The Research Foundation of *Kaleidoscope*:
*SRA/Open Court Reading Intervention*

Although most students do learn to read in school, a small but significant number struggle to acquire reading skills and, over time, experience major difficulties in developing those skills through regular classroom instruction (see Klenk & Kibby, 2000). These reading difficulties are not confined to any one segment of the school population. They occur among middle-class white students as well as among poor and minority students and students who are non-native speakers of English (Regalado, Goldenberg, & Appel, 2001). For these students the consequences of reading failure are wide ranging. Students who are not skillful readers often are trapped in a web of academic, social, and psychological problems that limit their options and opportunities throughout their lives (Harris & Sipay, 1990; Juel, 1988; Stanovich, 1986). What makes this situation especially dismaying is that educators now have evidence that virtually all students who display reading difficulties can be taught to read with proficiency (see American Federation of Teachers, 1998; Goldenberg, 1994; Torgesen, 2001; Moats, 1999). The ultimate objective of *Kaleidoscope, Open Court Reading*’s reading intervention program, is to provide the kind of reading instruction that can help schools help their students achieve this goal.

Since their inception more than forty years ago, *Open Court Reading*’s programs have been based on the belief that helping all students become skillful readers demands nothing less than the best efforts of educators. The authors of *Open Court Reading* have designed its curricula and lessons around what the best scientific research has revealed about how students acquire reading skills, why some students have difficulty with reading, and what constitutes the ideal instructional content and methods for teaching students to read well. Year after year, students who have been taught with *Open Court Reading* have consistently performed at the highest levels on national standardized tests, state-mandated tests, district tests, and scores of other tests.

In *Kaleidoscope, Open Court Reading* brings its time-tested and classroom-proven record of success to the instruction of students who are in the greatest danger of being left behind—those who read two or more years below their chronological grade level. The purpose of this booklet is to describe the research that serves as the foundation for *Kaleidoscope*’s instructional methods and content.

**What Research Shows about Effective Reading Intervention Instruction**

In the past, efforts to correct reading difficulties generally involved tracking, grade retention, or placing students in remedial reading programs or special education classes. These efforts were seldom successful. In fact, such efforts often hindered more than helped student reading achievement (see Hiebert & Taylor, 1994; Klenk & Kibby, 2000; Snow, Burns, & Griffin, 1998).

Today research shows that most struggling readers do not require instruction that is
different from the kind of instruction shown to be effective with more successful readers; rather, struggling readers require a more intense version of that same kind of instruction (Snow et al., 1998; Torgesen, 2002). What, then, constitutes “effective” instruction? First, numerous studies over several decades have shown that effective reading instruction is explicit and systematic—not hit-or-miss (see Adams, 1991; Chall, Jacobs, & Baldwin, 1990; Foorman, Francis, Beeler, Winikates, & Fletcher, 1997; Foorman, Francis, Fletcher, Winikates, & Mehta, 1997; National Reading Panel, 2000; Torgesen, 2002). Second, effective instruction stresses five areas that are essential for students’ reading success. As identified by the National Reading Panel (2000), these areas are

- development of phonemic awareness,
- phonics instruction,
- development of reading fluency,
- development of vocabulary, and
- development of text comprehension strategies.

The discussion that follows includes an examination of each of these key areas, the importance of each to reading development, and how each area is addressed in *Kaleidoscope*.

**Development of Phonemic Awareness**

A phoneme is the smallest unit of speech that makes a difference to meaning (for example, the word *hop* contains three phonemes, /h/ /o/ /p/, and differs by one phoneme from each of the spoken words *hip*, *top*, and *hot*). Phonemic awareness is the conscious understanding that spoken words are made of phonemes. Phonemic awareness involves the ability to identify and work with these sounds to put together and take apart spoken language. Phonemic awareness depends on a student’s ability to focus on the sounds (as opposed to the meanings) of words (Adams, 1990).

