EFFECTIVE INSTRUCTION FOR ADOLESCENT STRUGGLING READERS

A Practice Brief

CENTER ON INSTRUCTION

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CENTER ON INSTRUCTION

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INTRODUCTION

A Call for Effective Adolescent Literacy Practices

One in four students in grades four through twelve was a struggling reader in 2005, and fewer than one-third of public school 8th graders read at or above grade level (Perie, Grigg, & Donahue, 2005). Some of these students lack the skills necessary to read new or unusual words or to figure out their meanings. Most fail to understand much of what they read. Older students who are tackling complex informational text face serious and growing challenges. Even in our modern, multimedia world, most content-area knowledge (science, social studies, history) after third grade is presented through print-based resources (Biancarosa & Snow, 2004; Perfetti, Landi, & Oakhill, 2005). The ultimate goal of reading is understanding and learning from print; thus, reading programs must support students in reaching this goal. In addition, middle and high schools are challenged to create classroom environments that support student interest and motivation to engage in school-based reading tasks.

In the last decade, much attention has been given to preventing early reading difficulties (e.g., National Reading Panel [NRP], 2000), while the reading difficulties experienced by older students have been less of a priority (Biancarosa & Snow, 2004). This is starting to change as adolescent reading instruction becomes an increasingly "hot topic" in education (see Cassidy & Cassidy, 2007). Already, a body of research-based practices is emerging and program developers are focusing more on the instructional needs of older students. Research-based materials and professional development opportunities are increasingly available to teachers and other instructional personnel working with struggling readers in secondary schools and classrooms. Although preliminary and not widely disseminated, these efforts represent a promising start.

The purpose of this practice brief is to provide schools, districts, and states with background knowledge about best practices for older students who struggle to read. It focuses on the reading skills that adolescents need to more fully access content-area curricula and, in turn, secure a productive future. We define adolescent reading as occurring between fourth and 12th grades and as separate from early reading in kindergarten through third grades.

Several documents inform the content of this brief, among them *Reading Interventions for Adolescent Struggling Readers: A Meta-Analysis with Implications for Practice* (Scammanca et al., 2007) and *Academic Literacy Instruction for Adolescents: A Guidance Document from the Center on Instruction* (Torgesen et al., 2007).

Our intention is to provide a comprehensive overview of the current knowledge on best practices for teaching older students with reading difficulties. For details on the research that supports each recommended practice, please see *Interventions for Adolescent Struggling Readers: A Meta-Analysis with Implications for Practice*, available online at http://www.centeroninstruction.org/files/COI%20Struggling%20Readers.pdf.

A Brief Background in Essential Components of Reading

According to the National Reading Panel report (NRP, 2000) there are five essential areas of early reading and each contributes to the reading process. They are:

- Phonemic awareness – an auditory process that involves hearing sounds that make up words. Skills in this area include rhyming, blending sounds together to make words, and segmenting words into separate sounds.
- Phonics – recognizing that sounds link to letters and that those letters are combined to make words. To read and spell words, readers use their knowledge of the alphabetic principle to identify patterns of letters that represent specific sounds.
- Fluency – reading effortlessly and automatically, recognizing individual words "by sight." Fluent reading sounds natural, as if the reader is speaking casually.
- Vocabulary – understanding and using words in listening, speaking, reading, and writing.
- Comprehension – the purpose of reading. Involves complex cognitive processes that enable the reader to gain meaning from text and repair misunderstandings when they occur.

The Focus of Reading Instruction for Adolescent Readers

Instructional recommendations for older readers differ only slightly from those for younger readers. They can be organized into five general areas:

- word study;
- fluency;
- vocabulary;
- comprehension; and
- motivation.

Absent from this list are phonemic awareness and phonics. For most older readers, instruction in advanced word study, or decoding multisyllabic words, is a better use of time than instruction in the more foundational reading skills (such as decoding single-syllable words) which many older readers have accomplished. Of course, we recognize that older readers possess a range of knowledge and skills, and there may be older readers who would profit from instruction in the more foundational skills.

Because of the increased challenge of motivating older students and the positive reading outcomes associated with attending to student motivation to read, a section on motivation is also included.

Each section of this document describes the reading component, characteristics of successful and struggling readers, and features of effective instruction.

For Further Study

We are limited in the information we can include in this overview. In most cases, schools will need to provide further professional development opportunities to prepare teachers adequately to implement the practices recommended. The Spring 2008 professional development module created in conjunction with the meta-analysis and this practice brief is another resource.

Furthermore, this report offers only limited information on assessment, an essential component of effective literacy instruction. One place to look for more information on assessment is the National Center on Student Progress Monitoring, www.studentprogress.org.

Finally, because this document presents only an overview of effective reading practices for adolescent readers, it does not include technical information about the studies from which the information is drawn. Refer to the earlier-mentioned *Reading Interventions for Adolescent Struggling Readers: A Meta-Analysis with Implications for Practice* (Scammacca et al., 2007) and *Academic Literacy Instruction for Adolescents: A Guidance Document from the Center on Instruction* (Torgesen et al., 2007) for details of specific research studies in reading.

WORD STUDY

Reading words involves phonological processing (knowing the speech sounds in words) and an understanding of letter-sound correspondence in words (knowing that the sequence of speech patterns maps to the sequence of letter patterns in print; see Ehri & McCormick, 1998). Instructional practices that focus on reading at the word level are called word study. Since word study skills help students read words more effectively and efficiently, these skills uniquely contribute to reading comprehension (Nagy, Berninger, & Abbott, 2006; Scammacca et al., 2007). For example, when students use structural analysis to break words into meaningful parts they are likely to understand the word they are reading, and that understanding supports their text comprehension.

