Nancy E. Marchand-Martella, Ph.D.,
and
Ronald C. Martella, Ph.D.

SRA FLEX LITERACY™

Important Features of Effective Adolescent Literacy Instruction

McGraw Hill Education

The purpose of this paper is to discuss the research evidence on what constitutes best practices for teaching adolescents the advanced literacy skills they need to succeed in high school, college, and the workplace. An overview of the topic is provided along with definitions of adolescent literacy and academic literacy and the statistics of how adolescents perform in reading. Further, discussions are provided of the five areas of effective literacy instruction and how they are addressed using complex text and other instructional components within effective adolescent literacy programs.

Overview

Without a doubt, learning to read with understanding is the most important skill students can acquire in school. Reading is tied to all other academic areas; think about how difficult it would be to tackle science and social studies textbooks or an advanced novel without adequate reading skills. Even math classes, with their abundance of application-oriented story problems, pose difficulties, given the reading skills required to complete them. Unfortunately, the vast majority of upper elementary, middle school, and high school students struggle reading grade-level text with ease and understanding. These reading difficulties are associated with high school dropouts, lower-paying jobs or unemployment, and failure to succeed in college (see Brozo, 2009 for details). According to Graham and Hebert (2010), "somewhere between one half to two thirds of new jobs in the future will require a college education and higher-level literacy skills" (p. 7). With regard to the workplace, 40 percent of high school graduates lack the required literacy skills employers desire (National Governors Association for Best Practices [NGA], 2005). For our students to be prepared for 21st-century higher education and employment opportunities, reading skills need to be explicitly taught throughout the adolescent years (NGA, 2005).

While some problems may stem from a lack of quality literacy instruction in the elementary grades, it is more likely that a lack of instruction in reading complex text throughout the upper grades and beyond is the culprit (Greenleaf and Hinchman, 2009). L. Carnine and D. Carnine (2004) noted, "In some schools, it is common to have significant numbers of classes in which 75–80 percent of students cannot successfully read textbooks" (p. 204). Snow and Moje (2010) described the widespread and misguided assumption that we should finish reading instruction by the end of third grade. They used the term "inoculation fallacy" to illustrate the notion that an early vaccination of reading instruction, especially in grades K–3, does not protect permanently against reading failure. We must continue to provide reading instruction beyond third grade.

What is adolescent literacy?

Adolescent literacy focuses instruction on students in grades 4 through 12. Adolescent literacy is considered a "very hot" topic as identified by reading experts surveyed by the International Reading Association. In fact, this topic "first appeared on the survey in 2001 and in 2006 attained 'very hot' status and has remained so ever since" (Cassidy, Ortlieb, and Schettel, 2010/2011, p. 1). The focus of reading instruction shifts for this population of students from *learning to read* in grades K–3 to *reading to learn* in grades 4 and above (Carnine, Silbert, Kame'enui, and Tarver, 2010; Texas Reading Initiative, 2002). However, for those students in grades 4 and above who have not learned to read, intervention practices take into account an emphasis on *learning to read* components (Kamil et al., 2008).

Biancarosa and Snow (2006) developed guidelines for effective adolescent literacy instruction in their *Reading Next* document. This document was developed to describe instructional and organizational components needed for literacy instruction in grades 4 and above—specifically, beyond those scientifically based practices noted in the federal education initiative entitled "Reading First" (for students in grades K–3). *Reading Next* addressed

fifteen components that describe best instructional and organizational practices for adolescent readers. These components include

- direct, explicit comprehension instruction.
- effective principles embedded in content.
- motivation and self-directed learning.
- text-based collaborative learning.
- strategic tutoring.
- diverse texts.
- intensive writing.
- technology.
- ongoing formative assessment.
- extended time for literacy.
- professional development.
- ongoing summative assessments of students and programs.
- teacher teams.
- leadership.
- a comprehensive and coordinated literacy program.

This list of best practices demonstrates that focus is placed on comprehension, motivation, and innovative ways of delivering instruction.

What is academic literacy?

Academic literacy is the kind of reading proficiency needed to draw meaning from content-area and advanced narrative text (Kamil et al., 2008; Kosanovich, Reed, and Miller, 2010; National Institute for Literacy [NIFL], 2007; Torgesen et al., 2007). Academic literacy also includes state-assessed reading proficiencies such as making inferences from text, learning vocabulary from context, making text comparisons, and summarizing the main ideas within a text (Torgesen et al., 2007). Academic literacy also refers to the type of knowledge and skills required to read and understand state assessments. Lee and Spratley (2010) use the term "disciplinary literacy" to describe the more specialized and complex literacy support and instruction students need in content areas.

The Common Core State Standards (see *www.corestandards.org*) identify important aspects of academic literacy for grades K–5 and 6–12. Foundational skills, literature-based skills, and skills designed for reading informational text are noted for grades K–5. Literature-based and informational text skills are evident for grades 6–12. Finally, literacy skills in history/social studies, science, and technical subjects are reported for grades 6–12. Students are required to comprehend increasingly complex text as they progress in school. "It is now widely recognized that even skillful reading at early grade levels will not automatically translate into higher-level academic literacy" (Greenleaf et al., 2011, p. 654).

Content-Area/Expository Text

In general, adolescent learners can read and decode simple text but struggle with more complicated content-area materials such as those found in science and social studies classes (Heller and Greenleaf, 2007). Expository text is typically more complex in nature; its purpose is to inform or describe. Text complexity accelerates rapidly beyond the elementary years (Guthrie and Davis, 2003). Literacy and learning within the content areas of science and social studies have become a critical feature of success for adolescent readers (Kosanovich et al., 2010).

> Students encounter expository text across their content-area courses. Expository text is found in newspaper and magazine articles, science and social studies texts, research articles, and primary source documents. The prevalence of expository text categories varies by discipline. For example, chronological order and cause/effect are common in history texts. Geography texts make frequent use of description and comparison/contrast. If students are not familiar with the various types of texts used in middle and high school, they may encounter challenges in comprehending what they read. (NIFL, 2007, p. 20)

According to Snow and Moje (2010), we must incorporate more literacy instruction into our content-area classes. Adolescent readers need to develop more complex skills to learn from the increasingly specialized and more complicated texts they will encounter in middle and high school (Carnegie Council on Advancing Adolescent Literacy, 2011; Fang and Schleppegrell, 2010).

Reading content-area text is difficult because students typically have fewer experiences with expository text (Lenski, Wham, Johns, and Caskey, 2007). Indeed, this type of text is considered quite formidable (Guthrie and Davis, 2003). This reading material is often denser than the material in narrative text (Coyne, Kame'enui, and Carnine, 2011). Its organization is typically harder to follow (Abadiano and Turner, 2002; Sáenz and Fuchs, 2002), and the vocabulary is increasingly technical (Abadiano and Turner, 2002; Ediger, 2002; Fang, 2006; Sáenz and Fuchs, 2002). Multipart words found in science and social studies textbooks can be especially difficult to decode (Fang, 2006). Further, the rich content in textbooks is often based on the assumption that students have some background knowledge of the topics presented (Sáenz and Fuchs, 2002).