**Why Phonemic Awareness Development Is Important**

Helping students develop phonemic awareness is important for the simple reason that unless they can hear and identify the sounds of language and learn to think of words as having sounds as well as meanings, students will have difficulty understanding and applying the alphabetic principle—the idea that written letters represent the spoken sounds—and, thus, they will have difficulty in becoming successful readers (Stahl & Murray, 1998).

Indeed, students who become successful readers invariably have phonemic awareness, whereas those who lack it invariably have difficulty (see Mann, 1998; Stanovich, 1986; Tunmer & Nesan, 1985). Students’ ability to identify and work with phonemes strongly correlates with their reading success through their school years (Calfee, Lindamood, & Lindamood, 1973). Students who are good readers can quickly, accurately, and automatically recognize phonemes and put them together to make words, sentences, paragraphs, and entire texts. Students who lack these abilities find it difficult to read even single words, much less a more extensive text (Juel, 1991; Stanovich, 1994).
Effective Phonemic Awareness Instruction

As important as phonemic awareness is, achieving it is not easy because speech has no markers to show the end of one phoneme and the beginning of another. As people speak, they co-articulate, or overlap, phonemes in words, making it difficult to hear individual phonemes. Moreover, as people listen, they do not usually focus their attention on individual sounds in words but focus on the meanings of the words instead (Adams, Foorman, Lundberg, & Beeler, 1997). Although some students—generally those who have many experiences with spoken and written language—are able to develop phonemic awareness on their own, many—especially those with limited language experiences—do not. For these students in particular, phonemic awareness instruction is crucial. To be most effective, this instruction must be explicit and systematic (Alexander et al., 1991; Brady, Fowler, Stone, & Winbury, 1994; Torgesen et al., 2001).

No single sequence of phonemic awareness instruction has been established as the most effective. However, many researchers suggest that instruction follow a progression that reflects a “shallow to deep” developmental pattern of teaching students to understand the relationships between spoken and written language (Stanovich, 1993). That is, the progression should begin with large units of language, such as sentences, that are simple for students to understand. Instruction should continue through smaller and smaller units, concluding with the most complex unit of language—phonemes. A typical progression might resemble the following (see Ehri et al., 2001). Students learn to

- recognize individual words within sentences and compare word length;
- recognize and produce rhymes;
- break words into syllables;
- break syllables into onsets and rimes;
- identify, isolate, and match initial, final, and medial phonemes in words;
- orally blend phonemes to make words;
- orally segment phonemes in words;
- add, delete, and substitute phonemes in words to make new words.

Oral blending and segmentation activities are an especially important part of phonemic awareness instruction. Having the ability to blend sounds prepares students for the “phonics” blending they will need in order to read written language. Having the ability to segment words into sounds contributes greatly to writing and spelling skills (Adams, 1990).

Effective phonemic awareness does not require a great deal of instructional time. Research has indicated that daily fifteen-minute activities are usually sufficient. Students’ phonemic awareness should be assessed before instruction begins and reassessed frequently during instruction to monitor individual progress. Students who “catch on” to an activity should move on to another. In general, phonemic awareness instruction should end when students are able to easily hear, identify, and relate sounds to letters (Armbruster, Lehr, & Osborn, 2001).

Comprehensive, explicit instruction in phonemic awareness is included in Kaleidoscope.
The program’s instructional methods for phonemic awareness are as follows:

**Oral Blending**
- Syllable
- Initial consonant
- Final consonant
- One-syllable words
- Initial vowel

**Segmentation**
- Syllables
- Individual sounds

**Discrimination**
- Consonants
- Multisyllabic words

**Word Play**
- Rhymes
- Alliterative words

**Phonics Instruction**

Phonics is the term applied to instructional practices that help students develop an understanding of the alphabetic principle. Understanding the alphabetic principle helps students see that printed letters combine in a systematic way to form words and that words convey the meaning of a text. This understanding is important because successful reading depends in no small part on the reader’s ability to quickly and accurately recognize a printed word and then link it with its meaning (Adams & Bruck, 1995).