The Challenge

Many adolescent readers struggle to read at the word level but lack opportunities to develop needed skills in this area.

A Suggestion

Older students who are deficient in decoding and word analysis skills require instruction in word study. Teachers must be able to allocate time and resources to provide appropriate interventions to these students.

For younger at-risk and struggling readers, recommended instructional practice includes explicit instruction and practice in word study. Does this recommendation hold for older struggling readers? Louisa Moats (2001) suggests that the choice of reading interventions depends on a student's instructional need and what is likely to work best, not on chronological age or grade level. Research demonstrates that older students who struggle with reading at the word level benefit from instruction in word study (Edmonds et al., in press; Scammacca et al., 2007). A student who has difficulty decoding words should receive instruction in word study whether he is in first grade, fourth grade, or 12th grade. The instructional materials used may vary depending on age and grade level, but the learning objectives remain the same. Students who decode accurately but slowly may benefit more from interventions that focus on fluency, comprehension, and vocabulary.

Instruction in advanced word study teaches students to be flexible decoders who can access word analysis and word recognition strategies and recognize irregular words that do not fit predictable semantic or orthographic patterns. The proficient use of decoding strategies is a requisite skill for fluent reading.

What Do Successful Readers Do?

Successful readers know that letters and letter patterns are associated with sounds and that these sounds blend to make the words that we read. They are able to use this knowledge to decode unknown or difficult words while they are reading. As they read, readers proficient in word study also employ structural analysis strategies to break words into smaller meaningful parts that help them decode and understand words. The table outlines characteristics common to successful and struggling readers in the area of word study.

Successful Readers	Struggling Readers
• Read multisyllabic words and use strategies to figure out unknown words. • Make connections between letter patterns and sounds and use this understanding to read words. • Break unknown words into syllables during reading. • Use word analysis strategies to break difficult or long words into meaningful parts such as inflectional endings, prefixes, suffixes, and roots.	• May read single-syllable words effortlessly but have difficulty decoding longer multisyllabic words. • May lack knowledge of the ways in which sounds map to print. • Have difficulty breaking words into syllables. • Often do not use word analysis strategies to break words into syllables.

Adapted from Bhattacharya & Ehri, 2004; Nagy, Berninger, & Abbott, 2006.

Instructional Practices Associated with Improved Word Reading

While many struggling readers at the secondary level are proficient at reading single-syllable words *(stint, core, plan)* they may lack strategies to decode the multisyllabic words that are common in higher-level reading materials (Archer, Gleason, & Vachon, 2003). Often termed *advanced word study,* interventions in this area generally include instruction in word recognition and word analysis (Curtis, 2004).

Teaching Word Study

Word study practices cue students to the orthography of words, or the letter patterns and structural features associated with predictable speech sounds. Students learn how to identify and break words into syllable types (e.g., r-controlled vowels [*-ar, ire*], vowel-consonant-e) and to read by blending the parts together. For example in the word *mumble*, students learn to divide the word into the syllables *mum-* (closed syllable indicates a short vowel sound) and *-ble* (final stable syllable with consonant-le).

Effective word study instruction also provides information about and strategies for analyzing words by the meaning and structure of their parts. Students are often taught the meanings of prefixes, suffixes, inflectional endings, roots, and important vocabulary. They learn to break difficult words apart into smaller known units. For example, in the word *transplanted*, students break the word into three segments: trans-plant-ed. They can associate the base word *plant*, with the prefix *trans* (across) and the suffix *ed* (happened in the past). Using word analysis strategies, students read unknown words part by part and use known meanings, or semantic features, of the smaller chunks to assist them in decoding the longer word. Recommended instructional practices:

- Teach students to identify and break words into syllable types.
- Teach students when and how to read multisyllabic words by blending the parts together.
- Teach students to recognize irregular words that do not follow predictable patterns.
- Teach students the meanings of common prefixes, suffixes, inflectional endings, and roots. Instruction should include ways in which words relate to each other (e.g., trans: *transfer, translate, transform, transition)*.
- Teach students how to break words into word parts and to combine word parts to create words based on their roots, bases, or other features.
- Teach students how and when to use structural analysis to decode unknown words.

FLUENCY

Good readers are fluent readers. They decode words automatically and continuously group and regroup words in ways that promote understanding. Fluency is important: both accurate word reading and comprehension are related to fluency (Shinn & Good, 1992). Because fluent readers identify words "by sight," they can devote time and effort that might have gone to decoding words to understanding what they are reading. It is necessary to read frequently to expand the sight word vocabulary readers need to read fluently, and this is one area where struggling readers fall behind. Fluency does not "cause" comprehension; however, it is a necessary component of successful reading, and fluency instruction may be useful for struggling adolescents, who often are not fluent readers (Rasinski, Padak, McKeon, Wilcong, Friedauer, & Heim, 2005).

The Challenge

Many adolescent struggling readers do not read fluently, even when they decode words accurately. While the ability to read automatically and accurately is instrumental to understanding text, most secondary level reading programs do not include instruction in fluency.

A Suggestion

In addition to instruction in other essential areas of reading, students who read slowly and with difficulty should receive **repeated opportunities to practice fluent reading** *orally with feedback from a more proficient reader—either a teacher or a peer.*

Most of the research findings about the benefits of fluency instruction concern readers whose reading fluency is at or below third grade reading expectations. Fluency instruction for older struggling readers may also be appropriate (Wexler, Vaughn, Edmonds and Reutebuch, in press). Consider that:

- Students with reading difficulties often struggle to read fluently;
- Fluency instruction is not included in most reading programs; and
- The ability to read accurately and automatically is associated with reading comprehension and learning from text, which is especially important for adolescent readers who are faced with learning a great deal of challenging content-area material through text reading.

