)

Use letters when teaching about phonemes. According to the work of Blachman, Ball, Black, and Tangel (as cited in NICHD, 2000), instruction in letters should accompany phonemic awareness instruction. Teaching students to use letters to add, delete, or substitute phonemes increases the application of phonemic awareness to reading and writing.

Connect phonemic awareness instruction to reading and writing. Making it clear to students how phonemic awareness is connected to reading and writing increases its impact on reading achievement (Cunningham, 1990). Isolated phonemic awareness training improves reading

outcomes, but not to the extent that it would if its application to reading and writing was stressed.

Use manipulatives to help students acquire phonemic awareness. Manipulatives can be effective aids in teaching phonemic awareness. The work of Blachman et al. (as cited in NICHD, 2000) reported this finding: Having students move letters as they pronounced phonemes in given words was a "key activity" in a program of phonemic awareness instruction that produced significant transfer of learning to reading and spelling.

Focus attention on how the mouth changes when pronouncing different phonemes. Focusing attention on the changes that take place in the mouth as words are pronounced is an effective way to identify phonemes. Lindamood & Lindamood's work (as cited in NICHD, 2000), explains that by helping students notice the position and movement of their lips and tongue, teachers can increase students' ability to identify, count, and segment phonemes. For example, when the word *foot* is spoken, the lower lip is held against the teeth as air is forced out to pronounce the phoneme /f/. Then, the mouth forms a circle as the /? / is pronounced. Finally, the tongue touches the roof of the mouth to make the /t/.

Use spelling to teach phonemes. Asking children to spell words by listening for individual phonemes and identifying the letters that represent those phonemes helps to teach segmenting and improves children's ability to recognize unfamiliar words (Ehri and Wilce, 1987). It is helpful to encourage children to think about how their mouth changes as they repeat the word they are trying to spell. This helps them segment and identify individual phonemes (NICHD, 2000, p. 2-36)

Teachers need to be aware of the key features that make phonemic awareness instruction effective so they can evaluate available instructional programs. Then, teachers should use the materials in a manner that is consistent with the research findings cited above.

An Example of Effective Phonemic Awareness Instruction

Preview: The content of this lesson excerpt is most appropriate for kindergarten or first grade, but it may be reviewed with second-grade students who need practice with phonemic awareness. This teacher is working on helping a small group of students to hear the sounds within spoken words (phonemes) and to practice the skill of blending phonemes into words. The teacher wants to be explicit in illustrating the relationship between phonemes and the letters that represent those sounds so students can use those relationships when they are trying to recognize unfamiliar words. The words used by the teacher are written on a chart pad to help make explicit the connection between letters and sounds.

Teacher Behavior and Purpose	**Example Lesson Excerpt**
Explain what students will do.	T: We know that words are made up of sounds. Remember we learned that *cat* has three sounds: /k/ /a/ /t/. Today, we're going to practice hearing sounds in words and blending sounds together to make words.
Provide explicit information about the focus of the lesson.	T: Listen to this word and tell me the first sound you hear. *The teacher pronounces the word* man *slowly.* S: /m/ T: Yes, /m/ is the first sound. Tell me the first <u>two</u> sounds. *The teacher pronounces the word again, emphasizing each individual sound by holding up one finger for the first sound, two for the second, and three for the third.* S: /m/ /a/ T: Yes, the first two sounds are /m/ /a/ Now, tell me all three sounds. Ss: /m/ /a/ /n/ T: Correct. You heard all three sounds, /m/ /a/ /n/. What is the word? Ss: *man* T: There is a letter that goes with each of these sounds. Here's how you spell *man*. *Teacher writes the word* man *on the chart pad, focusing students' attention on the letter-sound correspondences by writing the letter as the sound is spoken.* T: Say the word with me and watch as I point to the letters that make each sound. *The teacher sweeps from left to right under the word* man *as they all say the word together; slowly at first, then faster and faster until it is pronounced as a single word. The teacher repeats this pattern of identifying sounds in words and blending the sounds to make words by changing the initial consonant, substituting other letters the children in this group already know.*

Teacher Behavior and Purpose	Example Lesson Excerpt
Ending review	T: We practiced listening for sounds in words, and you blended sounds together to make words. You blended /m/ /a/ /n/ to make the word *man*, you blended /r/ /a/ /n/ to make *ran,* and you blended /f/ /a/ /n/ to make *fan*. You need to be able to blend sounds together to make words if you're going to read words you don't know right away when you see them in books or stories. When we see a word we don't know, we need to say the sound each letter makes, then we can blend those sounds and say the whole word.

A Final Word on Phonemic Awareness

Although phonemic awareness is a critical skill in learning to read, phonemic awareness instruction by itself is not a complete program of reading instruction. It is only a means by which children come to understand that words are made up of individual sounds. Therefore, it is important that children quickly learn another skill, namely, to say the letters of the alphabet and to say the sounds represented by letters—as taught through phonics instruction. This is the topic of the next section. Together, phonemic awareness and phonics instruction provide a sound foundation for using the alphabetic principle to learn to read.

Phonics

Understanding phonics and the purpose of phonics instruction involves thinking about how written language was created. Spoken language had existed for a very long time before the need for written communication brought about the invention of various alphabets. When people began inventing the letters of an alphabet to represent the sounds of their spoken language, they eventually saw the need for a set of rules to make spelling consistent from word to word. That is, they understood it would be important for the same letter or letters to be used each time a particular sound was represented. The rules they created to establish consistency in how speech sounds are represented in print are what we now call phonics rules.

Therefore, we define phonics as a set of rules that specify the relationship between letters in the spelling of words and the sounds of spoken language. For the English language, these relationships are predictable, but not completely consistent. However, they are consistent enough to be very useful to young children in helping them learn to decode unfamiliar words. (Foorman et al., 1998).

What Is the Purpose of Phonics Instruction?

Phonics instruction is intended to help young readers understand and use the alphabetic principle. This principle says there is a systematic, if sometimes irregular, relationship between graphemes (letters and letter combinations) and phonemes (individual speech sounds). Effective phonics instruction enables children to use these relationships to read and spell words accurately and rapidly. Phonics instruction also serves as a memory aid that helps students remember and apply rules and generalizations for matching sounds and letters.

Systematic Phonics

The research support for systematic phonics instruction extends back to the work of Jeanne Chall (1967). Her extensive review of the theory and practical application of beginning reading instruction concluded that systematic phonics instruction that was initiated early in children's school experiences seemed to produce stronger reading achievement than instruction that began later and was less systematic. Since Chall's early study of reading, the evidence to support the use of systematic phonics instruction has continued to grow (Adams, 1990; Foorman et al., 1998).