**Why Phonics Instruction Is Important**

Research into what skillful readers do as they read has revealed a wealth of information about the importance of phonics instruction to skillful reading. Eye-movement research, for example, shows that skillful readers visually process almost every letter of every word on a page. They seldom skip a word or guess at what it is. In a fraction of a second—too rapid for readers to be aware of—they take in each of the individual letters that make up a word and translate them to speech sounds, then use this knowledge to identify the word and determine its meaning (see McConkie, Kerr, Reddix, & Zola, 1988). Rapid word recognition, a product of phonics instruction, is essential for good comprehension. During reading, both word recognition and comprehension compete for readers’ attention. The more attention readers must give to identifying words, the less attention they have left to give to comprehension (LaBerge & Samuels, 1974). Because skillful readers are able to identify words accurately and automatically, they can focus most of their attention on
comprehension. Less skillful readers, however, must focus most of their attention on word recognition, so comprehension suffers (see National Reading Panel, 2000).

Because rapid word recognition, the key to good comprehension, depends on the readers’ ability to link speech sounds to letters quickly and accurately, students should be encouraged to use their knowledge of sounds and letters to sound out and read words. This encouragement gives them a strategy for comprehending text on their own. Unless they have such a strategy, students use context to derive meaning from words. Research indicates, however, that context use is unreliable for word recognition. In fact, an overreliance on context is a characteristic of less skillful readers (see Nicholson, 1991; West & Stanovich, 1978). Skillful readers do use context to help them decipher the meanings of some words, but context use is only one of their decoding strategies. Students need to learn that when they encounter a word they do not recognize, they first should use their knowledge of sound-letter relationships to try to pronounce the unfamiliar word. When they have done this, the context information will be more helpful for deciphering the word’s meaning (Texas Reading Initiative, 2000a). Helping students use their knowledge of phonics provides them with a powerful strategy that will set them on the road to independent reading.

**Effective Phonics Instruction**

The word *phonics* in the name of a program of instruction does not mean that that program is effective in helping students become skillful, independent readers. Research suggests that for students who are struggling with reading, phonics instruction must involve the explicit and systematic teaching of sound-letter relationships in order to be effective (see Bond & Dykstra, 1967; Chall, 1967, 1996; Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Foorman, Francis, Novy, & Liberman, 1991; National Reading Panel, 2000). Such instruction differs from indirect or nonsystematic instruction in that it involves the explicit teaching of both consonant and vowel sound-letter relationships in a clear sequence. In contrast, nonsystematic methods of instruction may teach sound-letter relationships in an “opportunistic” or “incidental” way—as they appear in a reading selection, for example. Such approaches have been shown to be unsuccessful (National Reading Panel 2000).

While educators agree on the value of phonics instruction, there is no generally agreed-upon sequence for introducing sound-letter relationships. Clearly, the most effective instruction is that which helps students read as many words as possible as soon as possible. To this end, some sound-letter relationships are more useful than are others. For example, /m/, /n/, /r/, /s/, and /t/ appear in more words students will encounter in their reading than do /ks/ and /kw/ (Adams, 1990; Simmons & Kame’enui, 1998). Because some sounds are easier for students to hear than others, educators should begin instruction by selecting some continuous consonants whose sounds can be pronounced in isolation with the least distortion, such as /m/, /n/, /r/, and /s/. Stop consonants at the beginning or middle of words are more difficult for students to blend than are continuous ones. Finally, instruction also should separate the introduction of sounds for letters that are auditorially
confusing, such as /b/ and /v/ or /i/ and /e/, or visually confusing, such as b and d or p and g (Adams, 1990; Stahl, Duffy-Hester, & Stahl, 1998).

Effective phonics instruction should provide students with ample practice opportunities with isolated words, decodable texts, writing, word family activities and word play.

**Isolated words** For each sound-letter relationship introduced, students should engage in quick and directed practice identifying isolated words in which the relationship appears. Such work focuses students’ attention and reinforces their recognition of the targeted relationship. Practice may include completing worksheets or workbook pages tied specifically to the sound-letter relationship. However, these practice pages are never used as a substitute for reading words in context, nor are they ever used simply as busywork or as the only method of phonics instruction (Osborn, 1984).