What Do Successful Readers Do?

The table below presents typical features of successful and struggling readers in the area of reading fluency.

Successful readers	Struggling readers
• Read 100-160 words per minute (at the middle school level), depending on the nature and difficulty of the text. • Decode words accurately and automatically. • Group words into meaningful chunks and phrases. • Read with expression. • Combine multiple tasks while reading (e.g., decoding, phrasing, understanding, and interpreting).	• Read slowly and laboriously. • May continue to struggle with decoding or may decode correctly but slowly. • May not pause at punctuation or recognize phrases. • Often lack voice or articulation of emotion while reading. • May lack proficiency in individual skills that result in dysfluent reading and limit comprehension.

Instructional Practices Associated with Improved Fluency

Fluency interventions generally fall into one of two categories: repeated oral reading (reading and listening to the same passage several times) and non-repetitive wide reading (increased reading opportunities). Interventions that involve repeated reading of the same passage(s) often yield improved fluency on the practiced passage (Samuels, 1979). However, these gains only generalize to new, previously unpracticed passages to the extent that both share a large number of the same words (Rashotte & Torgesen, 1985). Repeated reading may be no more effective than a similar amount of non-repetitive wide reading for increasing older struggling students' reading speed, word recognition, and comprehension on *unpracticed and dissimilar passages* (Homan, Klesius, & Hite, 1993).

Further research is needed on the role of fluency instruction generally for older students and the relative effects of various fluency practices, including repeated reading and non-repetitive wide reading. In the interim, several instructional recommendations seem reasonable:

- Repeated reading of the same passage allows students to improve and "automate" their sight word vocabulary; as they increase the number of

words they can read "on sight," they generally become increasingly fluent. For this reason, repeated practice reading the same text, with opportunities for modeling and feedback from a more proficient reader, may help older struggling readers. It is also likely beneficial to use focused word-learning instruction that is *coordinated with the passages used for fluency practice.* Repeated reading of passages that have embedded target words in otherwise "readable" text may be more useful than practicing overly difficult passages or passages with unfamiliar vocabulary to which students have not been repeatedly and frequently exposed.

- Non-repetitive wide reading may be a reasonable instructional option when the text has a preponderance of "known" words or when a teacher can provide instructional support. Wide reading has the benefit of exposing students to new and different content, vocabulary, and text types. It may, when teacher-supervised, offer instructional opportunities not available within a repeated reading framework.

Teaching Fluency and Providing Opportunities for Practice

Whether repeated oral reading or non-repetitive wide reading is the instruction of choice, certain practices should be standard in either:

- Track students' gains in fluency and provide frequent feedback to ensure that students are practicing reading as accurately as possible. Students can monitor their own progress by maintaining a graph that shows changes in performance over time.
- Support fluency practice by having a teacher, tutor, or capable peer provide appropriate models of fluent reading and corrective feedback.
- Involve students in monitoring their own progress toward reading fluency goals.

Repeated oral reading can benefit older readers when it is combined with word-learning instruction, frequent and varied exposure to newly learned words, and supervised practice. Recommended instructional practices:

- Either select passages that include "targeted" vocabulary that has been previously taught and practiced or choose text at the student's independent reading level.

Non-repetitive wide reading offers exposure to different text structures, to new and challenging vocabulary, and, if content-area texts are used, to important grade-level subject matter. Non-repetitive wide reading is a reasonable option when a student can comfortably identify most of the words. The recommendations below require carefully planned instructional time when students read orally, with monitoring and feedback provided by a teacher or trained peer.

- Select passages—that students are interested in reading—at their independent or instructional reading level.
- Practice fluency with successive passages (as in a novel or text book) or a series of passages (short readings of similar difficulty). Do not have students re-read the same passage repeatedly.
- As students improve, increase passage difficulty by selecting texts with new and challenging vocabulary and content.

VOCABULARY

Knowing the meaning of words relates strongly to reading comprehension and overall academic success (e.g., Baumann, Kame'enui, & Ash, 2003; NRP, 2000). When students understand the meanings of the words they encounter in text and have strategies to figure out unknown words, they are more likely to understand the content of what they are reading. However, vocabulary knowledge is more than simply understanding the meanings of words as we read. Vocabulary knowledge involves *word consciousness,* the awareness of the richness and varied uses of language. Word-conscious students are interested in words and enjoy using and hearing others use words well. They know the importance of learning new words and of mastering strategies associated with word learning. They understand that words can have multiple meanings that often vary, sometimes subtly, depending on the circumstances of their use. Word consciousness fosters comprehension.

What is involved in knowing and using a word? Given the word *support,* you can probably come up with a definition, generate a picture in your mind, identify synonyms and antonyms, and you may even be familiar with various uses and forms of *support* as a verb and a noun. But what about the word *trammel?* Perhaps you know already or can figure out its meaning in the following sentence, "The fish were *trammeled* in the net." To *trammel* means to trap, but it can also mean to hinder progress. As a noun, it can mean a *fishing net* or a *shackle,* among other things. Its definition is multifaceted: to know the word well would require more than looking up

The Challenge

How can teachers possibly teach the number of words needed to make up for the huge deficits in some students' word knowledge?

A Suggestion

Teachers who understand how word learning occurs can select relevant words to teach and then implement evidence-based instructional practices that support vocabulary development. They can also create enriching learning experiences that promote incidental word learning. Vocabulary instruction for students with learning disabilities (LD) need not be limited to one strategy, but should combine activities (e.g., explicit instruction and word consciousness activities) to enhance word learning (Bryant, Goodwin, Bryant, & Higgins, 2003). As with any instruction, the learning task should reflect teaching goals (Jitendra, Edwards, Sacks, & Jacobson, 2004). For example, explicit instruction is most appropriate for introducing new vocabulary, while deep understanding and generalization are supported when students actively engage in vocabulary activities and see and use words in a variety of contexts.

trammel in the dictionary and using it in a sentence for homework. In 1965, Dale placed word learning along a continuum that is still recognized today:

1. I've never heard of this word.
2. I've heard the word, but I'm not really sure what it means.
3. I can recognize the word in context.
4. I know the word well, including its various forms, definitions, and uses.