Advanced Narrative Text

Narrative text describes events that occur through time that are "related through a causal or thematic chain" (Brewer, 1980, p. 223). In general, narrative text involves material presented as nonfiction (e.g., biographies and memoirs) or fiction (e.g., novels and fables) that tells the reader *who did what to whom and why* (Dymock, 2007; Harris and Hodges, 1995). "Generally, stories are easier for students to comprehend than expository text because the story structure is more consistent and has a linear orientation, making it more predictable" (Vaughn and Bos, 2012, p. 262). Further, struggling readers may benefit more from content delivered through narrative text that facilitates interest and builds better background knowledge (Wolfe and Mienko, 2007).

Adolescent students may have difficulty reading narrative text. Narrative text encompasses various genres, in both fiction and nonfiction domains. As students progress through grade levels, the narrative text they are required to read becomes increasingly complex (Dymock, 2007). Moreover, a lack of knowledge about narrative text structure, a skill generally acquired during the early elementary years (Stein and Glenn, 1979), can broadly interfere with student comprehension across academic areas (NICHD, 2000). Additionally, struggling readers may have fewer opportunities to read narrative text at more advanced grade levels, and what narrative text they are given will generally be composed of content at an advanced level. Finally, while lower-level adolescent readers may benefit more from content delivered via narrative text (Wolfe and Mienko, 2007), the majority of academic text they will read is expository in nature (Sáenz and Fuchs, 2002).

How do adolescents perform in reading?

The challenges of adolescent literacy are vast. The 2011 National Assessment of Educational Progress findings in reading for students in grades 4 and 8 were recently released (National Center for Education Statistics [NCES], 2011). This assessment focuses on reading to learn skills within literary and informational text. In this assessment, students were required to locate and recall information, integrate and interpret what they read, and critique and evaluate the text. Achievement levels included basic (denotes "partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade"), proficient ("represents solid academic performance" with "demonstrated competency over challenging subject matter"), and advanced ("superior performance") (NCES, 2011, p. 6). Results showed only 34 percent of fourth-grade students scored at or above the proficient level, with 33 percent scoring below the basic level. For eighth graders, only 34 percent of students scored at or above the proficient level, with 24 percent scoring below the basic level. Interestingly, those students who reported frequent class discussions about something the whole class had read scored higher than those who reported fewer discussions. For twelfth graders, 38 percent were at or above the proficient level, while 27 percent were performing below the basic level (NCES, 2010).

The NCES data for grades 4, 8, and 12 highlight the importance of effective and efficient reading instruction beyond grade 3. Three conclusions can be drawn. First, students need increased opportunities to examine literary and informational text with a critical eye. Second, students should discuss text within a whole-class setting. Finally, students must learn important foundational reading skills so they may locate and recall important information, integrate and interpret findings from what they read, and critique and evaluate text, viewing it from various perspectives.

Approximately eight million adolescent students experience difficulty reading at their appropriate grade levels (ACT, 2006; Biancarosa and Snow, 2006). In fact, "some 70 percent of older readers require some form of remediation. Very few of these older struggling readers need help to read the words on a page; their most common problem is that they are not able to comprehend what they read" (Biancarosa and Snow, 2006, p. 3). We have an opportunity to improve the reading skills of upper elementary, middle school, and high school students with better and more focused explicit reading instruction. We cannot leave students ill equipped to comprehend the more challenging reading materials they will face in later grades (Greenleaf

and Hinchman, 2009). "The older and further behind the student, the more ground he or she will have to cover, impacting the intensity and duration of necessary intervention" (Roberts, Torgesen, Boardman, and Scammacca, 2008, p. 63).

What are the five areas of effective literacy instruction, and how are they addressed using complex text?

Effective adolescent literacy instruction includes focused work in five general areas: word study, fluency, vocabulary, comprehension, and motivation (Boardman et al., 2008; Roberts et al., 2008) (see Figure 1). These skills differ from some of the general areas targeted in K–3 reading instruction (phonemic awareness, phonics, fluency, vocabulary, and text comprehension; see Armbruster, Lehr, and Osborn, 2006 and the National Institute of Child Health and Human Development [NICHD], 2000 for details). Phonemic awareness and phonics are not listed for older students. However, if these older students lack these foundational and basic literacy skills, explicit and systematic instruction should be provided (Boardman et al., 2008).

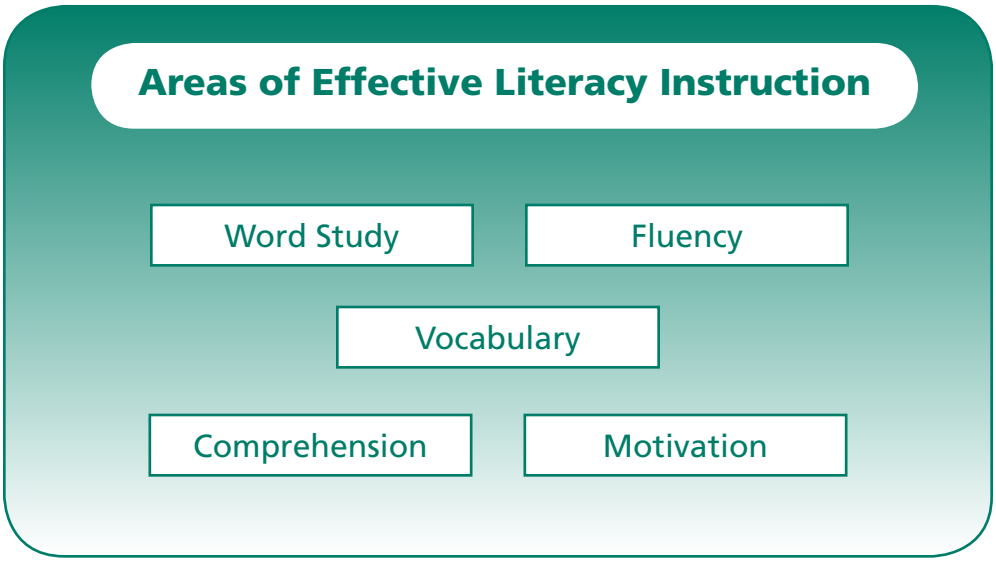

Figure 1. Five areas of effective literacy instruction

Word Study

Some adolescent readers experience difficulty simply reading words accurately; they make up the smallest subset of this population of readers (Biancarosa and Snow, 2006). For these students, instruction should include an emphasis on the building blocks of word study, including phonemic awareness, phonics, and preliminary fluency building (Kamil et al., 2008). The Alliance for Excellent Education (2004) estimates this percentage to be no more than 10 percent of students. Reading instruction may be more basic, with focus on

letter-sound correspondence, or more advanced, with emphasis on word parts and, later, word meanings. This instruction relies on word analysis and word-recognition skills benefitting readers of any age when accompanied by grade-appropriate materials. Most adolescent readers have basic decoding skills and can read simpler text; however, as the complexity of text increases, they experience difficulties reading the words. Content-area and advanced narrative text are much more complex, in terms of both the subject matter and the words used (Schumm and Strickler, 1991). The ability to decode and comprehend multipart words is crucial for understanding the meaning of most content-area texts (Archer, Gleason, and Vachon, 2003).

Decoding multipart words. One important word study strategy shown to help older learners with more complex text involves teaching them to decode multipart (multisyllabic) words. Segmenting word parts, the key aspect to a strategy for decoding multipart words, allows students to read longer and more difficult words before determining the meanings of the words. This strategy focuses on breaking down words into smaller chunks that are already known so the words can be read more easily without using formal syllabication (Archer et al., 2003; Boardman et al., 2008; Vaughn and Bos, 2012). Diliberto, Beattie, Flowers, and Algozzine (2009) suggested that since many struggling readers do not have the letter-sound correspondence mastered, explicitly teaching syllable chunking gives these struggling readers an appropriate tool to use to decode multipart words. Significant word-reading gains were made when systematic and explicit instruction was provided.