> "Although differences exist, the hallmark of systematic phonics programs is that they delineate a planned, sequential set of phonic elements, and they teach these elements explicitly and systematically."
> (NICHD, 2000, p. 2-99)

Two categories of systematic phonics instruction have been the focus of considerable study. One is *synthetic phonics* in which students are taught to sound out words by matching sounds to letters and then blending the sounds to form words. The second category is called *larger-unit phonics* in which students detect and blend word parts that are larger than phonemes (units

such as onsets and rimes and spelling patterns). Both methods can produce a statistically significant impact on reading achievement (NICHD, 2000).

Findings cited in the National Reading Panel Report (NICHD, 2000) on the efficacy of systematic phonics instruction include the following:

- Systematic phonics instruction was shown to produce substantial improvement in reading and spelling in kindergarten through sixth grade, especially for younger children who were at risk of future reading failure and disabled readers. The contribution of systematic phonics instruction to reading achievement was greater than that of programs that provided unsystematic phonics instruction and programs that included no phonics instruction.
- Positive results were greater with younger students (kindergarten students and first graders), indicating that beginning systematic phonics instruction early is helpful.
- Systematic phonics instruction produced gains when used in a variety of grouping patterns such as one-on-one tutoring, small groups, and whole-class instruction.
- Gains in reading were demonstrated by children from all socioeconomic levels.
- Systematic phonics instruction improved comprehension and showed an even greater impact on word recognition.

This last finding serves as a reminder that a strong reading program includes, but is not limited to, systematic phonics instruction. The National Reading Panel Report (NICHD, 2000) addressed the importance of placing systematic phonics instruction within a comprehensive reading program by stating the following:

> Phonics instruction is never a total reading program. In first grade, teachers can provide controlled vocabulary texts that allow students to practice decoding, and they can also read quality literature to students to build a sense of story and to develop vocabulary and comprehension. Phonics should not become the dominant component in a reading program, neither in the amount of time devoted to it nor in the significance attached. It is important to evaluate children's reading competence in many ways, not only by their phonics skills but also by their interest in books and their ability to understand information that is read to them. By emphasizing all of the processes that contribute to growth in reading, teachers will have the best chance of making every child a reader. (p. 2-97)

Examples of Effective Phonics Instruction

Preview: In this example, a first-grade teacher focuses on the phoneme /k/ and how it can be represented by the letter *c*. The teacher makes this relationship clear and explicit. The teacher begins with the sound and then provides examples of words in which the letter *c* stands for that sound. The lesson builds systematically from individual sounds to words and then words in a sentence. The lesson concludes with practice with decodable text that features the letter-sound correspondence that was just taught. This gives students an opportunity to practice what they have learned, and it helps ensure that the connection between phonics instruction and reading is reinforced.

Teacher Behavior and Purpose	**Example Lesson Excerpt**
Explain what students will do.	T: We're going to learn a new sound and the letter we use to spell this sound. This will help us read words that have this sound in them.
Provide explicit information about the focus of the lesson.	T: Our new sound is /k/. Listen for the /k/ sound in these words. *The teacher says each word slowly, emphasizing the initial sound.* cat can cup T: Now, I'm going to say the words again as I write them on the board. The first letter in each of these words says /k/. *The teacher repeats* cat, can *and* cup, *exaggerating the /k/ phoneme each time the letter* c *is written*. T: In these three words, the letter *c* stands for the sound /k/. Say the words with me. Ss: cat can cup *The teacher points to the letter* c *in each word as students say the word.* *The teacher will introduce other letters that can represent the /k/ sound in later lessons after students have had considerable practice with this letter-sound correspondence.*
Remind students of the lesson's purpose, provide appropriate practice, and test skill acquisition.	T: Remember, when we see the letter *c*, it usually stands for the /k/ sound. So, if we're reading and we see a word we don't know and it has the letter *c* in it (*teacher points again to the letter in each word on the chart pad*), we will try the /k/ sound first in trying to sound out the word. Listen for the /k/ sound. Which word has the /k/ sound? *The teacher says three words, pronouncing them slowly.* table candy rain Ss: candy. *The teacher writes the word* candy *on the board.* T: What letter says /k/ in this word? Ss: c

Teacher Behavior and Purpose	Example Lesson Excerpt
	The teacher continues with additional examples, pointing out clearly the letter-sound correspondence between the letter c *and the /k/ sound.* Now, let's look at a sentence that has two words with the /k/ sound. I'll read it to you and then we'll read it together: **Can you see the cap?** *The teacher moves a pointer from left to right so students can follow as the words are pronounced. The teacher touches the letter* c *with the pointer while emphasizing the /k/ sound.* Ss: *Students read the sentence aloud.* T: Yes. Can you see the cap? Now, look at this next sentence. **The car is red.** *The teacher models for students how to apply what they have just learned about this letter-sound correspondence to decode the new word within the sentence that includes the /k/ sound.* *The teacher reviews the examples of words that include the /k/ sound and sweeps a pointer slowly from left to right under the word to reinforce the idea of blending the individual sounds. Then, the teacher provides additional practice with decodable text that includes multiple opportunities for students to use what they have just learned to read words they have been taught that include this letter-sound correspondence. The sentences also allow students to decode new words with this same letter-sound correspondence.* T: I'll read this story in my big book aloud first, and then we can read it together. When we're done, I want you to read it out aloud while I'll listen to you read. *After following along as the teacher reads the story and then reading it with the teacher, the students read independently while the teacher circulates among them and asks each one to read two or more sentences aloud to identify who needs additional instruction.*
Ending review	T: Let's go back over what we learned. We learned that the letter *c* can stand for the /k/sound. We learned to read these words that start with the letter *c* and the /k/ sound. *The teacher asks students to read the words listed on the chart pad.* We also learned how to use what we know about the sound this letter makes to sound out new words. *The teacher writes the words from the story that*

Teacher Behavior and Purpose	Example Lesson Excerpt
	begin with the letter c *and asks students to read those words as well. This gives the teacher another opportunity to confirm who is able to apply this letter-sound correspondence to unfamiliar words.*

The above example illustrates two important principles of phonic instruction:

- *Phonics instruction should be explicit and systematic*. Explicit phonics instruction requires the teacher to explain clearly and directly that certain letters or letter combinations represent certain sounds. ("The sound /d/ is spelled with the letter *d*.") Systematic phonics instruction utilizes a predetermined sequence of letter-sound relationships rather than teaching letter-sound relationships randomly as students encounter them in stories and books. It also includes lots of practice using letter-sound relationships the students have been taught.