**Decodable texts** Students also apply what they are learning by reading simple, decodable texts or short books or stories. These readers contain a high proportion of words that conform to the sound-letter relationships students have just learned as well as words with relationships for students to review. Decodable stories also include enough high-frequency words and previously taught “story” words to make the text more interesting and natural sounding (Beck & Juel 1995; Juel & Roper/Schneider 1985). In the best decodable stories, high-frequency words are familiar to students while other words are sufficiently unfamiliar to require students to apply their phonics knowledge and not just repeat text they have memorized. For example, a story that contains the less familiar words led and fed might also contain the more familiar word red (Texas Reading Initiative, 2000a).

After reading a decodable text, teachers and students discuss what the story is about to promote comprehension and to underscore the idea that the purpose of reading is to derive meaning from written language (Texas Reading Initiative, 2000a). After the entire class has participated in reading and rereading a decodable story, students are encouraged to reread it on their own or with a partner during independent work time. As students learn to decode words, combine sentences, and read whole decodable texts with fluency, they are able to devote more mental energy and attention to the meaning of what they read. At this point, a world of literature becomes available to them. Effective instruction moves students into reading “real” literature as soon as possible, ensuring that they read and reread a variety of books.

**Writing** For young students, writing may begin with dictation as teachers say words that contain sounds and spellings students have learned. As they gain more and more phonics knowledge, students can apply that knowledge by writing on their own. Often students will use “invented” spellings as they write. Although this practice has been viewed with concern by some who fear that it detracts students from learning to spell correctly, research indicates otherwise. Using invented spellings may encourage students to write more and thus learn more about how written language works (Shefelbine, 1995). Beginning in first grade, effective instruction allows invented spellings initially then moves students gradually into correct spellings (Moats, 1997; Snow, Burns, & Griffin, 1998).
Independent writing opportunities help students see the practical application of their phonics knowledge and allow them to pay more attention to the true purpose of written language—communication. When students no longer have to struggle with sounding out and writing individual words, they can devote their efforts to improving their communication skills by writing in complete sentences and using punctuation marks correctly. At this stage, effective writing instruction introduces students to techniques used by many good writers: planning, drafting, revising, editing (California Department of Education, 1999).

Word families and word play After students have a strong foundation in sound-letter relationships, they engage in activities that involve word families, or phonograms. These activities might ask students to recognize similar patterns in words as they read or have them play word games or rhyming games in which they create as many words as possible from a given phonogram.

In Kaleidoscope letter-sound relationships are introduced in a logical, predetermined sequence with no assumptions made about students’ prior knowledge. Kaleidoscope’s instructional methods for systematic, explicit phonics are as follows:

Sound/spelling cards
- Systematically introduce sounds and spellings
- Provide decoding and encoding (spelling) strategies
- Use color-code on the cards to speed learning

Blending
- Sound by sound
- Whole word
- Syllable
- Sentence
- Vowel first

Dictation and spelling
- Sounds-in-sequence dictation
- Whole-word dictation
- Sentence dictation
- Proofreading

Decodable stories

Writing activities

Word play
- Rhymes
Alliterative words

**Development of Reading Fluency**

*Fluency* refers to the ability to read with speed and accuracy. This definition is not to imply, however, that fluency is synonymous with word recognition. In addition to quick and accurate decoding, fluency also involves the appropriate use of oral language features such as stress, pitch, and phrasing, and an understanding of the purpose of text features, such as punctuation marks, headings, and the use of different sizes and kinds of type (for example, boldface, italic, underlining, all capitals) (see Osborn, Lehr, & Hiebert, 2003).

When fluent readers read, they use their knowledge of sound-letter relationships to recognize words automatically, they quickly connect the words with their meanings, and they group words in meaningful ways, such as in phrases. When they read aloud, fluent readers read effortlessly and with expression, recognizing the purpose of punctuation marks and the clues provided by different text features. Readers who lack fluency read slowly, word by word. Their oral reading is slow and choppy, they may group words in an unnatural way, and they do not pick up on the clues to fluent reading provided in the text (Armbruster et al., 2001).

