CENTER ON INSTRUCTION

ACADEMIC LITERACY INSTRUCTION FOR ADOLESCENTS

A Guidance Document from the Center on Instruction

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OVERVIEW

This document was prepared to assist literacy specialists in the national Regional Comprehensive Center network as they work with states to improve educational policy and practice in the area of adolescent literacy. It comprises three major parts:

PART ONE:

Improving academic literacy instruction for students in grades 4-12. Based on current research in adolescent literacy, this part discusses recommendations to improve literacy instruction in the content areas (e.g., science, social studies, history, literature), instructional recommendations for English language learners, and critical elements of instruction for special reading classes with struggling readers. It addresses three critical goals for academic literacy instruction with adolescents: 1) to improve overall levels of reading proficiency; 2) to (at least) maintain grade level reading skills from the end of third grade through high school; and, 3) to accelerate the reading development of students reading below grade level.

PART TWO:

Advice from experts about improving academic literacy instruction for adolescents. Eight experts with extensive experience conducting research on adolescent literacy were asked to respond to four questions about methods for improving adolescent literacy from the perspective of school- and state-level policy recommendations. They were asked to address both literacy instruction in the content areas and recommendations for struggling readers; they were also asked to recommend additional readings related to these questions. An annotated bibliography of their responses is included.

PART THREE:

Examples of state activities in support of improved adolescent literacy instruction. This part describes specific activities four states have adopted to improve adolescent literacy, placing the targeted activities in the broader context of each state's efforts to support improved reading instruction. Contact information for each state is included.

ACKNOWLEDGEMENTS

IMPROVING ACADEMIC LITERACY INSTRUCTION FOR STUDENTS IN GRADES 4–12

Introduction

Purpose and scope

This section presents research-based information on essential instructional practices to support adolescents' growth in academic literacy. It assumes more than a beginning level of familiarity with literacy and literacy concepts and is based on research in two areas: (1) the nature of reading and reading comprehension in adolescents and (2) the types of instruction that lead to improvements in reading comprehension among adolescents. Although the research specific to adolescent literacy is not as extensive as that available for beginning readers (National Institute of Child Health and Human Development, 2000; Snow, Burns, & Griffin, 1998), if what we currently know about literacy instruction for adolescents were more broadly applied in practice, there is little doubt that levels of adolescent literacy would improve. As a recent influential document reflecting a consensus among eminent researchers in this area states:

> *Enough is already known about adolescent literacy—both the nature of the problems of struggling readers and the types of interventions and approaches to address these needs—in order to act immediately on a broad scale. (Biancarosa & Snow, 2006, p. 10)*

Because of the variety and complexity of issues that affect current levels of reading proficiency among adolescents, significant improvements will be achieved only through a comprehensive effort involving changes in state- and district-level policies, improved assessments, more efficient school organization, more involved and effective leadership, and extensive professional development for all leaders and teachers. A discussion of these broader elements is beyond the scope of this document, but they are well outlined in four recent, widely available documents:

- *Creating a culture of literacy: A guide for middle and high school principals.* National Association of Secondary School Principals (2005).
- *Reading at risk: How states can respond to the crisis in adolescent literacy.* National Association of State Boards of Education (2005).
- *Reading next: A vision for action and research in middle and high school literacy.* Alliance for Excellent Education (2006).
- *Reading to achieve: A governor's guide to adolescent literacy.* National Governors Association Center for Best Practices (2005).

In contrast to those more broadly focused publications, this document provides direction for improving classroom instruction for all students and intervention instruction for struggling readers. These recommendations should apply to any state-, district-, or school-level effort to improve adolescent literacy outcomes.

While we acknowledge that implementing and sustaining these instructional practices will require improvements in many areas of school infrastructure and practice, we also believe that a clear understanding of the kinds of necessary instructional improvements is essential for states, districts, or schools developing comprehensive plans. The information here should be helpful in focusing on the instructional elements of a comprehensive plan for improving adolescents' reading proficiency.