- *Phonics instruction is a means to an end. And, that end is reading connected text*. The lesson progresses from recognizing letter-sound relationships to using those relationships to read decodable connected text. The teacher keeps this end in view throughout the lesson so that students understand that the purpose of learning new phonic generalizations and spelling patterns is to help them read more proficiently.

Fluency

Years ago, fluency was understood to mean rapid word recognition that freed up space in the reader's working memory for use in comprehending the message of the text. That is, fluent readers need to put less effort into word recognition and therefore have more available for comprehension. Later studies of fluency (Rasinski, 1990; Hooks & Jones, 2002) expanded this understanding by clarifying that fluency can also involve grouping words within a sentence into phrases that make what is read easier to comprehend. Grouping words into meaningful phrases and reading with expression helps the reader understand the text by making what is being read resemble natural speech. Therefore, we now understand that fluency is recognizing the words in a text rapidly and accurately *and* using phrasing and emphasis in a way that makes what is read sound like spoken language.

Why Is Fluency Instruction Important?

In a large-scale study of fluency (Pinnell, Pikulski, Wixson, Campbell, Gough, & Beatty, 1995) the National Assessment of Educational Progress reported that almost half of the fourth graders tested were unable to read fluently. That same study identified a close relationship between fluency and comprehension. That is, students who were low in fluency also showed difficulty comprehending what they read.

This relationship between fluency and comprehension is explained in this way in the National Reading Panel's Report (NICHD, 2000):

> Why do problems with reading accuracy, speed, and expression interfere with comprehension? To answer this question, we need to examine the reading process in terms of two basic cognitive tasks. The reader must recognize the printed words (decoding) and construct meaning from the recognized words (comprehension). Both decoding and comprehension require cognitive resources. At any given moment, the amount of cognitive resources available for these two tasks is restricted by the limits of memory. If the word recognition task is difficult, all available cognitive resources may be consumed by the decoding task, leaving little or nothing for use in interpretation. Consequently, for the nonfluent reader, difficulty with word recognition slows down the process and takes up valuable resources that are necessary for comprehension. Reading becomes a slow, labor-intensive process that only fitfully results in understanding. (p. 3-8)

Accurate, Automatic Word Recognition: An Important Aspect of Fluency

The idea of accuracy in word recognition focuses on correctly identifying words on the first attempt. When a word is identified correctly, the meaning retrieved from the reader's oral vocabulary is one that makes sense with the other words in the sentence.

By definition, automatic behavior of any type occurs without having to be directed by conscious thought. The kind of automatic behavior that is part of fluent reading is no exception. The processing of words in print, the accessing of the correct meaning and pronunciation from the reader's oral vocabulary, and the transfer of that information to working memory all take place without the conscious direction of the reader.

Logan (1997) reports that automatic word recognition can be thought of as a continuum that begins with the slow, struggling word recognition of a beginning reader and extends to the rapid, effortless word recognition of the skilled reader. Readers progress gradually along this continuum. This gradual buildup of proficiency requires instruction and practice.

How Can Teachers Help Students Develop Greater Fluency?

Because of the benefits of fluent reading, it is important to look carefully at how fluency is developed. While practice is a key component of acquiring any type of automatic behavior, the question of what types of practice are most effective in developing reading fluency has a somewhat surprising answer.

Although there is a good deal of research that connects how much children read and their reading performance, this research does not prove which comes first: reading skill or lots of reading (NICHD, 2000). For example, strategies that emphasize silent, independent reading have not been proven to produce improvement in reading achievement (Carver & Liebert, 1995). So, to ensure that students continue to develop fluency, other forms of practice should be included. Two forms that have shown evidence of improving fluency are repeated reading and guided repeated oral reading (NICHD, 2000).

Repeated reading involves asking students to read and reread a passage or story. In studies of the effects of repeated reading, students have been required to reread a story a certain number of times or until a specified level of fluency was reached. In a classroom setting, students might intersperse their repeated readings with activities that give them an opportunity to respond to what they have read rather than merely reading the story or passage again and again.

As discussed earlier, at least part of the improvement in fluency produced by repeated reading may result from a shift in the reader's emphasis from word recognition to comprehension as he or she rereads the story or passage. During initial readings, the reader may be required to devote more working memory to the task of decoding unfamiliar words. These efforts at word recognition build mental connections that enable the reader to recognize those words more rapidly when they are encountered again. This allows more working memory to be used for comprehension during subsequent readings.

Guided repeated oral reading adds greater support for the reader to the strategy of repeated reading. This guidance or support may take the form of additional modeling of what fluent reading sounds like, telling students unfamiliar words rather than having them sound the words out, having students read along with a taped version of the story, or helping students see how words can be grouped into meaningful phrases. Direct support may come from fellow students, parents, other adults, or the classroom teacher. Comparisons among different methods of providing guidance during repeated oral reading indicate that most methods were

successful in producing improvement in fluency (NICHD, 2000). However, one form of guided reading that has not been proven successful is the practice of "round-robin" reading (Stalling, 1980). The primary flaw in round-robin reading is most likely the fact that it does not give students a chance to improve their fluency by rereading the passage. Round-robin reading requires students who have read "their paragraph" to read along as other students read subsequent paragraphs. They are not given an opportunity to read the same passage again with the benefit of guidance or feedback from their teacher. Fluency improves when students can apply the guidance their teacher has provided in rereading the same passage.

The most typical structure for guided repeated oral reading activities has several steps:

1. The activity begins with some form of introductory explanation of the passage to connect it to the readers' background knowledge and to highlight important vocabulary words.
2. Then, the teacher may read the story or passage aloud as students follow along in their own books or listen without reading along. This provides students with a model of fluent reading that demonstrates fast, accurate word recognition as well as phrasing and expression that sounds like natural speech.
3. At this point, students may be allowed to read the text aloud to themselves or to one another. This segment of the lesson may involve repeated readings. (Four readings will likely be sufficient for most readers to gain an acceptable level of fluency with the text on their independent reading level.) The teacher uses this time to listen to individual students read sections of the assigned text and provides support through one or more of the practices listed below.
4. The final step of the lesson includes discussion of the story or passage to enhance comprehension. Further repeated oral reading of the text is used to increase fluency.