Fluency

Fluency instruction targets reading words "accurately, quickly, and with proper expression" (Malmgren and Trezek, 2009, p. 3). Most adolescent readers can read words accurately (Biancarosa and Snow, 2006); however, many students struggle with reading fluency, thereby hindering their understanding (Hasbrouck, 2006). When students learn to read fluently, they spend less time decoding and can devote their efforts toward understanding what they read (Boardman et al., 2008). In fact, increased fluency goes a long way toward increasing comprehension. Fluency is the bridge between simply reading the words on the page and actually understanding what the words mean (Malmgren and Trezek, 2009).

Guided oral reading and repeated reading. Fluency strategies are important because they make students better readers. To improve fluency, Boardman et al. (2008) recommended (a) tracking students' progress in fluency and providing frequent feedback, (b) providing models of fluent reading through guided oral-reading experiences, (c) allowing students to self-monitor their fluency and chart their performance, (d) using teacher-selected passages that include vocabulary that has been studied and previously taught or passages that can be read independently, (e) gradually increasing the difficulty of the passages as students demonstrate improved performance, and (f) using repeated oral reading with feedback.

The best method of improving reading fluency is through repeated oral reading (Hasbrouck, 2006; Hasbrouck and Tindal, 2006; Therrien, 2004; Vaughn and Bos, 2012). Repeated reading typically requires students to read a particular passage several times until a desired goal is met (e.g., 100 correct words per minute [cwpm]). Oftentimes students listen to a modeled read of the passage followed by student reading that is guided by a model (e.g., tape assisted, whisper reading). Listening to students and providing corrective feedback should be included in any fluency-building program. Boardman et al. (2008) recommended using reading passages with previously taught vocabulary at the students' reading level. In ef-

fect, repeated readings lead to increased vocabulary recognition with sight words and general vocabulary words, provide more practice opportunities for struggling readers, and are useful for fluency timings to monitor students' reading progress. Following reading practice, hot timings are conducted. Hot timings are compared to cold timings to determine cwpm increases.

Vocabulary

Vocabulary instruction emphasizes word meaning. When students understand the words they read and have strategies to find the meanings of the words, they have better understanding of what they read. Struggling readers have limited vocabularies compared to other students; without intervention, these struggling readers are likely to fall even farther behind in the content areas (Rupley and Slough, 2010). Vocabulary should focus on word meaning before students read connected text (L. Carnine and D. Carnine, 2004). Specific-word and word-learning strategies are necessary for increasing students' vocabularies (Armbruster et al., 2006; Boardman et al., 2008). Teachers must prepare and plan word instruction based upon the passages being read. Also, teachers must give students word-learning strategies to allow students the opportunity to build their vocabularies independently. When vocabulary instruction is provided, it should be explicit (Kamil et al., 2008).

Specific-word instruction. Specific-word instruction teaches individual words to students. Words are divided into three different tiers (Beck, McKeown, and Kucan, 2002). Tier One words are words students are likely to already know (e.g., big, happy, walk). Tier Two words are words that appear often in text and are common and more complex (e.g., sturdy, gloomy). Tier Three words are words that are specific to different content areas (e.g., heterogeneous, reconstruction). Beck et al. (2002) suggested teachers focus vocabulary instruction on Tier Two words while also explicitly teaching Tier Three words for relevant content areas. McEwan (2007) offered several guidelines to teach vocabulary to mastery. First, teachers should post the targeted words in the classroom to serve as a visual aid for those who may have trouble pronouncing them. Second, teachers should use student-friendly definitions of the words and suggest synonyms and antonyms of the words. Third, teachers should place the words into context and make connections with familiar things. Fourth, teachers can use word games and concept maps to help students gain familiarity with the words and a conceptual framework to build around each word. Finally, teachers should ask questions and incorporate new vocabulary into everyday language.

Word-learning strategies. Word-learning strategies, such as prefixes and suffixes, context clues, and reference aids, are ways of accessing word meaning in an independent manner. Nagy and Anderson (1984) described the "vocabulary explosion" that begins around fourth grade, due in part to words that have prefixes, suffixes, or both. This finding led White, Sowell, and Yanagihara (1989) to pinpoint critical prefixes and suffixes students need to know for reading success. By identifying words based on component elements that share certain commonalities, such as the prefixes *re-, un-*, and *non-* or the suffixes *-ing, -ed,* and *-s/-es*, students can learn groups of words and skills, making unnecessary the memorization of individual words and meanings (Hennings, 2000).

Using context clues involves defining an unknown word by using the surrounding words or sentences to derive the word's meaning (Carnine et al., 2010; Edwards, Font, Baumann, and Boland, 2004). A context-clues strategy can be learned and vocabulary increased when explicit instruction is provided.

Reference aids are helpful tools students use to determine word meaning (e.g., glossary, dictionary, or online dictionary) (Armbruster et al., 2006; Vaughn and Bos, 2012). Using reference aids such as glossaries, dictionaries, and computer-based resources (online dictionary/thesaurus) is a helpful word-learning strategy for finding the meanings of unknown words or accessing other words.

Comprehension

Comprehension is "a complex cognitive endeavor and is affected by, at least, the reader, the text, and the context" (McKeown, Beck, and Blake, 2009, p. 218). Readers who are successful in understanding what they read use various strategies to remember what they read and to improve comprehension when understanding is hindered. At the middle school and high school level, reading comprehension is arguably the most important component of reading instruction (Boardman et al., 2008). Unfortunately, adolescent readers often lack the strategies they need to grasp the meaning of text, to repair misunderstandings, and to change these strategies based on what they are reading (Biancarosa and Snow, 2006). To improve reading comprehension, Boardman et al. (2008) and Bryant, Ugel, Thompson, and Hamff (1999) recommended teaching comprehension strategies for students to use before, during, and/or after reading. When comprehension strategies are taught, direct and explicit instruction should be provided (Kamil et al., 2008).

Activating prior knowledge. A key strategy to improve student interest and comprehension involves activating prior knowledge of the subject matter. Boardman et al. (2008) suggested using strategies including previewing headings and concepts and making and verifying predictions to increase students' interest.

Students are also encouraged to make valuable connections with the text; these may be text-to-text (e.g., "what I just read reminds me of another book I read"), text-to-world ("what I just read reminds me of what I heard on television last night"), or text-to-self connections (e.g., "what I just read reminds me of something I experienced in second grade") (Duffy, 2003). Making connections fosters motivation and reading engagement (Lenski et al., 2007; Tovani, 2000). Further, students who make connections during reading can better understand the relationship between the concepts being presented (Lenski et al., 2007). Many teachers provide students with structured text-connection activities to encourage better understanding of the material and to get students to discuss what they are reading at a deeper level. Taking the time to prepare students before they read by previewing the text, setting a purpose for reading, and activating background knowledge can pay big dividends in terms of understanding and enjoyment (Vaughn and Bos, 2012).