A focus on academic literacy in adolescents

In the research and policy literature, the term *adolescent literacy* encompasses both *more than* just reading and reading in *many and varied* forms. As Donna Alvermann (2001a) states,

> *The privileging of one form of literacy (academic literacy) over multiple other forms (e.g., computer, visual, graphic, and scientific literacies) has been criticized for ignoring the fact that different texts and social contexts (reading for whom, with what purpose) require different reading skills. (p. 4)*

Because our ultimate purpose here is to support states, districts, and schools in their efforts to improve reading outcomes as measured by state accountability tests, we focus on methods to improve academic literacy outcomes. We acknowledge that *adolescent literacy*, as it is often used in the research

literature, extends significantly beyond the reading skills important to success in school contexts, and that students may show literacy skills outside of school that exceed, or seem inconsistent with, those they typically manifest in school settings (Alvermann, 2001b; Moje, 2000).

We also acknowledge that most definitions of *literacy* typically include writing as well as reading. However, because of the limits of our own expertise, as well as our desire to limit this document's size, we have chosen to focus on the part of academic literacy concerned with reading, rather than the full range of skills usually included under the concept of *literacy*. Thus we discuss writing only as it relates to the improvement of reading skills, and not as an object of instruction itself. For an excellent summary of current research on writing instruction, the reader is referred to the recent document, *Writing next: Effective strategies to improve writing of adolescents in middle and high schools,* by Steve Graham and Dolores Perin and published by the Alliance for Excellent Education.

Academic literacy is usually defined as the kind of reading proficiency required to construct the meaning of content-area texts and literature encountered in school. It also encompasses the kind of reading proficiencies typically assessed on state-level accountability measures, such as the ability to make inferences from text, to learn new vocabulary from context, to link ideas across texts, and to identify and summarize the most important ideas or content within a text. Notice that the definition of academic literacy includes not only the ability to read text for initial understanding but also the ability to think about its meaning in order to answer questions that may require the student to make inferences or draw conclusions.

Our definition of academic literacy also includes the ability to learn from text, in the sense that full comprehension of text meaning usually results in new understandings or new learning. However, our definition does not include extended study strategies and practices that students might use to commit specific material to memory in preparation for a test.

Given this definition of academic literacy, it is clear that improvements should produce two broad outcomes. First, improvements in academic literacy should enable students to acquire more knowledge and understanding from their content-area classes: as students' ability to construct the meaning of complex text improves, so too will their content-area learning improve, other things being equal. Further, students should be able to demonstrate their

deeper understanding of text by being able to respond correctly to more complex questions about its content and meaning. Second, student performance on state-level accountability measures in reading and on the reading portion of the National Assessment of Educational Progress (NAEP) should improve. All of these tests assess the student's ability to understand and think productively about the meaning of expository text and literature. The fact that long-term NAEP results in reading for 13- and 17-year-olds have changed very little over the last 30 years (Perie, Moran, & Lutkus, 2005) is some indication of the challenges we face in striving to improve academic literacy among adolescents.

Reading growth is often divided into two broad stages of "learning to read" and "reading to learn" (Chall, 1996). This distinction implies that learning new reading skills may end after an initial period of instruction, with reading then becoming a tool in the service of the student's broad education. While reading does become an increasingly important tool for helping students to expand their knowledge of science, history, mathematics, literature, and other subjects, learning to read hardly comes to an abrupt halt at the end of third grade. Our current understanding of reading growth indicates that students must continue to learn many new things, and acquire many additional skills, in order to maintain reading proficiency as they move from elementary to middle and high school. If they do not acquire the new skills specific to reading after the initial period of learning to read, they will not leave high school as proficient readers.

For this document, we define the period of adolescent literacy development as extending from the 4th through the 12th grades. In early elementary school (grades K–3) there is usually a clear focus on reading instruction within a well-defined instructional block, but after third grade, reading instruction tends to become more diffuse, with emphasis shifting to learning in the content areas of science, mathematics, social studies, history, and so on. Thus, our concern is with improving instruction in reading after third grade in order to accomplish the goals for adolescent literacy that we outline in the following section. However, the structure of schools and the nature of the students differ in very important ways across this age span, so actual models or methods for organizing and delivering essential instruction may vary.

Three goals for improving academic literacy in adolescents
A comprehensive effort to improve instruction in academic literacy for adolescents should:

1. Increase all students' overall levels of reading proficiency in order to help them better prepare for increasing demands for high levels of literacy in postsecondary education and the workplace. Evidence that current average reading levels of students graduating from high school are insufficient to meet postsecondary literacy demands (Pennsylvania Department of Education, 2004; Williamson, 2004) documents the need for serious work toward this goal.