For most readers, fluency develops over time and through extensive reading practice (Biemiller 1977–1978). Individual readers’ levels of fluency vary, depending on their familiarity with the words in a text and with its subject. Even very skilled adult readers may read in a slow or choppy manner if the text they are reading contains technical jargon or concerns a subject about which they have little background knowledge, such as descriptions of accounts of advanced medical procedures or particle physics (see Osborn et al., 2003).

**Why Reading Fluency Is Important**

Fluency is essential to skillful reading. The National Reading Panel (2000) concluded that “Children who do not develop reading fluency, no matter how bright they are, will continue to read slowly and with great effort.”

Fluency’s importance to skillful reading lies in its direct relationship to comprehension. If readers can read aloud with speed, accuracy, and expression, they are more likely to comprehend what they are reading than if they read haltingly. A recent large-scale assessment of fluency achievement revealed that fourth-grade students who scored lowest on fluency measures had similarly low scores on measures of comprehension (Pinnell et al., 1995).

**Effective Reading through Fluency Instruction**

Among the various instructional approaches shown to be effective in promoting fluency, most involve some form of repeated oral reading and substantial practice (National Reading Panel, 2000).
Repeated oral reading Repeated oral reading requires a student to read a passage aloud several times. Repeated reading approaches shown to be most effective have several commonalities. First, they provide students with models of how fluent readers read. Second, they provide students with explicit feedback that helps them become aware of and correct their mistakes. Third, they provide students with many opportunities to practice reading a selection (Kuhn & Stahl, 2003).

In effective repeated reading instruction, teachers provide a model of fluent reading as students follow along. Then students read the same text aloud, while teachers provide encouraging feedback and guidance with word recognition and expression. Students reread the text until their reading is fluent, which may take three to four rereadings (Kuhn & Stahl, 2003).

Evidence indicates that repeated oral reading with explicit guidance and feedback improves the reading ability of most readers until fifth grade. This type of instruction helps struggling readers even beyond fifth grade (National Reading Panel, 2000).

Independent silent reading Struggling readers need many more practice opportunities than repeated oral reading can provide (Osborn et al., 2003). One way to provide additional practice is through independent silent reading in the classroom. However, the National Reading Panel (2000) found little evidence that this practice works well as a way to build reading fluency. One explanation for its lack of success is that when students read silently, teachers have no way to evaluate the rate and accuracy of students’ reading, and thus no opportunity to provide constructive feedback. In addition, independent silent reading relies on students’ ability to improve their reading on their own. Most struggling readers simply do not have this ability. Although students need to be encouraged to read more outside of class, teachers’ time during the school day is best spent in providing explicit instruction (see Osborn et al., 2003).

Texts to build fluency In addition to the kind of instruction students receive, the types of texts they read play an important role in helping them become fluent readers. Fluency requires many opportunities for students to practice reading with a high degree of success; therefore, for both beginning readers and older struggling readers, the vocabulary used in the books they read directly affects how quickly—and whether—they achieve fluency (Hiebert, 1999). For reading practice, students require text containing mostly words they know or ones they can decode easily. Decodable books work well for beginning readers. Texts for older students should be at the their independent reading level; that is, texts should be ones students can read with about 95 percent accuracy. However, these students also need the opportunity to read some texts at the instructional level—text containing mostly words students know or ones they can decode easily with strong guidance and feedback (Kuhn & Stahl, 2003).

With Kaleidoscope, students read aloud in class with teacher support and feedback. In addition, students practice reading decodable stories. The ongoing assessments in the
program monitor each student’s fluency. *Kaleidoscope’s* instructional methods for fluency are as follows:

**Oral reading**
- Teachers model oral reading
- Students read orally from student anthologies
- Decodable stories (72) included at all levels of program
- Classroom libraries available
- Listening Library CDs and audiocassettes available
- Assessment CD-ROM provides additional oral fluency assessments

**Explicit Teaching of High-Frequency Words**

**Development of Vocabulary**

*Vocabulary* refers to the words people must know to speak, listen, read, and write effectively. In broad terms, two types of vocabulary exist: *oral vocabulary*—words used in speaking or are recognized in listening—and *reading vocabulary*—words recognized or used in reading and writing (Armbruster et al., 2001).