Mental imagery. Mental imagery teaches students to develop images of the text in their heads to bolster their understanding and memory (Armbruster et al., 2006; De Beni and Moè, 2003). Students who have good comprehension skills respond to the text they read by using their prior knowledge of words and their own descriptive language to develop pictures or mental images (Duffy, 2003).

Text structure. Text structure refers to the way in which text is organized (Montelongo, Berber-Jiménez, Hernández, and Hosking, 2006; National Education Association [NEA], 2006). Expository text is usually organized in one of the following ways: (a) compare and contrast, (b) problem and solution, (c) cause and effect, (d) order or sequence,

and (e) description/list. Identifying text structure allows students to interact with the text to determine how the text structure and concepts are related (Montelongo et al., 2006; NEA, 2006). Authors use text structure in an organizational manner to communicate information to the reader. "Expository texts can be more difficult to comprehend because there is more variation in their organization (e.g., describing an object, comparing and contrasting two ideas, explaining a cause-effect)" (Vaughn and Bos, 2012, p. 263). Montelongo et al. (2006) found that learning about text structure helped students organize the most important information in science and social studies textbooks as well as identify the main ideas and recall vital facts from the text.

Story structure. Story grammar or narrative story structure is "an attempt to construct a set of rules that can generate a structure for any story" (Rayner and Pollatsek, 1989, p. 307). Narrative story structure is used in the construction of both fiction and nonfiction stories; it is the most common type of structure used in the elementary grades (Coyne et al., 2011). In narrative story structure, the following common elements are seen—characters, settings, events, conflict, climax, and resolution (Duffy, 2003; Gersten and Baker, 1999; Lapp, Flood, Brock, and Fisher, 2007). For example, identifying what happened in the beginning, middle, and end of a story helps students remember story events in the correct sequence.

Comprehension monitoring. When students monitor their own comprehension, they are able to determine their understanding while they read, implementing fix-up strategies when necessary (Boardman et al., 2008). Boardman et al. recommended students learn to identify confusing or hard words and how to fix their misunderstandings when reading. Reading more slowly and rereading difficult texts are two additional ways students can improve their comprehension (Robb, 1995; Schoenbach, Greenleaf, Cziko, and Hurwitz, 1999).

Question generation. Students typically are asked to answer teacher- or program-generated questions during reading; teachers stop at certain points in the text to ask these questions. Another effective tool for activating student engagement with text is asking students to generate their own questions (Boardman et al., 2008). Question generation requires students not only to develop questions but to seek the answers based on what they are reading (Hashey and Connors, 2003; Rosenshine, Meister, and Chapman, 1996; Vaughn and Bos, 2012). When students generate questions and answers, they are typically more motivated to read the text, clarify information they do not know, and exhibit higher-order thinking (Tovani, 2000). Evidence also suggests that writing questions and answers makes the information easier to remember and provides more opportunity to interact with the content of the text (Graham and Hebert, 2010).

Summarization. Students must identify, extract, and combine the most important information in the text when they summarize (Schoenbach et al., 1999). Explicit instruction that teaches students how to summarize is an important first step in improving comprehension. Graham and Hebert (2010) found that writing summaries about what was being read was associated with improvements in reading comprehension. They also stated that writing summaries was better than simply reading and rereading the text. Teaching students to summarize text gives students the chance to recall essential details encountered while reading (Carnine et al., 2010).

Text features/parts of a textbook. Text features are components of a textbook that

are added to enhance interest or understanding (Fisher, Frey, and Lapp, 2008). Text features include headings, subheadings, a table of contents, an index, and charts, tables, and diagrams. Without an understanding of how textbooks are structured, students who have difficulties reading content-area text are left even farther behind. Modeling how to use text features is an effective strategy to improve student understanding (Fisher et al., 2008).

Note taking. Note taking helps students record information presented in a textbook or other print-based source, a lecture, or a class discussion. Writing about what is read theoretically enhances comprehension because it "provides students a tool" for recording, connecting, analyzing, and personalizing key ideas (Graham and Hebert, 2010, p. 13). Additionally, Graham and Hebert (2010) suggested that reading skills are enhanced when students write about what they read. Also, students are more likely to remember the material they read when reviewing their notes because more time is spent on the material (Robinson et al., 2006). Research suggests note taking is effective in helping students recall large amounts of information (Boyle and Weishaar, 2001). Students can then use these notes as study guides (Ogle, 1996; Santa, Havens, and Harrison, 1996).

Motivation

Struggling readers often are not motivated to read and remain passive in the reading process (Sabornie and deBettencourt, 2009). Many have had negative experiences with reading over the years, often being told this is the year they will learn to read, only to be faced with low performance in reading-related activities once again. Their negative experiences have been "repetitive and cumulative" (Sabornie and deBettencourt, 2009, p. 145). Decreased motivation has a spiraling effect on struggling students; the less motivated they are, the less they read; the less they read, the farther behind they fall. Biancarosa and Snow (2006) listed motivation as one of the fifteen critical elements of adolescent literacy. Based on a summary of research, Boardman et al. (2008) discussed four features to improve student motivation to read. These are (a) provide content goals for reading, (b) allow and support student autonomy, (c) use interesting text, and (d) increase social interactions related to reading. The main difference between motivation and the other elements of reading instruction is that motivation is not taught explicitly; we must promote motivation based on what and how we teach and the interactions we include with text. Kamil et al. (2008) noted positive effects in reading achievement when student motivation and engagement in literacy learning are enhanced.

Student motivation increases when students are successful. Therefore, reading experiences should be reinforcing. If students are appropriately placed in a program, they are more likely to be successful. If a program is based on the tenets of errorless learning, in which student error rates are kept to a minimum, students are more likely to respond correctly and remain motivated to learn.

One approach that helps ensure successful responding and keeps students motivated involves computer-assisted instruction. "The computer is an ideal tool for helping students learn phonological awareness and phonics, build fluency, increase their vocabulary and word recognition, and enhance comprehension" (Vaughn and Bos, 2012, p. 253). Computers are in and of themselves quite motivating; game-like programs are often used to make learning fun. Computers promote active versus passive learning; they "provide highly specialized instruction and practice for relatively low cost with relatively high and consistent fidelity" (Torgesen, Wagner, Rashotte, Herron, and Lindamood, 2010, p. 42). Errors can often be im-

mediately corrected, and repetitions can be built in to ensure firm student responding. Many programs have bells and whistles that capture students' attention, reinforce correct responding, and keep students working for longer periods of time. Reading improvements have been demonstrated with the use of computer-assisted instruction (see research review by Hall, Hughes, and Filbert, 2000, and technology tips noted by Vaughn and Bos, 2012, for details). Technology is considered both a facilitator of literacy and a medium of literacy (Biancarosa and Snow, 2006); it should become a key delivery mode for instruction in 21st-century classrooms (Dalton and Grisham, 2011).

What are other instructional considerations?

Besides the five areas of effective literacy instruction, we must keep in mind other instructional considerations when helping struggling students as they read complex text. These considerations include an emphasis on the following: (a) Bloom's Taxonomy and metacognition, (b) graphic organizers, (c) reciprocal teaching, and (d) teacher read-alouds and text-based discussion (see Figure 2).