The following forms of guidance are proven to produce improved fluency:

- Telling students unfamiliar words as they encounter them so they can focus on constructing meaning and reading with fluency (Shany & Biemiller, 1995).
- Helping students group words in a sentence into meaningful phrases (Taylor, Wade, & Yekovich, 1985).
- Having students read along orally as the teacher or another fluent adult reader reads the story aloud (Rasinski, 1990).
- Using repeated reading with a taped-recorded version of the story produced significant gains in reading performance. When the training was completed, the students sustained their higher reading levels; however, without further training, they did not continue to improve (Blum, Koskinen, Tennant, Parker, Straub, & Curry, 1995).

An Example of Effective Fluency Instruction

Preview: In this lesson, the teacher provides a model of fluent reading and helps students build fluency by repeated oral reading with a variety of forms of support. The lesson is structured so students are given support through a range of methods (direct guidance from the teacher, peer support through reading to a classmate, and listening to a tape-recorded version of the story while reading along silently.) In a previous lesson, the teacher emphasized reading speed by having students read a word list faster and faster without mistakes. This was followed by repeated reading of a single sentence, reading it faster each time. That activity ended with students reading a paragraph repeatedly to increase reading speed. The focus of this lesson, however, includes reading with expression as well as rapidly.

Teacher Behavior and Purpose	**Example Lesson Excerpt**
Explain what students will do.	T: When I'm reading something I really want to understand, I will sometimes read it over again. Because I get better with practice, each time I read it, I can read it faster and I understand it better. Today, I'm going to read you a short story so you can hear how it should sound. Then, you'll have several chances to practice reading it yourself. I want you to be able to read it aloud rapidly, smoothly, and with expression, just as I do when I read it to you. *The teacher selects a story on the students' independent reading level and reads it aloud, emphasizing smooth, rapid reading that includes pacing, phrasing, and emphasis that sounds like natural speech.*
Provide guided practice and check skill acquisition.	T: Here's what I want you to do with this story. First, I want you to whisper-read it on your own. I'll pull my chair by your chair and listen to a little of what you are reading. You'll have to read louder than a whisper when I listen to you read, but you'll go back to whisper-reading when I go on to the next person. *The teacher moves from one student to another, listening for rapid, accurate word recognition; grouping of words into meaningful phrases; and expression that sounds like natural speech. Corrections for errors in decoding are provided immediately so students can focus on building fluency. After listening to each student in the group read, the teacher shifts all but one student to a listening center to continue to work on fluency. The remaining student will read the story again with the teacher counting errors and calculating a "words correct per minute" for that student. This number is recorded so the teacher can monitor the student's progress in gaining fluency. This kind of data is collected on each student several times during the year.*
Remind students of the lesson's purpose and	*Before moving on to the next activity, the teacher reminds students of how reading with fluency aids comprehension, and makes an assignment to provide additional practice that focuses on building fluency.*

Teacher Behavior and Purpose	Example Lesson Excerpt
provide additional independent practice.	T: Remember, we want to read quickly and smoothly because this helps us understand what we've read. Now, I want you to select a book from our class library and read one part of it several times until you think you can read it rapidly, with no mistakes, and with good expression. Then, I want you to read it to one of your reading teammates. I also want you to take the book home and read it to someone at your house tonight.

Vocabulary

What Is Vocabulary and How Is it Important in Learning to Read?

The term *vocabulary* refers to words we need to know to communicate with others. There are four types of vocabulary: listening, speaking, reading, and writing. Listening and speaking vocabularies are sometimes referred to collectively as oral vocabulary.

Four Types of Vocabulary	
Listening: words we understand when others talk to us	**Speaking:** words we use when we talk to others
Reading: words we know when we see them in print (sight words and words we can decode)	**Writing:** words we use when we write

Vocabulary is important in word recognition. Young readers use the pronunciations and meanings of words in their oral vocabulary to help them recognize words they see in print. When children sound out an unfamiliar word, they use the trial pronunciation they have created to search their oral vocabulary. If they find a match and it makes sense in the sentence, they resume reading. If the word is not in their oral vocabulary, they will have a difficult time recognizing that word in print even if they are able to produce an accurate pronunciation by decoding.

Vocabulary also plays an important role in comprehension. Much of the research dealing with the effects of vocabulary instruction on comprehension has involved children in upper-elementary grades and above; however, the findings have implications for improving comprehension in younger children as well. These findings include support for two instructional practices that improve comprehension: ongoing, long-term vocabulary instruction (Beck, Perfetti, & McKeown, 1982) and teaching vocabulary words prior to making reading assignments (Brett, Rothlein, & Hurley, 1996; Wixson, 1986).

Additionally, vocabulary is important for reading to learn as well as learning to read. Children need to understand the meanings of the words they read if they are to learn from what they read (Nagy & Scott, 2000). Baker, Simmons, and Kameenui (1995) tell us that "vocabulary acquisition is crucial to academic development. Not only do students need a rich body of word

knowledge to succeed in basic skill areas, they also need a specialized vocabulary to learn content area material."

What Do We Know about Vocabulary Instruction?

Based on its extensive review of scientifically based reading research, the National Reading Panel (NICHD, 2000) suggested several implications for vocabulary.

Vocabulary should be taught directly even though a great deal of vocabulary is learned indirectly. Effective vocabulary instruction includes teaching new words *directly* by providing explicit, clearly written definitions and well-chosen examples and nonexamples, as well as helping students learn words *indirectly* by teaching word-learning strategies students can use to learn words on their own.

We know that direct teaching of words that are necessary to understanding a given text before asking students to read the text helps them learn the words and understand what they are about to read (Wixson, 1986). Word-learning strategies that support indirect learning of new words- such as how to use a dictionary, word parts or root words, and context clues to determine what unfamiliar words mean? are also important elements of vocabulary instruction. These strategies help students learn new words as they are encountered in what the students are reading.

Reading aloud to students is another way they learn unfamiliar words. Teachers should talk with students about the story before, during, and after reading it aloud. This discussion should include an explanation of the meaning and usage of new vocabulary words, and it should help students connect them to what they already know or have experienced. Students who have larger oral vocabularies benefit more from hearing stories read aloud. This implies that students with less developed oral vocabularies will need more support in learning new words (Robbins & Ehri, 1994; Nicholson & Whyte, 1992).

Repeated exposure to new vocabulary is important. The frequency with which a word is encountered increases new word learning for kindergarteners and first graders (Leung, 1992), and repeated readings can help young children's vocabulary growth (Senechal, 1997).

New words are learned more effectively in a rich context. Words that students will encounter in a variety of text are more useful and therefore should receive emphasis in vocabulary instruction. Selecting words that are found in books students will read inside and outside of school makes the task of learning new words more worthwhile (McKeown, Beck, Omanson, & Pople, 1985).