Learning *trammel* and other words occurs over time through a host of activities that include explicit instruction, multiple exposures, and experiences with words and the world.

Is it necessary to have a deep understanding of the word *trammel?* How much time should teachers spend teaching words such as these or others with a higher utility? Adolescent learners need to understand the words they encounter in increasingly difficult text and need strategies to figure out unknown words. By first analyzing the words students need to know and then engaging in a variety of activities that support word learning, teachers can enhance their students' vocabulary knowledge and word consciousness.

What Do Successful Readers Do?

It is not surprising that successful readers know more words than struggling readers. The average 12th grader preparing for a competitive college knows about 80,000 words (Hirsch, 2003). How do some students learn so many new words while others do not? Good readers read more and become better readers. They are exposed to and learn more words. On the other hand, poor readers read less and are exposed to and learn fewer words. As a result, they do not become strategic readers. Stanovich (1986) termed this phenomenon the Matthew Effect—the rich get richer and the poor get poorer.

Further, because words are learned not only through reading, high quality conversations and rich experiences also result in incidental word learning throughout the day. Many struggling readers lack both the quality of experiences with new words and the quantity of exposures needed to gain the vocabulary knowledge that would be useful to them as they progress through school (Hirsch, 2003).

Students who struggle with reading often lack the word consciousness that would promote positive reading outcomes. The table below outlines several

relevant characteristics of successful and struggling readers in the area of vocabulary knowledge.

Successful readers	Struggling readers
• Are exposed to a breadth of vocabulary words in conversations and print at home and at school from a very early age. • Have word consciousness. • Understand most words when they are reading (at least 90%) and can make sense of unknown words to build their vocabulary knowledge. • Learn words incrementally, through multiple exposures to new words. • Have content-specific prior knowledge that helps them understand how words are used in a particular context.	• Have limited exposure to new words. • May not enjoy reading, and therefore do not select reading as an independent activity. • May lack word consciousness, including an awareness of the complex and varied nature of words in written and oral language. • Are unable to comprehend consistently what they read or to learn new words from reading. • Lack the variety of experiences and exposures necessary to gain deep understanding of new words. • Often have limited content-specific prior knowledge that is insufficient to support word learning.

Instructional Practices Associated with Improved Vocabulary Knowledge

Effective vocabulary instruction engages students in developing word consciousness. Word consciousness requires a deep knowledge of specific words. It also requires skill in "figuring out" new or unfamiliar words based on knowledge of similar words or word classes (Graves, 2006). Vocabulary instruction can be divided into three areas: (1) Additive vocabulary instruction focuses on teaching specific words; (2) Generative vocabulary instruction teaches word-learning strategies, which allow for independent word learning; and (3) Academic vocabulary instruction addresses word learning and word-learning strategies in specific academic content areas. These strategies are effective for teaching vocabulary to all students. They may be particularly effective for supporting students with learning disabilities (LD) (Bryant, Goodwin, Bryant, & Higgins, 2003; Jitendra, Edwards, Sacks, & Jacobson, 2004).

Additive Vocabulary Instruction

Additive vocabulary instruction entails explicit instruction and guided practice of specific words. Teach words that are important and useful for students to know. Recommended instructional practices:

- Break words into three tiers (Beck, McKeown, and Kucan 2002):

  Tier 1 words, which students are likely to know (e.g., *sad, funny).*

  Tier 2 words, which appear frequently in many contexts (e.g., *regardless, compromise).* Beck and colleagues suggest that teachers focus vocabulary instruction on Tier 2 words.

  Tier 3 words, which appear rarely in text or are content specific (e.g., *irascible, biogenetics).* Tier 3 vocabulary words are often included in secondary content-area instruction as words that are critical to learning specific content. Consider balancing instruction of important content-specific words (Tier 3) with work on higher frequency, universally useful words (Tier 2).

- Accommodate the pace at which vocabulary knowledge grows. Stahl (2003, p. 19) noted, "Vocabulary knowledge seems to grow gradually, moving from the first meaningful exposure to a word to a full and flexible knowledge." It takes about 12 rich and varied exposures to a word to develop deep understanding (Beck, McKeown, Omanson, & Pople, 1985). Provide a variety of experiences for each vocabulary word. For example, to teach the word *vegetation,* teachers can first provide a simple definition, read one or more texts that contain the word vegetation, lead a discussion about local vegetation, provide examples and non-examples, create a semantic map of various forms of the root *veg* (e.g., *vegetate, vegetable, vegan),* and use computer resources to extend understanding.

- Teach multiple meanings of words to foster word consciousness. Provide many exposures to target words, including experiences with the variety of ways words are used (i.e., parts of speech) and when they are used (i.e., different contexts), so students can learn the multiple meanings and uses of words. For example, the meaning of *account* varies depending on its context. Some variations depend on whether the word *account* is a noun or a verb.

- Actively engage students in vocabulary-learning tasks such as creating definitions and non-definitions, drawing pictures, and playing charades or other games that let them practice defining, using, and recognizing new vocabulary words.
- Ensure that students understand the task they are expected to accomplish during vocabulary instruction. This may require restructuring tasks to accommodate a student's weaknesses and build on her strengths, such as adjusting the size or make-up of instructional groups or modifying instructional materials. For example, teachers can clarify the task of writing vocabulary definitions by modeling what a good definition includes, defining difficult words, or letting students complete vocabulary tasks in pairs or small groups. Restructuring tasks may be particularly effective for struggling readers.