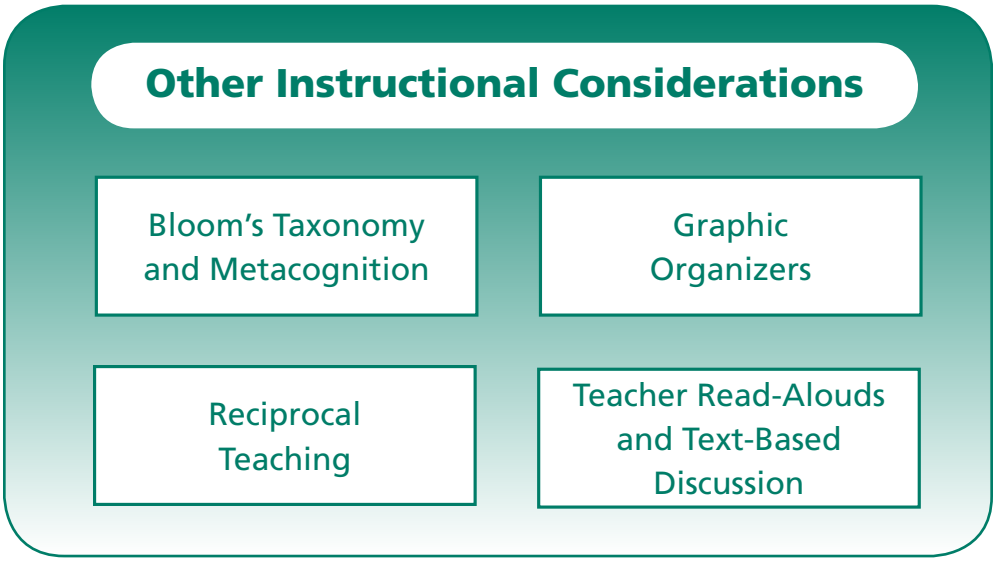

Figure 2. Four other instructional considerations for effective literacy instruction.

Bloom's Taxonomy and Metacognition

The development of higher-order thinking skills is promoted through questions and activities related to Bloom's Taxonomy (Anderson et al., 2001). Benjamin S. Bloom wrote the Taxonomy of Education Objectives, commonly called Bloom's Taxonomy (Krathwohl, 2002). Originally, this taxonomy created a common language with respect to goals in education and decision-making related to curriculum. Bloom's Taxonomy was revised in 2001 and is now divided into six categories of cognitive processes: (1) remembering, (2) understanding, (3) applying, (4) analyzing, (5) evaluating, and (6) creating. Bloom's Taxonomy helps teachers create increasingly more complex questions that support or encourage higher-order thinking in our students. Such "higher-level thinking might include critiquing texts, making comparisons between authors' points of view, and synthesizing information across multiple

texts" (Carnegie Council on Advancing Adolescent Literacy, 2011, p. 79). These types of activities increase students' skills in tackling more complex text. They promote metacognition.

Metacognition is the process of thinking about one's own thinking. (Klingner, Vaughn, Dimino, Schumm, and Bryant, 2001; McCardle, Chhabra, and Kapinus, 2008). Students think about what comprehension skills and strategies they could use under certain circumstances and then implement them. Biancarosa and Snow (2006) and McCardle et al. (2008) noted students need to think about their understanding while they're reading and adjust when necessary, choosing new strategies when the need arises. Successful learning in content areas requires students to be aware of how they understand a concept and how to "adjust their thinking to ensure learning" (Wilson, Grisham, and Smetana, 2009, p. 709). Content learning and metacognition occur through repeated interactions with complex text and through other experiences with the content (Wilson et al., 2009).

Graphic Organizers

Graphic organizers are visual aids that help students remember, organize, and identify key information from their reading. They are helpful in that they provide a means to provide multimodality instruction—visual modality (seeing the graphic organizer), auditory modality (hearing about the components of the graphic organizer), and tactile/kinesthetic modality (writing in or typing into the graphic organizer). Graphic organizers include story maps and Venn diagrams; they may even include charts or diagrams that illustrate important aspects of text structure—cause and effect, problem-solution, description/list, order or sequence, and compare and contrast.

L. Carnine and D. Carnine (2004) recommended the use of graphic organizers to help students make sense of tough content-area text. Gajria, Jitendra, Sood, and Sacks (2007) noted positive intervention effects in comprehension of expository text for students with learning disabilities when graphic organizers were employed.

> Across the board, when the students were taught to use graphic organizers, large effect sizes were demonstrated on researcher-developed reading comprehension post-tests. Thus, visual displays of information such as those provided by graphic organizers enhance the reading comprehension of students with learning disabilities, possibly by helping these students organize the verbal information and thereby improving their recall of it. (Kim, Vaughn, Wanzek, and Wei, 2004, p. 114)

Reciprocal Teaching

Reciprocal teaching is a multiple-strategy approach, developed by Palincsar and Brown (1984), used to improve reading comprehension. "It appears that multiple-strategy training results in better comprehension than single-strategy training" (Kamil et al., 2008, p. 17). In this multiple-strategy approach, the teacher and students take turns leading a dialogue that covers various sections of the text (Vaughn and Bos, 2012). First, the teacher models the strategy and its various skill components and then, over time, the teacher fades his or her role until the students are leading the discussion, either as a full class or in small groups. Students participate in the discussion, providing comments and questions on what other students say. Student discussion enhances understanding of the text (Pilonieta and Medina, 2009).

Reciprocal teaching consists of four parts (Stricklin, 2011), sometimes referred to as the "fab four": questioning, clarifying, predicting, and summarizing. Questioning involves developing questions about text and their answers; these questions are posed to the other students. Clarifying requires students to fix up any questions they may have about the text.

Students may look up difficult words or discuss tougher parts of the text related to comprehension. Predicting involves making guesses about what might happen next. Summarizing requires students to condense the information into a main idea, or gist. Students progressively work through multiple texts using the same reciprocal teaching strategy (Biancarosa and Snow, 2006); the key is to move students into a broader understanding of the material (Williams, 2010).

Positive effects in comprehension were noted in a research review of studies employing reciprocal teaching (Rosenshine and Meister, 1994). Further, the NICHD (2000) reported positive effects for studies employing multiple-strategy instruction such as reciprocal teaching, and Biancarosa and Snow (2006) highlighted reciprocal teaching as an "excellent approach" in their direct and explicit comprehension instruction example of classroom techniques.

A key part of reciprocal teaching involves student collaboration or cooperative learning. Students learn to work together in small groups (Guthrie and Davis, 2003). They need opportunities to share reading experiences with others. Collaboration involves active participation of all group members; in this way, responsibility and confidence are fostered. Kamil et al. (2008) noted the benefits of collaborative learning in improving reading performance of adolescent learners. "Research has found that cooperative learning can improve reading comprehension and achievement across the content areas for students in the upper elementary through high school grades" (Biancarosa, 2005, p. 18).

Teacher Read-Alouds and Text-Based Discussion

One way to make difficult books accessible to struggling students is for teachers to read aloud to the students (Vaughn and Bos, 2012).

> As every teacher knows, the benefits of read-alouds are numerous. Teachers conduct read-alouds to motivate their students to read and to build their topical knowledge. . . . Read-aloud texts, which are typically more difficult for children than their independent reading texts, are often followed by a brief discussion of the events and themes. The "ahhs" that follow when the session is over and the promise of more tomorrow demonstrate the joy associated with a good read-aloud (Fisher, Flood, Lapp, and Frey, 2004, p. 8).

Teachers may ask those students who can read the text to share in this read-aloud. This approach is used when teachers want students exposed to tougher text so that more advanced discussion takes place in which vocabulary and comprehension strategies can be taught.