Restructuring vocabulary tasks can help students learn new vocabulary. Restructuring vocabulary tasks includes rewriting textbook definitions to make them more complete and easier to understand and providing sample sentences along with definitions. For example, a teacher might introduce the word *hurricane* by expanding the textbook definition using words students will readily understand and writing sentences on the board that illustrate the word's meaning.

Textbook Definition	Rewritten Definition	Sample Sentences
A *hurricane* is a tropical storm with circulating winds over 74 miles per hour.	A *hurricane* is a very dangerous storm that usually begins in warm ocean waters and has extremely strong winds that move in a circle around the center of the storm.	The strong winds and heavy rain from the *hurricane* damaged many homes. The weather report warned everyone of the *hurricane's* powerful winds.

Clarifying word meanings through these kinds of strategies improves vocabulary learning (Gordon, Schumm, Coffland, & Doucette, 1992; Scott & Nagy, 1997).

Active engagement with vocabulary improves learning. Active engagement means students are involved in an active rather than passive manner in working with new vocabulary words. This can include using new words in sentences, matching words with definitions, sorting examples and nonexamples of new concepts, or discussing what new words mean with classmates. More active engagement was identified as an important factor in helping students learn vocabulary words in a number of studies, including a study with prekindergarten children who learned more when they answered questions about the story while it was being read than when the story was read straight through without questions (Senechal, 1997). Drevno, Kimball, Possi, Heward, Gardner, and Barbetta (1994) reported that correcting student errors in science vocabulary by supplying the correct definition and having the student repeat it made a positive difference in helping students learn new terms and concepts. They suggested that the active engagement of having students repeat the correct definition improved student learning.

Processing New Words in Multiple Ways

Providing multiple ways for students to work with new words enhances their understanding of those words (McKeown et al., 1985; Stahl, 1991). Here are several examples that are easy to use:

Associate new words with known words. Give students "clue words" that connect with new vocabulary words and ask them to identify how these words are related. (How is *story* related to *novel*? Why do these two words belong together?)

Use new words in a sentence. It is important that students use a new word in a sentence that shows they understand the word's meaning. Connecting new words to personal experience or prior knowledge is one way to do this. (My mom and dad took me to see the *ocean* for the first time.)

Match definitions to new words. Use activities that make this type of practice fun for students, including game-type activities. Student-written definitions can be used to provide variety.

Use new words in different contexts. Students who take words they learn in one context and transfer them to another setting are demonstrating the depth of their understanding of those words. This should be recognized and reinforced so that students look for opportunities to use

new words in new contexts. (The teacher explores with the class how the word *fishing* has different meanings depending on the context—fishing for trout, fishing for her keys in the bag, or fishing for a compliment.)

Provide students with multiple exposures to new words. Students need to see, hear, read, and write new words repeatedly and in different contexts to learn the words completely. Teachers who model how vocabulary can be used across different subjects help students understand the usefulness and practicality of learning new words. (To help students have a more complete understanding of the word *honesty,* a teacher gave students short stories about George Washington and Abraham Lincoln that illustrated honesty, asked students to write about a time when they had been honest about something, and shared quotations from people who spoke about the importance of honesty.)

An Example of Effective Vocabulary Instruction

Preview: The teacher in this lesson excerpt is using two strategies of restructuring vocabulary tasks (rewriting definitions and using vocabulary words in sentences) to help students learn new vocabulary words from a story they will be reading about life on a farm. The teacher has restructured the dictionary definitions of these words to make them more complete and to take advantage of students' prior learning. The teacher will introduce the rewritten definitions and provide examples and nonexamples to clarify each word. The students will be asked to sort through additional examples and nonexamples to enable the teacher to check their comprehension of these words prior to reading the story.

Teacher Behavior and Purpose	**Example Lesson Excerpt**
Introduce the new words and the strategies to be practiced.	T: We're going to read a story about what it is like to live on a farm. There are a couple of words in the story that may be new to most of us. So, we need to learn their meanings before we read. I took the dictionary definitions and expanded them to help you learn both words. When we've talked about the rewritten definitions, I'll ask you to use each word in a sentence so I can be sure you understand its meaning.

Teacher Behavior and Purpose	Example Lesson Excerpt
Provide explicit information about words through clarified definitions, examples and nonexamples, and example-testing.	The two words are *pasture* and *graze.* I looked them up in our dictionary and this is what it said: *The teacher writes the two dictionary definitions on the board.* <u>*Dictionary Definitions*</u> *pasture:* field set aside for grazing *graze:* to feed on growing grass I worked on the dictionary definitions until I thought they would be more helpful to us in understanding these words, and here is how I expanded them: <u>*Rewritten Definitions*</u> *pasture:* a field of grass set aside by farmers for cows and other farm animals to eat *graze:* to slowly eat grass that is growing in a field T: I came up with a sentence that uses both words in a way that helps you understand what they mean. "The farmer led the hungry cows to the wide, green *pasture* where they able to *graze* on the tall grass until their stomachs were full." T: Let's check our understanding by thinking about some new examples. If I went to a park and saw a big open space with lots of grass, would that be a pasture? S: No. That's a park. A pasture is a place they let farm animals eat the grass. They don't keep farm animals in a park. T: That's right. It wouldn't be a pasture because it is used by people, not farm animals. Here's another sentence with both words in it. Does this sentence use the words correctly? *The teacher writes this sentence on the board:* The farmer let the big herd of sheep graze all day until they had eaten most of the grass in the pasture. S: Yes, because it tells you that grazing means eating grass and that a pasture is a place with lots of grass for animals to eat.
Explain how to apply the strategy of using new words in a sentence.	T: Using new words in a sentence helps us understand them. When you learn a new word, think about what it means and then try to make that meaning clear in a sentence. For example, if I have just learned the meaning of the word *microscope* as "a device for looking at very small things," then I would think about what it means and try to put it into a sentence of my own.