Generative Vocabulary Instruction

Generative vocabulary instruction capitalizes on the relatedness of words and classes of words. Students learn to identify the meaning of new or unfamiliar words by using their existing knowledge of specific words and word parts. Instruction in selected instances of particular words or word parts (roots, prefixes, suffixes, etc.), combined with systematic practice in using morphemic and contextual cues can equip students with powerful tools for identifying similar or related words or classes of words.

- Promote opportunities for students to engage in wide reading of texts at a variety of levels (including many at students' independent reading level, at which they can read about 9 out of every 10 words) and for a variety of purposes. The more students read, the greater their opportunities for applying word-learning strategies and learning new vocabulary.
- Provide opportunities for students to use target vocabulary words verbally in small- and large-group discussions about what they are reading and learning.
- Connect new words to oral language or other reading materials by using the new words in conversation and explicitly relating them to other uses and occurrences.

- Develop word consciousness through such activities such as talking about how authors use words, playing word games, and exploring playful uses of words such as idioms, palindromes, and oxymorons.
- Use key word strategies that provide phonetic or visual links to target words. These strategies use a known word to cue the learners to the target word; for example, associating the key word *fear* with the vocabulary word *ferocious* because a person would fear a ferocious animal.
- Show students how to break words into parts and to use context clues, root words, prefixes, suffixes, and word families to identify their meaning.

Academic Vocabulary Instruction

In academic vocabulary instruction, teachers attend to the meanings of words in a specific context, usually the curriculum in content areas such as life or earth sciences, social studies, or mathematics. Academic vocabulary instruction uses both additive and generative instructional practices.

For centuries, philosophers have debated the differences, if any, in understanding the meanings of words and understanding the nature of the concept those words represent. In this brief, we assume that understanding the vocabulary of a given domain may not be entirely synonymous with a conceptual understanding, but knowing the meanings of key vocabulary is an extremely important part of mastering new or difficult concepts and, as such, offers important instructional opportunities. Recommended instructional practices:

- Use content-area materials to identify important vocabulary. These may be Tier 3 words, but given their importance to understanding new or difficult concepts, they will have high utility. For example, the word *mitosis* may not, in general, get much daily use, but in the course of learning about or discussing cell division and reproduction, it is a critical vocabulary word. Its meaning, of course, is multilayered. A practicing biologist will have a vastly more sophisticated understanding than a 6th grade life science student. For the biologist, the mention of *mitosis* will prompt an array of interrelated words and concepts, while the 6th grade student may only know that mitosis has something to do with cells dividing and that it differs from *meiosis* in some important way.

- Differences in depth of understanding are related to the number of times and the variety of contexts in which a word is encountered and used. For the sixth grade science student, it may be sufficient to understand mitosis as

  > "the process in cell division by which the nucleus divides, typically consisting of four stages, prophase, metaphase, anaphase, and telophase, and normally resulting in two new nuclei, each of which contains a complete copy of the parental chromosomes" (Wikipedia, n.d.).

  He or she may also know that *karyokinesis* is sometimes used to describe the same process. The detail at which a student understands each phase of mitosis will vary, depending perhaps on local curriculum standards in science, the student's aptitude and motivation, or the instructional goals.
- Use assessment procedures to identify target words students know and words students need to learn. For example, pre-assess vocabulary knowledge before teaching a specific content-area unit, use curriculum-based progress monitoring to track vocabulary development over time, and assess the level of understanding of words (e.g., Can the student define the word? Use it in a sentence? Provide a synonym or antonym?).
- Provide explicit instruction of the vocabulary needed to understand a specific text or content area by offering simple definitions prior to reading, generating examples and non-examples, or creating semantic maps that contain word families or list multiple uses of a target word. Explicit instruction of key words increases both vocabulary and reading comprehension and is especially effective for students with disabilities (Bryant et al., 2003, Jitendra et al., 2004).
- Use computer technology as one component of vocabulary development. For example, game-like formats engage students, online dictionaries and reference materials may help students extend their knowledge of a word, and hyperlinks (clickable words contained in online passages) allow students to access additional information quickly or to see words used in multiple contexts (Wood, 2001).

COMPREHENSION

Reading has many purposes. We read to learn from information texts such as non-fiction books or content-area texts; we read for enjoyment when we immerse ourselves in novels, magazines, or even comic books; and we read to get information when we complete a job application or read the instructions to obtain a driver's license.

Learning from textbooks or written directions requires the ability to understand and remember what has been read. As discussed, word study, fluency, and vocabulary are all essential to facilitating reading comprehension. Because the need to gain meaning from text increases dramatically as students progress through school, knowing how to apply comprehension strategies is necessary for adolescent readers (Biancarosa & Snow, 2004; Perfetti, Landi, & Oakhill, 2005).

What Do Successful Readers Do?

Successful readers monitor their comprehension while they read. Self-monitoring and self-questioning enable readers to make connections to prior learning, signals them when comprehension breaks down, and guides their use of fix-up strategies to repair understanding. At one time or another, even successful readers pass over paragraphs or pages of text before realizing they have no idea what they just read. On realizing this, a good reader might decide to stop and attempt to summarize or to go back and re-read. Most struggling adolescent readers have difficulty with reading comprehension because they do not use these skills. They do not monitor their comprehension, primarily

The Challenge

Most teachers expect students to use comprehension strategies during reading but do not explicitly teach the skills to use these strategies successfully (e.g., Pressley, 2006). For example, after reading, many teachers ask students to state the main idea of the passage but fail to teach students how to perform this important task.