**Why Vocabulary Development Is Important**

One of the most enduring findings in reading research is that the extent of students’ vocabulary knowledge relates strongly to their reading comprehension and to their overall academic success (see Anderson & Freebody, 1981; Baumann & Kame’enui, 1991). This conclusion is not surprising: Skillful reading depends both on students’ having a great many words in their vocabularies and on their having strategies for dealing effectively with new words when they see them in text (Nagy, Winsor, Osborn, & O’Flahaven, 1994). Students who have neither large vocabularies nor strategies for acquiring new words must struggle to derive meaning from what they read. This struggle sets in motion a cycle of frustration and failure for these students that continues throughout their schooling. The reading difficulties of students who enter school with poor or limited vocabularies only tend to worsen over the school years (Biemiller, 1999; White, Graves, & Slater, 1990). For these students, reading becomes a chore because they do not have sufficient word knowledge to understand what they read. As a consequence, these students avoid reading. Because they do not read widely, they have no opportunity to encounter and learn new words and the cycle continues. This is the situation that Stanovich (1986) famously calls “the Matthew Effects” (a reference to the biblical book of Matthew, 25:29—“the rich get richer and the poor get poorer”): Good readers read more, become better readers, and learn more words; poor readers read less, become poorer readers, and learn fewer words.

How then do students acquire the word knowledge they need to enable them to read well, which in turn enables them to learn even more words? An extensive body of research indicates that students learn most words in their vocabularies *incidentally*—from listening to and talking with others—and by seeing words over and over in print (Baumann & Kame’enui, 1991; Nagy, Herman, & Anderson, 1985). Unfortunately, many students come to school from backgrounds that have limited their experiences with both oral and reading
vocabulary, which have limited their opportunities for incidental word learning. In their landmark study of language development, Hart and Risley (1995) found dramatic differences in the oral language experiences of young children from various socioeconomic backgrounds. For example, at age three, children in professional-class families had heard close to thirty million spoken words, twice as many words as had children in working-class families and three times as many as had children in welfare homes. Moats (2001) found that at school entry, many low-SES students were unable to recognize even simple words or to name a picture that shows a familiar subject. Needless to say, these students are unlikely to acquire reading skills without intense instruction. Below is how the National Research Council (Burns, Griffin, & Snow, 1999) summarizes the situation:

Children who lack vocabulary and a useful repertoire of general knowledge can barely take the first step toward the most basic understanding of the texts they encounter. How can they understand a science book about volcanoes, a fairy tale about silkworms, or a short story about Inuits if they don’t understand the words “volcanoes,” “silkworms,” or “Inuits”? (p. 70)

**Effective Vocabulary Instruction**

Although most students acquire word knowledge incidentally through extensive reading, students whose limited vocabularies leave them struggling to read lack this option for acquiring word knowledge. For these students, the most effective vocabulary instruction is intense and explicit, helps them acquire new word knowledge, and provides them with strategies they can use independently to read more and to increase word learning throughout their lives (Graves et al., 1997; Kame`enui, Dixon, & Carnine 1987). Such instruction requires educators to teach key words from reading selections and to show students how to use specific word-learning strategies.

**Specific word instruction** Selecting and explicitly teaching key words from a reading selection before students read it can contribute to their vocabulary development and to their reading comprehension. Because it is not possible to teach all words that might pose difficulty for students, words selected for instruction should reflect the following guidelines from *Put Reading First* (Armbruster et al., 2001):

- The selected words are the ones that are most important for understanding the selection or a concept or theme.
- The selected words are useful beyond the selection being read. They are words students are likely to see and use again and again.
- The selected words are difficult for students to read without help. Difficult words can include multiple-meaning words, which can be confusing if students do not understand that word meanings can depend on context, and idioms, which are especially challenging for English learners.

After students have been introduced to key words, students must see the words often and in various contexts. Some studies show that students need to encounter a word twelve times before they know it well enough to improve their comprehension (McKeown, Beck, Omanson, & Pople, 1985). Making sure students see a specific word often may require
teachers to focus students’ attention on the word each time it appears in a selection and to have students use the word in their own writing.