Teacher Behavior and Purpose	Example Lesson Excerpt
	So, my sentence might be "You can see things through a *microscope* that are too small to see with just your eyes."
Provide guided practice.	T: Now, let's use the word *pasture* in a sentence that shows we really understand its meaning. Remember, we don't want to make up sentences like "Pasture is one of our vocabulary words." Sentences like that don't tell us anything about the meaning of the word. What would be a better sentence using the word *pasture*? S: I've got one. The pasture is where animals eat grass. T: Remember, we don't want to just rewrite the definition into a sentence. We want to write sentences that show we can use the word, not just define it. S: What about this? The animals were hungry because all of the grass in the pasture had dried up. T: That would be a good one because it makes it clear that the purpose of a pasture is to provide animals with grass to eat. Now, let's get started, and I'll look over your shoulder and check your sentences as you write. Remember, you can use both of our new words in the same sentence if it makes sense to do that. *Students spend 5 to 8 minutes drafting sentences that use one or both of the new vocabulary words.*
Remind students of the lesson's purpose.	T: When we read a story or a part of one of our textbooks, we may come across words we don't understand. Sometimes the definition in the dictionary or glossary is not enough to help us understand the word completely. We may need to get someone who knows the word already to add to the definition so it is more complete. Another way to understand a new word is to use it in a sentence. If you can use it in a sentence that makes sense, you probably understand the word well enough to continue reading. If you can't use it in a sentence of your own, you probably should ask for help in figuring out what the word means.

From Where Does Vocabulary Growth Come?

There are two factors that contribute to vocabulary growth outside of formal, direct instruction. One is the frequency of new or unfamiliar words found in what is read, and the other is the volume of words that are read. In order for a student's vocabulary to grow, the student must come in contact with words outside his or her current vocabulary. Most children will encounter far more unfamiliar words in print than in conversational speech or on television. Hayes and Ahrens (1988) conducted a detailed study of the number of rare words per 1,000 words spoken or read. The results may be surprising.

Source	Rare Words per 1000 Words
Abstracts of scientific articles	128
Newspapers	68.3
Popular magazines	65.7
Comic books	53.5
Adult books	52.7
Children's books	30.9
Cartoon shows	30.8
Courtroom expert witness testimony	28.4
Prime-time adult TV shows	22.7
Prime-time children's TV shows	20.2
Conversations of college graduates to friends or spouses	17.3
Preschool books	16.3

These findings emphasize the importance of reading as a source of vocabulary growth. The other factor, volume of words read, also reveals some surprising numbers. Students who read just under five minutes per week outside of school will read only 21,000 words in a year. Those who read nearly 10 minutes per day will read 622,000 words in a year; at 15 minutes per day, the total jumps to over 1,146,000 words per year. Those who read over an hour a day will read more than 4,358,000 words each year.

Selecting the Right Words to Teach

Part of teaching vocabulary is deciding which words will be introduced and taught directly. Because it is not possible to spend time on all of the words children need to learn, teachers will need to select which words are worth teaching directly. Here are criteria (adapted from Graves,

Juel, & Graves, 1998) for narrowing the list of vocabulary words and deciding which words to teach:

Identify the words students do not know. Preview what students will be asked to read and identify words they probably will not know. Prior experience with a specific group of students enables the teacher to predict which words they will find difficult.

Identify the more important words. From the list of words they are not likely to know, identify words that are critical to understanding the text. Words with multiple meanings may be particularly difficult for children to learn, so extra attention should be given to words that have more than one meaning.

Identify the words students may not be able to figure out on their own. Eliminate words they can figure out through context or structural analysis. If the textbook uses the word in a way that clearly states its meaning, it will probably not have to be taught directly. Likewise, if the word contains word parts they know or its base or root word is obvious, then students should be encouraged to learn its meaning by analyzing the word's structure rather than through direct teaching of the word.

Identify words students will encounter frequently. Determine how frequently the remaining words appear outside the text. Those that appear more frequently outside the text to be read may deserve additional explanation to ensure that students will transfer their understanding of the words to other texts and settings.

Comprehension

Comprehension involves constructing meaning that is reasonable and accurate by connecting what has been read to what the reader already knows and thinking about all of this information until it is understood. Comprehension is the final goal of reading instruction. While fluent decoding is an essential component of skilled reading, (Block & Pressley, 2002) it should be considered a prerequisite to strong comprehension rather than an end in itself.

Good comprehenders do the following things:

- They use a range of comprehension strategies to deepen and enrich their understanding of what they are reading (Pressley, El-Dinary, & Brown, 1992).
- They are aware of their own thinking processes, and they make conscious decisions to use different comprehension strategies as they read, especially when they detect problems in understanding what they are reading (Baker & Brown, 1984).
- They attribute successful comprehension to effort more than to ability. They believe they can understand what they read if they apply the right comprehension strategies; however, they also believe that achieving this level of understanding requires effort, according to Carr and Borkowski (as cited in Brown, 2002).

What these proficient readers have in common is the use of *comprehension strategies* to help them understand more of what they are reading. The ability to know when and how to use these strategies is essential to understanding different types of text such as stories, informational text, or poetry. Good readers apply comprehension strategies without being directed to do so. They have become self-regulated in their use of these strategies.

What Are Comprehension Strategies?

Comprehension strategies represent many different ways of thinking about what has been read. They can be thought of as *thinking* strategies? they are ways of thinking about what has been read that help readers go beyond understanding the surface meaning of the text. A short list of examples of comprehension strategies includes comprehension monitoring, cooperative learning, using graphic and semantic organizers including story maps, answering questions about what has been read, having students create their own questions about what they have read, using prior knowledge to connect what they read to what they already know, and summarizing what they have read.

For children in kindergarten through second grade, comprehension strategies should be presented in very simple terms. For example, story maps are a fairly complex way to represent a story's structure graphically. Students who are not yet old enough to create story maps may draw a picture that translates what they remember and understand from the story into graphic

form. By simplifying comprehension strategies, teachers can begin to build younger students' thinking skills.

Two popular comprehension strategies are described below: using prior knowledge or background knowledge and generating questions. Both strategies have proven to be effective in improving students' comprehension of text.

Comprehension Strategy: Using Prior Knowledge

The important role of background knowledge is cited by Harris and Hodges (1995) when they define reading as a process of constructing meaning in which the reader connects prior knowledge with new information that is encountered in the text. The broad base of research on the importance of utilizing background knowledge to improve comprehension includes several points teachers should consider:

- Stronger comprehenders use their background knowledge to identify or make connections among ideas in what they are reading (van den Broek & Kremer, 2000).
- Readers who lack background knowledge on a specific topic have greater difficulty answering questions that require inference, and they are less able to recall factual information from what they have read (Recht & Leslie, 1988).
- Weak comprehenders may not recognize inconsistencies between what they read and their background knowledge. Instead, they may ignore or modify information in the text so they can hold on to their current understanding, even if it is incorrect (Beck & McKeown, 2001).

What Activities Help Students Connect What They Are Reading With Relevant Background Knowledge?

Providing structured class or small-group discussions of the topic covered in the text allows everyone to benefit from the background knowledge of other students. A student who has had personal experience with a topic or has read more extensively about the topic can help others understand more of what they are about to read by sharing those experiences or that more extensive knowledge.