A Suggestion

Reading comprehension may be the most important component of reading instruction at the secondary level. Students who struggle to understand and remember what they read require explicit instruction in reading comprehension strategies. Even when a student is working on basic reading skills, the goal is comprehension. Most students demonstrate improved reading outcomes when they are taught reading comprehension strategies (Edmonds et al., in press; RAND Reading Study Group, 2002). Thus most comprehension instructional practices can be implemented classwide in any setting where reading for meaning is emphasized, including the content areas. Other suggestions for building reading skills and modifying reading levels for struggling readers appear in the word study, fluency, and vocabulary sections of this brief.

because they lack the tools to identify and then repair misunderstandings when they occur. When we teach students to use comprehension strategies before, during, and after reading, they can become better readers (Edmonds et al., in press).

Successful Readers	Struggling Readers
• Monitor reading for understanding. Consider the writing from the author's view, interacting with text during and after reading. • Link content with their prior knowledge. • Use a variety of effective reading strategies before, during, and after reading. • Set a purpose for reading and adjust their rate and strategy use depending on the text and content.	• Fail to use metacognitive strategies as they read. • May not be aware when understanding breaks down. • Do not question or interact with the text during or after reading. • May lack subject-specific prior knowledge. • Do not readily make connections between what they are learning and what they already know. • Have limited knowledge and use of strategies for gaining information from text. • May fail to read with purpose or goals. • Often do not enjoy reading and lack understanding of the utility of reading.

Adapted from Denton, Bryan, Wexler, Vaughn, & Reed, 2007; Pressley, 2006.

Instructional Practices Associated with Improved Reading Comprehension

A review of reading comprehension studies with students with LD (Mastropieri & Scruggs, 1997) supports the use of the strategies recommended by the National Reading Panel, outlined below. Strategies are most beneficial when students learn and practice them in meaningful contexts. For example, use a relevant text or textbook in the content area targeted for instruction to teach students how to derive the main idea.

Activate Prior Knowledge

Prior knowledge is the existing information students have about a topic, skill, or idea. Activating this knowledge helps students connect what they already know with what they are learning. Struggling readers may not automatically access prior knowledge that supports the new information they will learn. Or they may access incorrect or unrelated information that can even interfere with learning. Therefore, activate prior knowledge by previewing text before reading:

- Use specific strategies to activate prior knowledge, such as previewing headings or key concepts, or making a prediction and confirmation chart.
- Prepare and guide previewing activities to support and focus the connections students make.
- Avoid soliciting guesses from students without guidance or feedback.
- Keep it short. Previewing should not take longer than five minutes, especially if a teacher has limited time with students.
- Revisit after reading to assist in reviewing, confirming or refuting predictions, summarizing, and making connections.

Use Graphic Organizers

Graphic organizers are visual representations that help students identify, organize, and remember important ideas from what they read. Examples include story maps, framed outlines, concept maps, and Venn diagrams. Graphic organizers can be effective tools to support comprehension for students with LD (Kim, Vaughn, Wanzek, & Wei, 2004). Recommended instructional practices:

- Use graphic organizers before reading to introduce important information, to solicit prior knowledge from students, and to make predictions.
- Use graphic organizers during reading to represent and discuss connections, to confirm or refute predictions, and to record important information.
- Use graphic organizers after reading to write summaries, to review information, and to make connections.

- Adapt graphic organizers to text type. For example, while a compare-contrast format may work for certain social studies readings, a story plot diagram is better suited to a narrative text structure.

Teach Comprehension Monitoring Strategies

Comprehension monitoring strategies enable students to keep track of their understanding as they read and to implement "fix-up" strategies when understanding breaks down. Recommended instructional practices:

- Teach students strategies that enable them to identify when understanding breaks down, such as noting confusing or difficult words and concepts, creating images, stopping after each paragraph to summarize, and generating questions.
- Teach specific "fix-up" strategies to repair misunderstanding, such as re-reading, re-stating, and using context and decoding skills to figure out unknown words or ideas.
- Promote comprehension monitoring by:
  - Asking questions before and during reading to guide and focus how students read;
  - Reminding students to confirm, disconfirm, or extend predictions made prior to reading; and
  - Encouraging students to actively engage in reading when they use reading comprehension strategies to grapple with the meaning of text.
- Continue to teach and provide time to practice using comprehension strategies until students are proficient (Pressley, 2000).

Teach Summarization Skills

Reading for meaning demands the ability to consolidate large amounts of information (several paragraphs or passages) into only the most important elements. By providing organizational steps, practice, and feedback, students are taught to focus their reading and re-reading to create summaries that contain the main ideas of what they have read. Recommended instructional practices:

- Teach students to summarize small amounts of text such as a short paragraph before summarizing longer sections.
- Provide modeling, feedback, and many opportunities to practice summarization rules (NRP, 2000) such as:
  - Selecting a topic sentence or inventing a topic sentence if one is not explicitly stated;
  - Using one word to replace a list of related items;
  - Deleting trivial and redundant information; and
  - Re-reading to make sure your summary makes sense.
- Teach students how to use graphic organizers to write summaries.
- Provide examples and non-examples of summaries to help students recognize and produce summaries that contain only key ideas.

Teach Students to Ask and Answer Questions

Students can be taught strategies to generate questions about what they read and to answer teacher-generated questions effectively. Teaching students to ask questions before, during, and after reading supports engagement and understanding. Although teacher questions are most commonly used as an assessment strategy, they can also be used as an effective comprehension practice when they teach students how and where to find answers. Recommended instructional practices:

- Teach students to ask and answer specific types of questions, such as questions whose answers are explicitly stated in the text and those that require students to make inferences based on what they have read.
- Use question generation on its own or as part of multi-strategy instruction.
- Provide students with strategies to evaluate teacher-generated questions. For example, it is important to know if the answer will be found in the text or if it should be inferred.