During teacher read-alouds, students are posed thought-provoking questions or participate in focused comprehension activities. The focus is on gathering meaning from the text and getting students to dig for meaning through discussion (Vaughn and Bos, 2012). Struggling readers benefit from rich and prompted text discussion (Beck and McKeown, 2001; Hollenbeck, 2011; Williams, 2005). Rather than simply reading to students, teachers incorporate structured interactions with students to create opportunities for rich discussion (Santoro, Chard, Howard, and Baker, 2008). In fact, the NCES (2011) found "eighth graders having more frequent class discussions score higher" (p. 15) as compared to those who discussed text they read in class less frequently. Further, Swanson et al. (2011) found large gains in vocabulary and comprehension outcomes when teacher read-alouds, with focus on dialogic reading (open-ended questioning and quality discussion), were conducted. Indeed, "the read aloud process has enormous benefits to literacy learning" (Morrison and Wlodarczyk, 2009, p. 111).

Additionally, teachers should discuss word meaning. This discussion improves vocabulary development and overall reading achievement (see Kamil et al., 2008, on the effects of explicit vocabulary instruction). Providing a vocabulary word overview and then revisiting words upon reading the text is an effective means of strengthening word consciousness (Scott and Nagy, 2004).

Summary

Reading is the most important skill students can acquire in school; it is tied to success in all other academic areas. Unfortunately, the vast majority of upper elementary, middle school, and high school students find it difficult to read grade-level or higher text with ease and understanding. The problem may stem from the fact that reading instruction is not continued in grade 4 and beyond—the term "inoculation fallacy" is used to illustrate the faulty notion that K–3 reading instruction will permanently protect against reading difficulties later on. Research demonstrates that instruction should be continued so that students can better handle content-area and advanced narrative text.

Adolescent literacy is considered a hot topic in reading. This is instruction provided to students in grades 4–12. An emphasis is placed on reading-to-learn strategies designed to help students gather information from text. The *Reading Next* document by Biancarosa and Snow (2006) outlines fifteen components that describe best instructional and organizational practices for older learners. These components include direct and explicit comprehension instruction, effective principles embedded in content, motivation and self-directed learning, text-based collaborative learning, strategic tutoring, diverse texts, intensive writing, technology, ongoing formative assessment, extended time for literacy, professional development, ongoing summative assessments of students and programs, teacher teams, leadership, and comprehensive and coordinated literacy programs.

Adolescent literacy programs should focus on academic literacy, with emphasis on content-area and advanced narrative text as well as reading geared toward understanding state-level assessments and making inferences. Academic literacy skills should follow those skills highlighted in the Common Core State Standards.

Five areas of effective adolescent literacy instruction include word study, fluency, vocabulary, comprehension, and motivation. These skills differ from some of the general areas targeted in K–3 reading instruction. Word study should target decoding multipart words if students have already acquired basic phonemic awareness and phonics skills. Fluency building should incorporate guided oral reading and repeated reading components. When vocabulary instruction is provided, an emphasis should be placed on specific words and word-learning strategies. Comprehension instruction should target activating prior knowledge, mental imagery, text structure, story structure, comprehension monitoring, question generation, summarization, text features/parts of a textbook, and note taking. Motivational aspects include content goals for reading, supporting student autonomy, using interesting text, and increasing social interactions. Student motivation is also enhanced through the use of computers.

Other instructional considerations should be made when designing effective literacy instruction for adolescents. These considerations include adherence to higher levels of Bloom's Taxonomy and metacognition, use of graphic organizers, reciprocal teaching, and teacher read-alouds and text-based discussion. In fact, reciprocal teaching and text-based discussion have lasting, positive effects for students because of collaborative learning and teacher guidance.

References

Abadiano, H., and Turner, J. (2002). Reading expository text: The challenges of students with learning disabilities. *New England Reading Association Journal*, 38, 49–55.

ACT, Inc. (2006). *Reading between the lines: What the ACT reveals about college readiness in reading*. Iowa City, IA.

Alliance for Excellent Education. (2004). *Reading for the 21st century: Adolescent literacy teaching and learning strategies.* Washington, DC.

Anderson, L., Krathwohl, D., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., …Wittrock, M. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives.* New York, NY: Longman.

Archer, A. L., Gleason, M. M., and Vachon, V. L. (2003). Decoding and fluency: Foundation skills for struggling older readers. *Learning Disability Quarterly,* 26, 89–101.

Armbruster, B. B., Lehr, F., and Osborn, J. (2006). *Put reading first: The research building blocks for teaching children to read* (3rd ed.). Jessup, MD: Center for the Improvement of Early Reading Achievement.

Beck, I. L., and McKeown, M. G. (2001). Text talk: Capturing the benefits of read-aloud experiences for young children. *The Reading Teacher*, 55, 10–20.

Beck, I. L., McKeown, M. G., and Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York, NY: Guilford.

Biancarosa, G. (2005, October). After third grade. *Educational Leadership*, 16–22.

Biancarosa, G., and Snow, C. E. (2006). *Reading next: A vision for action and research in middle and high school literacy. A report to Carnegie Corporation of New York* (2nd ed.). Washington, DC: Alliance for Excellent Education.

Boardman, A. G., Roberts, G., Vaughn, S., Wexler, J., Murray, C. S., and Kosanovich, M. (2008). *Effective instruction for adolescent struggling readers: A practice brief*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.

Boyle, J. R., and Weishaar, M. (2001). The effects of strategic notetaking on the recall and comprehension of lecture information for high school students with learning disabilities. *Learning Disabilities Research and Practice*, 16, 133–141.

Brewer, W. F. (1980). Literary theory, rhetoric, and stylistics: Implications for psychology. In R. J. Shapiro, B. C. Bruce, and W. F. Brewer (Eds.), *Theoretical issues in reading comprehension* (pp. 221–239). Hillsdale, NJ: Erlbaum.

Brozo, W. G. (2009). Response to intervention or responsive instruction? Challenges and possibilities of response to intervention for adolescent literacy. *Journal of Adolescent Literacy*, 53, 277–281. doi: 10.1598/JAAL.53.4.1

Bryant, D., Ugel, N., Thompson, S., and Hamff, A. (1999). Instructional strategies for content-area reading instruction. *Intervention in School and Clinic*, 34, 293–302.

Carnegie Council on Advancing Adolescent Literacy. (2011). *Time to act: An agenda for advancing adolescent literacy for college and career success.* New York, NY: Carnegie Corporation of New York.

Carnine, L., and Carnine, D. (2004). The interaction of reading skills and science content knowledge when teaching struggling secondary students. *Reading & Writing Quarterly*, 20, 203–218.

Carnine, D. W., Silbert, J., Kame'enui, E. J., and Tarver, S. G. (2010). *Direct instruction reading* (5th ed.). Columbus, OH: Pearson/Merrill.

Cassidy, J., Ortlieb, E., and Schettel, J. (2010/2011). What's hot for 2011. *Reading Today*, 28(3), 1, 6–7.

Coyne, M. D., Kame'enui, E. J., and Carnine, D. W. (2011). *Effective teaching strategies that accommodate diverse learners* (4th ed.). Boston, MA: Pearson.

Dalton, B., and Grisham, D. L. (2011). eVoc strategies: 10 ways to use technology to build vocabulary. *The Reading Teacher*, 64, 306–317.