In addition to structured activities that bring background knowledge to the surface, teachers should encourage students to use what they know about a topic while reading without waiting for their teacher to make it a formal assignment. This is consistent with a key goal of comprehension strategy instruction, that is, to enable students to apply these strategies on their own.

Teachers want students to use relevant background knowledge while they are reading to help them interpret and understand what is in the text. One way to do this is to have students stop reading when they come to an idea or event in the text that they can connect with something they already know and write down a brief note about that connection. This can be done on a self-adhesive note and stuck in the margin of the text. Talking about the notes students made while reading is an effective way to organize a discussion of what was read.

Readers can also use note-taking as a tool to identify questions that might be answered as they continue reading (why was the little boy sad?), important points they want to remember (the Panama Canal wasn't finished until five years after Roosevelt left office), or things in the text that created confusion (I don't know what the word *winsome* means).

Comprehension Strategy: Generating Questions

Skilled readers use questions to focus their attention as they read or to connect what is in the text with their prior knowledge. Questions can lead the reader to predict what might be found in text still to be read or to identify aspects of the writer's style or perspective. Proficient readers understand that creating, pondering, and answering questions about what they have read deepens their understanding and, in many cases, their enjoyment of the text.

Creating questions based on the text provides numerous benefits for readers:

- Better monitoring of comprehension (Davey & McBride, 1986). Readers who ask themselves questions during or after reading are able to identify comprehension problems sooner and more accurately.
- Improved comprehension and better recall of information (King, 1994; Davey & McBride, 1986; Rosenshine, Meister, & Chapman, 1996).
- Greater accuracy in answering questions and better identification of main ideas (Rosenshine et al., 1996).

An important aspect of this strategy is the extent to which teachers explain, model, and provide practice in generating questions. When instruction in how to generate questions was brief, students did not show improvement in comprehension or recall (McDonald, 1986). With more explicit, detailed instruction and sufficient opportunity to practice the strategy, having students generate their own questions improves comprehension and the ability to recall what has been read (Davey & McBride, 1986; Pressley & Woloshyn, 1995).

How Can Teachers Use Question Frames to Help Students Generate Their Own Questions?

The National Reading Panel Report (NICHD, 2000) states that "without training, young readers are not likely to question themselves. Nor are they likely to use questions spontaneously to make inferences" (p. 4-87). One method of training students to generate their own questions is the use of question frames. The teacher provides a short list of questions that students use by inserting important ideas from the text they are reading. An example drawn from a third-grade classroom where students are reading about weather follows:

Question Frame	Student-Generated Question
How would you describe _____ in your own words?	How would you describe the three types of clouds in your own words?
What is the difference between _____ and _____?	What is the difference between snow and hail?

The mental process students use to select information from the text and combine it with an appropriate question frame improves their understanding of what they have read. Students should also be asked to develop answers to their own questions to provide further engagement with the content of the text. When students use question frames such as the examples below, which were adapted from the work of King (1994) and Pressley and Woloshyn (1995), they are better able to create the types of questions that improve comprehension.

Comprehension question frames:

- How would you describe _____ in your own words?
- What does _____ mean?
- Why is _____ important?
- Why did _____?
- How did _____?

Connection/analysis question frames:

- How are _____ and _____ alike?
- What is the difference between _____ and _____?
- How does _____ make a difference in _____?
- What are the strengths and weaknesses of _____?
- What causes _____?
- What would happen if _____?
- How could _____ be used to _____?
- How is _____ similar to what you have read in other books or stories?

An Example of Effective Instruction on Generating Questions

Preview: This third-grade teacher is teaching students how to create their own questions about a text to improve their comprehension. The focus is on two types of questions: low-level comprehension questions called "locate" questions and higher-level questions, which the teacher refers to as "think" questions.

Teacher Behavior and Purpose	Example Lesson Excerpt
Explain what students will do.	T: We're going to be reading a lot about weather over the next two weeks. We're going to read about weather in our science book, in the library books we found on weather, and on the Internet. To help you understand what you're reading, I'm going to teach you how to come up with questions of your own about what you've read. The kind of thinking that you have to do to come up with really good questions helps you combine what you've read with what you already know. It also helps you understand and remember what you have read.
Explain the two basic types of questions and how it will be helpful to generate questions of both types.	T: There are two types of questions that I want you to learn how to write. "Locate" questions can be answered by finding specific facts or information in what you've read. These questions don't require you to add any of your own knowledge. They are questions you can answer by locating information in what you've read. "Locate" questions help you remember important information. "Think" questions require you to connect information in the text with things you already know. These include questions that ask you to explain something in your own words or to show how two things are alike or different. These questions help you by making you think pretty hard about what you're reading. This kind of thinking helps you understand more of what you've read.

Teacher Behavior and Purpose	Example Lesson Excerpt
Provide explicit instruction that includes modeling of the strategy.	T: To start you off with an example, I'm going to use the question frames we've used before. First, I look over the list of question frames (*teacher refers to list on the overhead*), and I select one that makes me think of a question about what I've read. *These question frames are written on the overhead.* 1. What does _____ mean? 2. Why is _____ important? 3. Why did _____? 4. How did _____? 5. How are _____ and _____ alike? 6. What is the difference between _____ and _____? 7. What causes _____? 8. What would happen if _____? T: Since this chapter in our science book has a lot of new vocabulary, I'm going to start out with the first question frame and write in one of the vocabulary words. What does <u>climate</u> mean? *The teacher writes the question on the board.* This is a "locate" question because the definition of *climate* is right there in the first paragraph on page 72. Now, I want to come up with a "think" question. As I read through the next paragraph, it says that climate is very important to plants and animals. It says that some plants and animals can't live in a colder climate. That makes me think of a question using the last question frame: What would happen if <u>the climate got much colder?</u> This is a "think" question because I can't locate the answer in the book. I have to "think" about what I read and what I already know to come up with the answer.
Provide appropriate practice.	*The teacher gradually transfers responsibility for generating questions to students by prompting them to come up with questions of both types, giving them feedback on their questions, and finally, allowing them to work in pairs to create their own questions about this chapter in the science book.* T: Now get with your partners and create three questions from the section beginning on page 72 and ending on page 74.