Multi-Component Comprehension Strategy Instruction

Multi-component strategies combine several comprehension strategies into an organizational system, or plan, for reading. For example, over time teachers provide instruction in previewing, mental imagery, main idea, questioning, and summarizing. Recommended instructional practices:

- Give students adequate instruction to become proficient in each strategy before combining strategies in a multi-component approach.
- Engage students actively in using multiple strategies through cooperative learning, group discussions, and other interactive modes.
- Support students in generalizing strategy use across contexts. The goal is for students to apply strategies independently and automatically whenever they are reading; they need support and practice to generalize skills.
- Teach students to self-regulate their use of strategies. They should know which strategy to use, when to use it, and why. To benefit from reading strategies, readers must be flexible so that they can shift their approach if one strategy or technique is not working.

MOTIVATION

Consider the reader who sits down to lunch with a new novel that she has chosen. She becomes so engaged in reading that she loses track of time. After turning the last page, she notices that the sun is setting and her lunch sits untouched beside her. Her reading has motivated her because she is interested in the subject matter and curious about what will happen to the characters as she reads.

Consider another reader who has just brought home a new computer. He is eager to set it up, but the directions are complex, directing him to follow a series of steps to install the programs. Opening the directions, he begins to read carefully and with purpose. He is highly motivated to read well so that he can gather the information needed to set up his computer correctly.

Motivation and engagement make reading enjoyable, increase strategy use during reading, and support comprehension (Guthrie & Wigfield, 2000). It is no surprise that those who enjoy reading, read more, or that reading more improves reading outcomes. Adolescent struggling readers often lack motivation to read. This impairs their comprehension and limits their ability to develop effective reading strategies or to learn from what they read, thus limiting their exposure to important content-area information, world knowledge, and vocabulary (Morgan & Fuchs, 2007). In school settings, they face increasingly difficult reading material and classroom environments that tend to deemphasize the importance of fostering motivation to read (Guthrie & Davis, 2003). Outside of school, struggling students generally do not read for pleasure. They may also avoid potentially embarrassing situations that involve public disclosure of their reading difficulties, such as applying for a job or pursuing a driver's license. Finding ways to motivate and

The Challenge

Adolescent struggling readers often lack motivation to read. This impairs their comprehension and limits their ability to develop effective reading strategies or to learn from what they read, thus limiting their exposure to important content-area information, world knowledge, and vocabulary.

A Suggestion

Teachers can increase their students' motivation to read by incorporating several key components into instruction. Increasing students' reading motivation does not single-handedly improve reading skills, however. Attention to motivating students should occur within the context of a comprehensive reading program in which necessary reading skills and strategies are taught to struggling readers.

engage students in reading is an essential feature of adolescent literacy instruction.

What Do Successful Readers Do?

The table below summarizes features of successful and struggling readers in the area of reading motivation and highlights how successful readers benefit from reading motivation.

Successful readers	Struggling readers
• Interact with text in a motivated and strategic way. • Have improved comprehension and reading outcomes when engaged with text. • Read more and thus have more access to a variety of topics and text types. • Are interested and curious about topics and content in texts and read to find out more.	• May engage in reading as a passive process without giving effortful attention to activating prior knowledge, using reading strategies, or employing other strategic thought processes. • Often have low comprehension of text. • Fail to access a variety of wide reading opportunities. Given the choice, prefer not to read. • May not be interested in or curious about exploring topics or content through reading.

Adapted from Guthrie & Wigfield, 2000.

Instructional Practices Associated with Improved Motivation

In a summary of research on reading motivation, Guthrie and Humenick (2004) identified four critical instructional features that can improve students' motivation to read: 1) providing content goals for reading, 2) supporting student autonomy, 3) providing interesting texts, and 4) increasing social interactions among students related to reading. Because motivation to read is distinct from more generalized motivations to learn or achieve, in describing strategies to increase motivation we include only those that relate specifically to reading motivation.

Unlike other features of reading instruction, teachers do not provide explicit instruction in reading motivation. Rather, attention to increasing motivation occurs during planning and implementing other reading activities. Many studies

have grouped several motivational strategies together since many are interconnected. For example, to increase reading motivation and understanding, teachers might first provide a stimulating hands-on activity, then have cooperative learning groups generate questions related to the activity, and finally have students find answers to their questions by reading relevant texts.

Provide Content Goals for Reading

A content goal is a question or purpose for reading. Content goals emphasize the importance of and increase interest in learning from what we read (Guthrie & Humenick, 2004). Teachers can help students find a purpose for reading and foster their curiosity during reading. For example, a student who is reading to find out how panda bears are becoming extinct is more likely to read text carefully and to employ strategies that will help her understand what she reads so that she can answer her question (Grolnick & Ryan, 1987). Unlike performance goals that emphasize virtues such as completing a task or doing well on a test and may be competitive, content goals are grounded in the attainment of conceptual knowledge. Recommended instructional practices:

- Facilitate the use of relevant background knowledge to increase interest in gaining content mastery.
- Arrange hands-on experiences or other stimulating tasks that lead students to want to find out more by reading.
- Make content goals interesting and relevant by having students read a variety of materials to pursue a theme over a period of time, "publish" a brochure related to a historical event or geographical location, or learn about a topic in order to teach it to someone else.
- Model the behaviors of a curious reader who is rewarded with new knowledge about an interesting topic.
- Involve students in creating content goals and tracking their progress in meeting those goals.
- Give students feedback on their progress in meeting content goals.