De Beni, R. and Moè, A. (2003). Presentation modality effects in studying passages. Are mental images always effective? *Applied Cognitive Psychology*, 17, 309–324.

Diliberto, J. A., Beattie, J. R., Flowers, C. P., and Algozzine, R. F. (2009). Effects of teaching syllable skills instruction on reading achievement in struggling middle school readers. *Literary Research and Instruction*, 48, 14–27. doi: 10.1080/19388070802226253

Duffy, G. G. (2003). *Explaining reading: A resource for teaching concepts, skills, and strategies*. New York, NY: Guilford Press.

Dymock, S. J. (2007). Comprehension strategy instruction: Teaching narrative text structure awareness. *The Reading Teacher*, 61, 161–167.

Ediger, M. (2002). Factors which make expository reading difficult. *Journal of Instructional Psychology*, 29, 312-316.

Edwards, E. C., Font, G., Baumann, J. F., and Boland, E. (2004). Unlocking word meanings: Strategies and guidelines for teaching morphemic and contextual analysis. In J. F. Baumann and E. J. Kame'enui (Eds.), *Vocabulary instruction: Research to practice* (pp. 159–176). New York, NY: Guilford.

Fang, Z. (2006). The language demands of science reading in middle school. International *Journal of Science Education*, 28, 491–520.

Fang, Z., and Schleppegrell, M. J. (2010). Disciplinary literacies across content areas: Supporting secondary reading through functional language analysis. *Journal of Adolescent and Adult Literacy*, 53, 587-597. doi:10.1598/JAAL.53.7.6

Fisher, D., Flood, J., Lapp, D., and Frey, N. (2004). Interactive read-alouds: Is there a common set of implementation practices? *The Reading Teacher*, 58, 8–17.

Fisher, D., Frey, N., and Lapp, D. (2008). Shared readings: Modeling, comprehension, vocabulary, text structures, and text features for older readers. *The Reading Teacher*, 61, 548–556. doi: 10.1598/RT.61.7.4

Gajria, M., Jitendra, A. K., Sood, S., and Sacks, G. (2007). Improving comprehension of expository text in student with LD: A research synthesis. *Journal of Learning Disabilities*, 40, 210–225.

Gersten, R., and Baker, S. (1999). *Reading comprehension instruction for students with learning disabilities*. Retrieved from *http://www.ncld.org/content/view/521/*

Graham, S., and Hebert, M. A. (2010). *Writing to read: Evidence for how writing can improve reading. A Carnegie Corporation Time to Act Report,* Washington, DC: Alliance for Excellent Education.

Greenleaf, C. L., and Hinchman, K. (2009). Reimagining our inexperienced adolescent readers: From struggling, striving, marginalized and reluctant to thriving. *Journal of Adolescent and Adult Literacy*, 53, 4–13. doi:10.1598/JAAL.53.1.1

Greenleaf, C. L. Litman, C., Hanson, T. L., Rosen, R., Boscardin, C. K., Herman, J., … Jones, B. (2011). Integrating literacy and science in biology: Teaching and learning impacts of reading apprenticeship professional development. *American Educational Research Journal*, 48, 647–717.

Guthrie, J. T., and Davis, M. H. (2003). Motivating struggling readers in middle school through an engagement model of classroom practice. *Reading & Writing Quarterly*, 19, 59–85.

Hall, T. E., Hughes, C. A., and Filbert, M. (2000). Computer assisted instruction in reading for students with learning disabilities: A research synthesis. *Education and Treatment of Children*, 23, 173–193.

Harris, T. L., and Hodges, R. E. (Eds.) (1995). *The literacy dictionary: The vocabulary of reading and writing*. Newark, DE: International Reading Association.

Hasbrouck, J. (2006, Summer). Drop everything and read—but how? *American Educator*, 22–31, 46–47.

Hasbrouck, J., and Tindal, G. (2006). Oral reading fluency norms: A valuable assessment tool for reading teachers. *The Reading Teacher*, 59, 636–644.

Hashey, J. M., and Connors, D. J. (2003). Learn from our journey: Reciprocal teaching action research. *The Reading Teacher*, 57, 224–232.

Heller, R., and Greenleaf, C. (2007). *Literacy instruction in the content areas: Getting to the core of middle and high school improvement.* Washington, DC: Alliance for Excellent Education.

Hennings, D. G. (2000). Contextually relevant word study: Adolescent vocabulary development across the curriculum. *Journal of Adolescent and Adult Literacy*, 44, 268–279.

Hollenbeck, A. F. (2011). Instructional makeover: Supporting the reading comprehension of students with learning disabilities in a discussion-based format. *Intervention in School and Clinic*, 46, 211–220.

Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., and Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A Practice Guid*e (NCEE #2008-4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department ofEducation. Retrieved from *http://ies.ed.gov/ncee/wwc.*

Kim, A-H, Vaughn, S., Wanzek, J., and Wei, S. (2004). Graphic organizers and their effects on the reading comprehension of students with LD: A synthesis of research. *Journal of Learning Disabilities*, 37, 105–118.

Klingner, J. K., Vaughn, S., Dimino, J., Schumm, J. S., and Bryant, D. (2001). *Collaborative strategic reading: Strategies for improving comprehension*. Longmont, CO: Sopris West.

Kosanovich, M. L., Reed, D. K., and Miller, D. H. (2010). *Bringing literacy strategies into content instruction: Professional learning for secondary-level teachers*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.

Krathwohl, D. R. (2002). A revision of Bloom's Taxonomy: An overview. *Theory Into Practice*, 41, 212–218.

Lapp, D., Flood, J., Brock, C., and Fisher, D. (2007). *Teaching reading to every child* (4th ed.). Mahwah, NJ: Erlbaum.

Lee, C. D., and Spratley, A. (2010). *Reading in the disciplines: The challenges of adolescent literacy*. New York, NY: Carnegie Corporation of New York.

Lenski, S. D., Wham, M. A., Johns, J. L., and Caskey, M. M. (2007). *Reading and learning strategies: Middle grades through high school* (3rd ed.). Dubuque, IA: Kendall/Hunt.

Malmgren, K. W., and Trezek, B. J. (2009). Literacy instruction for secondary students with disabilities. *Focus on Exceptional Children*, 41(6), 1–12.

McCardle, P., Chhabra, V., and Kapinus, B. (2008). *Reading research in action: A teacher's guide for student success*. Baltimore, MD: Brookes.

McEwan, E. K. (2007). *Use and teacher content vocabulary daily.* Retrieved from: *http://www.adlit.org/article/19792*

McKeown, M. G., Beck, I. L., and Blake, R. (2009). Rethinking reading comprehension instruction: A comparison of instruction for strategies and content approaches. *Reading Research Quarterly*, 44, 218–253. doi.org/10.1598/RRQ.44.3.1

Montelongo, J., Berber-Jiménez, L., Hernández, A. C., and Hosking, D. (2006). Teaching expository text structures. *The Science Teacher*, 73, 28–31.

Morrison, V., and Wlodarczyk, L. (2009). Revisiting read-aloud: Instructional strategies that encourage students' engagement with texts. *The Reading Teacher*, 63, 110–118.

Nagy, W. E., and Anderson, R. C. (1984). How many words are there in printed school English? *Reading Research Quarterly*, 19, 304–330.