2. Ensure students who have achieved grade-level reading standards by the end of 3rd grade continue to meet increasingly difficult standards in middle and high school. In Florida, for example, spring 2006 test results showed that 75% of students were able to meet the state grade-level reading standards at the end of 3rd grade, while only 61% could in 7th grade, and just 32% could in 10th grade. The need to help students at least maintain their relative levels of reading proficiency as they move into adolescence is also documented in cross-national literacy comparisons. Literacy levels of students in the U.S. compare much more favorably with other countries during the elementary school years than they do during high school (Lemke et al., 2001; Ogle et al., 2003).

3. Help students who are reading below grade-level standards acquire the skills and knowledge required to meet those standards. This will require instruction sufficiently powerful to *accelerate* reading development dramatically so that students make *more* than one year's progress during one year of school. Because students who are poor readers in sixth or ninth grade have missed massive amounts of reading practice during the years they have been struggling readers (Anderson, Wilson, & Fielding, 1988), they are usually behind their grade-level peers on a broad range of knowledge and skills required for proficient reading (Cunningham & Stanovich, 1998). To "close the reading gap" with average readers at their grade level will require instruction that enables them to improve *more rapidly* than average readers for a sustained period of time. One year's growth for one year of instruction is not sufficient for these readers: They must make *multiple years' growth* for each year of instruction if they are to eventually achieve grade-level standards in reading.

The focus of instruction for academic literacy with adolescents

In considering the kinds of instruction that will be required to meet the three goals for adolescent literacy improvement outlined above, it is useful to ask:

What types of knowledge and skill must students acquire, or continue to develop, after third grade in order to maintain and accelerate their development of proficiency in academic literacy?

We begin by identifying areas of student knowledge and skill that must continue to grow from 4th to 12th grades in order to maintain at least grade-level reading skills across that developmental span. Instructional improvements that affect most of these areas may be required to help many students maintain grade-level reading skills through 12th grade, and will almost certainly be required in order to increase overall proficiency levels in grade-level and above-grade-level students. While some students with serious reading difficulties will probably require instructional support in areas beyond those described below (e.g., word-identification strategies), they will also require high-quality instruction and significant practice in the areas described below if they are to close the gap toward grade-level reading skills. The six essential areas of growth in knowledge, reading, and thinking skills for grades 4 to 12 are *reading fluency, vocabulary knowledge, content knowledge, higher-level reasoning and thinking skills, cognitive strategies specific to reading comprehension,* and *motivation and engagement.* They are outlined in detail below.

- ***Reading fluency.*** Although absolute reading rates do not increase substantially after about sixth grade (Tindal, Hasbrouck, & Jones, 2005), students must continue to increase the range of words they can recognize at a single glance (sight words) in order to continue to meet grade-level expectations for reading fluency (Torgesen & Hudson, 2006). Normally, students continue to increase their store of sight words as they expand their range of reading after elementary school, but if they don't maintain relatively high levels of reading practice, they can fall behind. Each year, students must add large numbers of words to their sight vocabulary in order to maintain their ability to read grade-level text fluently, because the range of unusual, or infrequent, words in grade-level text increases annually. Although individual differences in reading fluency contribute less to variations in reading comprehension at higher grade levels than at

elementary levels (Schatschneider et al., 2004), reading fluency continues to explain substantial variance on reading comprehension tests, even in high school.

For reading practice to contribute to growth in reading fluency, students must be able to identify the new words they encounter in text (words they cannot recognize at a single glance) with reasonable accuracy when they first encounter them (Ehri, 2002). The most efficient way for readers to identify an unknown word in text is to analyze its phonological or morphological parts to link them to a known word that is part of their general vocabulary, and to confirm their guess by considering whether the newly identified word makes sense in the context of what they are reading (Snow, Burns, & Griffin, 1998). In order to perform the initial analysis of increasingly complex multisyllabic words in middle and high school text, students must have a broad repertoire of word-analysis skills (Henry, 1993). However, it is not clear from current research how much these advanced word-analysis skills must be explicitly taught to grade-level readers after third grade. While some recent research (Torgesen, 2005) indicates that students who continue to struggle with basic word-analysis (phonemic decoding) skills after third grade can profit from explicit and systematic instruction, it is less clear how much instruction in higher-level word-analysis skills students who can meet reading fluency benchmarks need.