Teacher Behavior and Purpose	Example Lesson Excerpt
Ending review	*After the students have had time to create several questions, the teacher and class work through a number of student-generated questions, focusing on the content of the chapter as well as the questions students created.* T: Who has an example of a "think" question? S: Do we live in a cold climate? T: A yes-or-no question is not the kind of think question we are looking for. Who can ask me a question that makes me think about the word *climate?* S: What kinds of jobs need to pay attention to the climate and why? T: This is a good example of a think question. You must use what you learned in the chapter, think about it, consider what you know about different kinds of jobs, and answer the question. It is good because you are thinking and using information that you already know and putting it together. Okay, I think you did a pretty good job of writing your own questions. Remember, coming up with questions isn't something you just do in science. It's a way to help you understand anything you are reading. Let's go over what we learned to do. First, we decided that writing questions of our own was a good way to understand more about what we've read. Then we talked about how we can use the question frames to get us started with writing our own questions. Finally, we practiced writing two types of questions: those that could be answered by locating information in the book and those that made us think about things we learned from other places also. Even if you don't write the questions down, thinking about your own questions and how you would answer them will help you understand what you are reading.

Other Effective Comprehension Strategies

Comprehension monitoring. Readers monitor their own comprehension of a text by noticing when they begin to lose the meaning of what they are reading. When they realize they have lost the meaning, they can then apply one or more "fix-up" strategies such as summarizing what they have read in their own words, looking back through what they have read, or reading ahead (Taylor & Frye, 1992). Comprehension monitoring instruction is appropriate for students in second grade and above (NICHD, 2000).

Cooperative learning. This strategy places students with a partner or in a small group and provides clearly defined tasks that require the active engagement of each student. In these activities, group members help each other increase their understanding of what has been read by explaining the material in their own words (Klingner, Vaughn, & Schumm, 1998).

Graphic and semantic organizers. Teaching readers to draw visual displays to organize the ideas found in what they are reading helps them remember what they read and can produce stronger comprehension in subjects such as social studies and science (Armbruster, Anderson, & Meyer, 1991).

How Can Comprehension Strategies Be Taught Most Effectively?

Even though modeling a comprehension strategy is an effective approach, it is much more effective to use an explicit explanation along with modeling of the strategy (Duffy, Roehler, Sivan, Rackliffe, Book, Meloth et al., 1987). Modeling may include a demonstration of how to use the strategy with only a brief explanation. A more detailed explanation of what is involved in using the strategy is required in order for students to be able to apply it on their own.

Direct explanation is a term applied to an instructional technique that makes the important features of a comprehension strategy explicit and clear. Teachers who use direct explanation of comprehension strategies focus their explanations on what skilled readers actually do to improve comprehension and then, how they determine which strategies to use in a specific situation. The goal is to help readers understand *what* skilled readers do in trying to gain a deeper understanding of what they are reading, and to know *when* to use a particular comprehension strategy. This enables readers to gain control over the strategy so they are able to select the "right tool for the job" and use it effectively.

How Can Teachers Use Direct Explanation to Help Students Acquire Comprehension Strategies?

Ideas That Are Effective in Using Direct Explanation With Students

- It is important that students perceive the strategy to be taught as something useful.
- Immediate opportunities to use the strategy in an appropriate reading task are also important.
- Repeat the explanation and modeling of how to use the strategy within the same lesson presentation.
- Opportunities to practice should transfer responsibility to students gradually.
- Assess how well students understand the content *and* how well they used the strategy that was taught.
- Maintain a focus on the strategy while teaching the content of the text.

Adapted with permission of Guilford Press from "The Case for Direct Explanation of Strategies" by Gerald Duffy in *Comprehension Instruction: Research-Based Best Practices*, edited by C. C. Block and M. Pressley.

It is important that students perceive the strategy to be taught as something useful. When students believe they have a real need to learn the strategy and they will benefit from applying it, their attention and willingness to try out the strategy increase.

Immediate opportunities to use the strategy in an appropriate reading task are also important. Waiting until tomorrow's lesson to apply the strategy that was taught today allows much of the benefit of direct explanation to fade.

Repeat the explanation and modeling of how to use the strategy within the same lesson presentation. Hearing several times how a highly skilled reader uses the strategy allows students to develop a more complete mental picture of how it works and to pick up the subtleties of the strategy as well as the broad steps. The explanation should include what problems a skilled reader might face in using the strategy and how such a reader would resolve them to better understand what has been read.

Opportunities to practice should transfer responsibility to students gradually. Multiple opportunities to practice a strategy should be accompanied by support and guidance from the teacher that gradually transfers responsibility for applying the strategy to students. Support should be readily available while students are just beginning to use a new strategy, but it should lessen as they gain confidence in using the strategy. This may be structured so the teacher does most of the work in applying the strategy at first, leaving the simpler steps for students to complete, but students should gradually do more and more until they are applying the strategy successfully on their own.

Assess how well students understand the content ***and*** *how well they used the strategy that was taught.* When students have had a chance to practice the strategy, check their comprehension of the content and ask them to explain how they used the comprehension strategy to help themselves understand the content. This helps students understand the importance of the strategy, and it provides a way to give students feedback on its use.

Maintain a focus on the strategy while teaching the content of the text. It is helpful that students know and understand they are learning a comprehension strategy and important content at the same time.

Conclusion

Teaching children to read is a challenging responsibility. Fulfilling this responsibility requires knowledge of effective instructional practices and a willingness to use them. Teachers who have a thorough understanding of the five essential components of effective reading instruction are equipped to teach children to read using instructional strategies and materials that have proven to be effective.

The five essential components of effective reading instruction represent ingredients that must be present in order for children to learn to read. Effective teachers know how to blend these ingredients in the right proportions to meet the unique needs of each child. They understand the roles of *phonemic awareness* and *phonics* in building word-recognition skills, and they know how to identify and correct students' weaknesses in these areas. They also know that these two foundational components will receive less emphasis as students gain competence as readers.

Effective teachers know how *fluency* facilitates comprehension, and they know how to use research-based strategies for helping students become fluent readers. These teachers are continually building each student's *vocabulary* and the ability to learn the meanings of new words through a variety of word-learning strategies. Finally, they know that *comprehension* is the ultimate goal of reading instruction, and they are adept at helping students learn to apply appropriate comprehension strategies as they read.

Those who accept the responsibility for teaching children to read understand that it includes a commitment to continually search for more effective ways to help children gain competence in this very important skill. This paper is intended to provide teachers with a clear description of these components, how they influence reading and reading achievement, and how they can be taught effectively. An in-depth understanding of these components will enable teachers to plan an effective program of reading instruction, diagnose reading difficulties and provide instruction that targets those difficulties effectively, evaluate reading materials and instructional practices, and help others become more effective teachers of reading.

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