National Center for Education Statistics [NCES]. (2010). *The nation's report card: Grade 12 reading and mathematics 2009 national and pilot state results*. (NCES 2011-455). Washington, DC: Institute of Education Sciences, U.S. Department of Education.

National Center for Education Statistics. (2011). *The nation's report card: Reading 2011* (NCES 2012-457). Washington, DC: Institute of Education Sciences. U.S. Department of Education.

National Education Association (NEA). (2006). *Using text structure.* Retrieved from *http://www.nea.org/reading/usingtextstructure.html*

National Governors Association for Best Practices (NGA). (2005). *Reading to achieve: A governor's guide to adolescent literacy*. Retrieved from: *http://www.nga.org/Files/pdf/0510GOVGUIDELITERACY.PDF*

National Institute for Literacy (NIFL). (2007). *What content-area teachers should know about adolescent literacy.* Retrieved from *http://www.nifl.gov/nifl/publications/adolescent_literacy07.pdf*

National Institute of Child Health and Human Development (NICHD). (2000). Report of the National Reading Panel. Teaching children to read: *An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups* (NIH Publication No. 00-4754). Retrieved from *http://www.nichd.nih.gov/publications/nrp/smallbook.cfm*

Ogle, D. M. (1996). Study techniques that ensure content area reading success. In D. Lapp, J. Flood, and N. Farnan (Eds.), *Content area reading and learning instructional strategies* (2nd ed.) (pp. 3-14). Needham Heights, MA: Simon & Schuster.

Palincsar, A. S., and Brown, A. L. (1984). *Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities.* Cognition and Instruction, 1, 117–175.

Pilonieta, P., and Medina, A. L. (2009). Reciprocal teaching for the primary grades: "We can do it, too!" *The Reading Teacher*, 63, 120–129.

Rayner, K., and Pollatsek, A. (1989). *The psychology of reading.* Englewood Cliffs, NJ: Prentice Hall.

Robb, L. (1995). *Reading strategies that work: Teaching your students to become better readers.* New York, NY: Scholastic.

Roberts, G., Torgesen, J. K., Boardman, A., and Scammacca, N. (2008). Evidence-based strategies for reading instruction of older students with learning disabilities. *Learning Disabilities Research & Practice*, 23, 63–69.

Robinson, D. H., Beth, A., Odom, S., Hsieh, Y., Vanderveen, A., and Katayama, A.D. (2006). Increasing text comprehension and graphic note taking using a partial graphic organizer. *The Journal of Educational Research*, 100(2), 103–111.

Rosenshine, B., and Meister, C. (1994). Reciprocal teaching: A review of the research. *Review of Educational Research*, 64, 479-530.

Rosenshine, B., Meister, C., and Chapman, S. (1996). Teaching students to generate questions: A review of the intervention studies. *Review of Educational Research*, 66, 181–221.

Rupley, W. H., and Slough, S. (2010). Building prior knowledge and vocabulary in science in the intermediate grades: Creating hooks for learning. *Literacy Research and Instruction,* 49, 99–112. doi: 10.1080/19388070902780472

Sabornie, E. J., and deBettencourt, L. U. (2009). *Teaching students with mild and high-incidence disabilities at the secondary level* (3rd ed.). Upper Saddle River, NJ: Pearson.

Sáenz, L. M., and Fuchs, L. S. (2002). Examining the reading difficulty of secondary students with learning disabilities: Expository versus narrative text. *Remedial and Special Education, 23, 31–41.*

Santa, C. M., Havens, L., and Harrison, S. (1996). Teaching secondary science through reading, writing, studying, and problem solving. In D. Lapp, J. Flood, and N. Farnan (Eds.), *Content area reading and learning instructional strategies* (2nd ed.) (pp. 3–14). Needham Heights, MA: Simon & Schuster.

Santoro, L. E., Chard, D. J., Howard, L., and Baker, S. K. (2008). Making the very most of classroom read-alouds to promote comprehension and vocabulary. *The Reading Teacher*, 6, 396–408.

Schoenbach, R., Greenleaf, C., Cziko, C., and Hurwitz, L. (1999). *Reading for understanding: A guide to improving reading in middle and high school classrooms.* San Francisco, CA: Jossey-Bass.

Schumm, J. S., and Strickler, K. (1991). Guidelines for adapting content area textbooks: Keeping teachers and students content. *Intervention in School and Clinic*, 27, 79–84.

Scott, J. A., and Nagy, W. E. (2004). Developing word consciousness. In J. F. Baumann and E. J. Kame'enui (Eds.), Vocabulary instruction: Research to practice (pp. 201–217). New York, NY: Guilford.

Snow, C. and Moje, E. (2010). Why is everyone talking about adolescent literacy? *Phi Delta Kappan*, 91(6), 66–69.

Stein, N., and Glenn, C. (1979). An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), *Advances in discourse processing (Vol. 2): New directions in discourse processing* (pp. 53–120). Norwood, NJ: Ablex.

Stricklin, K. (2011). Hands-on reciprocal teaching: A comprehension technique. *The Reading Teacher*, 64, 620–625.

Swanson, E., Vaughn, S., Wanzek, J., Petscher, Y., Heckert, J., Cavanaugh, C., Kraft, G., and Tackett, K. (2011). A synthesis of read-aloud interventions on early reading outcomes among preschool through third graders at risk for reading difficulties. *Journal of Learning Disabilities*, 44, 258–275.

Texas Reading Initiative. (2002). *Research-based content area reading instruction*. Austin, TX: Texas Education Agency.

Therrien, W. J. (2004). Fluency and comprehension gains as a result of repeated reading: A meta-analysis. *Remedial and Special Education*, 25, 252–261.

Torgesen, J. K., Houston, D. D., Rissman, L. M., Decker, S. M., Roberts, G., Vaughn, S., … Lesaux, N. (2007). *Academic literacy instruction for adolescents: A guidance document from the Center on Instruction.* Portsmouth, NH: RMC Research Corporation, Center on Instruction.

Torgesen, J. K., Wagner, R. K., Rashotte, C. A., Herron, J., and Lindamood, P. (2010). Computer-assisted instruction to prevent early reading difficulties in students at risk for dyslexia: Outcomes from two instructional approaches. *Annals of Dyslexia*, 60, 40–56.

Tovani, C. (2000). *I read it, but I don't get it: Comprehension strategies for adolescent readers*. Portland, ME: Stenhouse.

Vaughn, S., and Bos, C. S. (2012). *Strategies for teaching students with learning and behavior problems* (8th ed.). Boston, MA: Pearson.

White, T. G., Sowell, J., and Yanagihara, A. (1989). Teaching elementary students to use word-part clues. *The Reading Teacher*, 42, 302–308.

Williams, J. P. (2005). Instruction in reading comprehension for primary-grade students: A focus on text structure. *The Journal of Special Education*, 39, 6–18.

Williams, J. A. (2010). Taking on the role of questioner: Revisiting reciprocal teaching. *The Reading Teacher*, 64, 278–281.

Wilson, N. S., Grisham, D. L., and Smetana, L. (2009). Investigating content area teachers' understanding of a content literacy framework: A yearlong professional development initiative. *Journal of Adolescent & Adult Literacy*, 52, 708–718.

Wolfe, M. B. W., and Mienko, J. A. (2007). Learning and memory of factual content from narrative and expository text. *British Journal of Educational Psychology*, 77, 541–564.