Support Student Autonomy

When students choose what they read, what activities they engage in related to reading, and with whom they work, their motivation increases, as does the time they spend reading. Recommended instructional practices:

- Provide opportunities for students to choose which text they read by offering a list of appropriate readings. Students who can select their own reading material use more effective reading strategies and perform better on tests of comprehension.
- Give students control over some aspects of the task such as where to work in the classroom, what type of product to produce (e.g., essay or poster), and which subjects to pursue.
- Allow students to select partners, join groups, or work alone.

Use Interesting Texts

Students enjoy reading texts that they find interesting and choose to continue reading these texts during free time (Guthrie & Humenick, 2004). Further, people remember interesting information more than information they find uninteresting. High-interest text increases motivation to read. It also increases comprehension and achievement (Guthrie & Humenick, 2004). Several guidelines are helpful for selecting appropriate and interesting material, whether the teacher is choosing for the student or the student is choosing with teacher input:

- Choose texts on topics about which students possess background knowledge. Knowing something about a text's content makes it more interesting. Of course, school is about learning new things, and students will also have to read texts that present unfamiliar information. The recommendation is not to avoid introducing new material, but rather to be mindful of the importance of motivation and the effect that unfamiliar content can have on students' engagement. This underscores the importance of giving students ample background knowledge before asking them to read texts that present new information.
- Texts that are visually pleasing and appear readable (that is, texts that students perceive they will be successful at reading) are more interesting

and motivating. Pay attention to illustrations, layouts, graphics, and text sizes that are appealing and support text comprehension. As always, texts should be high quality, regardless of their appearance or reading level.

- A text's relevance and interest is often an individual matter. While some texts are interesting to just about everyone, other texts are interesting only when they support a reader's content goals. Recall the student who wants to understand the information in the computer manual so that he can set up his computer. This text is relevant and important to him, but may not interest a student who does not share the same content goals.
- To generate interest, provide stimulating tasks related to reading topics prior to reading.

Increase Opportunities for Students to Collaborate during Reading

Adolescents are motivated by working together (e.g., Ivey, 1999; Nichols & Miller, 1994). When students can collaborate socially on reading and reading-related tasks, they find the work more motivating and often continue working even after completing the assigned task (Guthrie & Humenick, 2004). Collaboration increases the number of opportunities struggling readers have to respond, and when a struggling reader is grouped with a more capable peer, he is more likely to be successful in the learning task. Similar to the other features of motivation, social interaction not only increases motivation for reading, but also increases understanding of what is read. Recommended instructional practices:

- Allow students to collaborate by reading together, sharing information, and explaining and presenting their knowledge to others during reading and reading-related tasks.
- Teach collaborative group work skills such as appropriate group work behavior, how to provide feedback to group members, and maintaining individual accountability so that students benefit from working together.
- Use collaboration to foster a sense of belonging to the classroom community (Anderman, 1999).

PUTTING IT ALL TOGETHER

This document provides an overview of the current knowledge on effective, research-based interventions for older students struggling with reading. *Academic Literacy Instruction for Adolescents* (Torgesen et al., 2007) raises some additional key considerations in implementing reading interventions for adolescents. They are summarized below, with the caveat that they are subject to variation depending on specific school and student needs. As with the other recommendations in this document, professionals will benefit from opportunities to learn more about each before implementing it.

- **Adjust the focus and intensity of interventions according to individual student needs.** Older students vary greatly in both the causes and manifestations of their reading problems. First, assessment practices must support the identification and progress monitoring of specific needs. Second, while some students require interventions that can be carried out in content-area classrooms (e.g., supporting vocabulary learning in a science classroom) others need instruction better suited to small, intensive learning environments (e.g., learning word-recognition strategies). This targeted support is most effective when provided in well-planned, regular small-group sessions over a long period of time. Middle and high schools need reading specialists to provide focused and extensive support to students with more significant reading deficiencies.
- **Offer teachers in general education classrooms professional development and support in providing classwide interventions in reading.** Considering the number of struggling readers in secondary classrooms, many recommended practices can and should be implemented in grade-level general education content area and literacy classrooms. With the exception of word learning skills and fluency, the reading strategies outlined here—vocabulary learning, reading comprehension strategies, and attention to reading motivation—support all learners. However, general education, content-area teachers commonly need support to learn and integrate these instructional practices. Further, while all teachers can play a role in improving adolescent literacy, not every teacher plays the same role. Administrators must lead schools in

sorting out who is responsible for providing the various aspects of reading instruction, when these practices will occur, and for whom.

- **Create ways for general education teachers and specialists to collaborate.** Collaboration between general education teachers and reading specialists, special education teachers, and teachers of English language learners is a priority if schools are to close the achievement gap in reading at the secondary level. This coordination of instructional practices is especially important for students who receive additional support in smaller intensive settings. For example, a student who is learning to use a summarization technique in a reading classroom should be encouraged to apply these skills in his social studies classroom. Likewise, a student who is learning specific vocabulary in science will have a greater opportunity to increase her understanding when she is given support and practice with the same vocabulary words and instructional techniques in the reading class. In addition to coordinating instruction for individual students, as mentioned above, collaboration is also necessary to coordinate program-wide decisions and implement reading instruction.

CONCLUDING REMARKS

Certain recommendations may seem straightforward, easy to implement, or already be part of your school, district, or state's daily practice. There may also be some instructional practices that leave you wondering how and when to put them in place. We urge you to use this document to build your background knowledge about features of reading instruction for older struggling readers, but not to stop here. The response to reading failure in the older grades needs to be active and purposeful. It will look different depending on current practice and individual needs and will require extensive professional development in the features of instruction this brief describes as well as in other areas of effective practices such as assessment. We cannot continue to implement practices that fail to result in positive outcomes for struggling readers. To meet the needs of these students, instruction must change. We now have the knowledge base to provide this essential instruction.

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