**Word-learning strategies** Knowing word-learning strategies is essential for students to become independent readers and word learners. Two such strategies are how to use information about word parts to determine the meanings of words and how to use context clues to determine the meaning of words in a selection.

**Using word parts** Students can determine the meanings of large numbers of unknown words by learning to recognize their relationships to known words (Graves et al., 1997). Teaching students to identify word parts, such as compound words, prefixes, and suffixes, is an effective way to help students use words they already know to add many new words to their vocabulary.

Breaking apart compound words is a way for students to learn how different words combine to form entirely new words with new meanings and is a good introduction to the idea that words are made of smaller units called *syllables*. These insights are especially important to less skillful readers (Bear, Templeton, Invernizzi, & Johnston 1996).

The value of teaching prefixes as a word-learning strategy is clear: Only twenty common prefixes account for 97 percent of the prefixed words in printed school English (White, Sowell, & Yanagihara, 1989). By learning four of the most common prefixes (*un-*, *re-*, *in-*, *dis-*), students can gain an insight into the meanings of almost two thirds of all words that have prefixes. In addition, prefixes are relatively easy to learn because they have clear and stable meanings (Armbruster et al., 2001). While suffixes are often more difficult for students to learn, the value of doing so is great. Suffix meanings are sometimes very abstract, and many suffixes have the same meaning. For example, *-ness*, *-ance*, *-ence*, *-ation*, *-ion*, *-ious*, and *-ity* are among many suffixes that mean “the state or quality of”—a definition that may be too vague to be helpful to many students. However, learning a few key suffixes with clear and stable meanings, such as *-less* (“without”), *-er* (“one who”), and *-ful* (“full of”) can help students add many words to their vocabulary.

**Using context clues** Context clues are hints about the meaning of an unknown word that are provided in the text that surrounds the word. These hints might be definitions, restatements, examples, or descriptions (Armbruster et al., 2001). Some researchers have argued that teaching students how to use context clues should be the main instructional method for vocabulary development (Anderson & Nagy, 1991). However, for students to use context clues effectively, they must have explicit instruction in what to look for and how to use the information they find.

**Kaleidoscope** includes the explicit teaching of vocabulary words before the reading of each selection. Instruction in the strategies of word structure, context, and apposition is also included. Weekly vocabulary activities and language arts vocabulary lessons provide additional opportunities to engage students with new words. **Kaleidoscope**’s instructional methods for vocabulary are as follows:
Oral language activities

Specific instruction of selection vocabulary

Word learning strategies
- Word structure
- Context clues
- Apposition

Vocabulary activities and language arts vocabulary lessons
- Antonyms
- Compounds words
- Context clues
- Homophones
- Idioms
- Multiple-meaning words
- Prefixes
- Root words
- Suffixes
- Synonyms
- Word families

Development of Text Comprehension Strategies

Comprehension is the ability of readers to derive meaning from text. This, of course, is the purpose of reading. Readers display comprehension when they shift their focus from recognizing individual words to deriving meaning from what they read.

Effective Comprehension Instruction

Reading comprehension is hindered greatly when students lack background knowledge and when they are unable to use comprehension strategies to extract information from a text (Texas Reading Initiative, 2000b). The goal of effective comprehension instruction is to help students develop the knowledge and the strategies they require to become skillful, enthusiastic, and independent readers.

Background knowledge consists of readers’ experiences and understandings of the world around them and of how written language works. Background knowledge plays a critical role in students’ comprehension. The extent of their knowledge and the ease with which they can activate and apply it directly affects how well readers understand what they read (for example, Anderson, & Pearson, 1984). Many students with reading difficulties lack sufficient background knowledge to understand reading selections (see Pressley, 1998). Effective instruction ensures that before reading a selection, students receive information about it that can help them better understand it.
Comprehension strategies are conscious plans readers make. They decide which strategies to use and when it is appropriate to use them (Armbuster et al., 2001). Researchers have identified and examined an array of comprehension strategies. However, the evidence suggests that some strategies are more effective than others (National Reading Panel, 2000). The most effective strategies are summarized in Put Reading First (Armbuster et al., 2001) and include monitoring comprehension, using graphic and semantic organizers, answering and asking questions, recognizing story structure, and summarizing.

**Monitoring comprehension** Monitoring comprehension involves the ability of readers to know when they understand what they read, when they do not understand, and when to use appropriate “fix-up” strategies to improve their understanding. Research shows that instruction, even in the early grades, can help students become better at monitoring their comprehension (Paris, Wasik, & Turner, 1991).

**Using graphic and semantic organizers** Graphic organizers are diagrams or other visual devices used to organize concepts and the interrelationships among those concepts in a text. Semantic organizers are a type of graphic organizer in which lines connect a central concept to a variety of related ideas and events. Such organizers are important to comprehension because they help readers focus on concepts and on how they are related to other concepts.

**Answering and generating questions** Answering teachers’ questions appears to be effective in building comprehension because doing so

- gives students a purpose for reading,
- focuses students’ attention on what they are to learn from a selection,
- helps students think actively as they read,
- encourages students to monitor their comprehension,
- helps students review content and relate what they have learned to what they already know.

Comprehension increases when students generate questions to ask themselves and others as they read. Generating questions allows readers to integrate background knowledge with text information, identify main ideas and other text organizational features, and focus on the most important information in a text (Wood, Woloshyn, & Willoughby, 1995).

**Recognizing story structure** Story structure refers to the way the content and events of a story are organized into a plot. Recognizing story structure gives students a greater appreciation, understanding, and memory of stories. In story structure instruction, students learn to identify features such as setting, plot, and outcomes, and how features work together to make a plot. Research shows that explicit instruction in the content and organization of stories improves both comprehension and memory of stories (Baumann, J. F., & Bergeron, 1993; Griffey, et al., 1988).

**Summarizing** Summarizing requires students to determine what is important in a text, to condense this information, and to put it into their own words. Research indicates that
summarizing is a good method for students to identify main ideas, integrate ideas, and generalize from text information. Furthermore, summarization improves students’ memory of what is read, both in terms of free recall and answering questions (Armbruster, Anderson, & Ostertag, 1987).

Research shows that explicit instruction is especially effective for comprehension strategy instruction. In explicit instruction, teachers tell students why and when they should use a strategy or strategies, which strategies to use, and how to apply them. Explicit instruction usually includes direct explanation, teacher modeling (“thinking aloud”), guided practice, and application (Armbruster et al., 2001).

Every Kaleidoscope lesson explicitly teaches specific comprehension strategies and skills in conjunction with the reading selection that forms the core of each lesson. Kaleidoscope’s instructional methods for text comprehension are as follows:

**Strategies in systematic instruction for learning**
- Activating prior knowledge
- Browsing the text
- Determining what to expect from the text

**Graphic and semantic organizers**

**Comprehension strategies**
- Monitoring and clarifying
- Monitoring and adjusting reading speed
- Asking questions
- Summarizing
- Predicting
- Making connections
- Visualizing

**Comprehension skills**
- Sequencing
- Main idea and details
- Compare and contrast
- Cause and effect
- Drawing conclusions
- Making inferences
- Author’s point of view
- Fact and opinion
- Reality and fantasy
- Author’s purpose
Conclusion

Research reveals a great deal about the kind of instruction that can help students develop as skillful readers. Effective instruction ensures that students receive a thorough preparation for reading through the explicit and systematic teaching of phonemic awareness and phonics. Effective instruction provides extensive opportunities for students to build vocabulary throughout their school years, and it helps students increase reading fluency through repeated practice. Effective instruction also ensures that students achieve the ultimate goal of reading—comprehension—by introducing them to key comprehension strategies they can use to gain access to the vast array of knowledge available to them through reading.

Building the instruction in *Kaleidoscope* on a solid research foundation assures educators that by using the program, many struggling students will be set securely on the path to becoming lifelong readers who *can* read and who *want* to read.
References