- **_Vocabulary knowledge._** Because the range of vocabulary in text grows rapidly after third grade (Anderson & Nagy, 1992), students must continue to expand their knowledge of word meanings in order to construct the meaning of what they are reading. Vocabulary and verbal knowledge play increasingly important roles in supporting reading comprehension as students move from elementary to middle to high school (Schatschneider et al., 2004).

  Expanding students' word knowledge (vocabulary) after third grade needs to be supported in two principal ways (Graves, 2000). First, students learn the meanings of many new words by inferring their meaning from how they are used in text and from their knowledge of word parts (morphemes). In fact, there is reasonable evidence that most of the expansion of students' vocabulary after third grade comes from their exposure to new words during reading (Cunningham & Stanovich, 1998).

Current research also suggests that explicit and systematic instruction in carefully selected new vocabulary should also be part of efforts to increase adolescent reading proficiency (Beck, McKeown, & Kucan, 2002; Stahl & Fairbanks, 1986). This is particularly true for struggling readers, who are often substantially behind in vocabulary growth.

- ***Domain-specific and domain-general content knowledge.*** There is strong evidence that knowledge related to the content of text being read leads to better reading comprehension (Hirsch, 2006; Kintsch, 1998; McNamara & Kintsch, 1996; Wolfe et al., 1998). Students are expected to learn from increasingly technical expository texts during adolescence, and their knowledge base must continue to grow in order to meet the demands of this text. In order to increase students' depth of understanding and to increase their knowledge base efficiently, texts that students encounter in the higher grades are written using increasingly significant assumptions about what students already know. Thus, students who do not keep pace with the increasing demands content-area texts place on prior knowledge will fall further and further behind in their ability to construct the meaning of the text.

  As with vocabulary, or word knowledge, students acquire conceptual knowledge and understanding through both broad and deep reading and through explicit instruction from content-area teachers. To the extent that students read deeply with understanding, their knowledge in critical content areas will grow. In a similar vein, as content-area teachers in science, mathematics, history, literature, and other subjects increase the power of their instruction to help students acquire critical knowledge and understanding in various domains, students' ability to read proficiently in those domains will increase (Recht & Leslie, 1988). Students who cannot read grade-level text proficiently especially need more powerful instruction from their content-area teachers because they are less able to acquire critical conceptual and factual knowledge from the texts themselves.

- ***Higher-level reasoning and thinking skills.*** Because of the increasing complexity of text students encounter as they move into middle and high school, and also because of the increasingly sophisticated responses they are expected to make to what they read, students must continue to grow in their ability to make inferences, draw conclusions, and engage in critical thinking (Pressley, 2000). Most state-level accountability measures in

reading place increasing demands on students' ability to engage in higher-level thinking processes to respond to test questions (e.g., Florida Department of Education, 2006). Students' ability to think deeply about what they are reading must be stimulated and supported by their classroom experiences between the 4th and 12th grades.

- ***Cognitive strategies that can be applied specifically to enhance reading comprehension.*** Studies of more and less effective readers both during and beyond the initial stages of learning to read have repeatedly shown that proficient readers are much more likely to use a variety of purposeful strategies to enhance their comprehension (National Reading Panel, 2000; Perfetti, Landi, & Oakhill, 2005). These strategies include self-directed activities such as rereading in order to resolve confusion, paraphrasing to enhance memory and understanding, making explicit connections from the text to prior knowledge and to other parts of the text, underlining and note taking, and visualizing relationships and events in the text. Good readers more actively monitor their comprehension as they are reading, and they use their knowledge of comprehension strategies to improve their understanding or to repair it when it breaks down (Pressley, 2000). As text becomes more complicated in middle and high school, and as the demands for learning from text (particularly expository text) increase, students must become more sophisticated in both the range and the flexibility of their reading comprehension strategies in order to maintain or accelerate their level of reading proficiency (Duke & Pearson, 2002). One of the most common suggestions from the research literature on adolescent literacy is that more effective instruction and support in the use of multiple, coordinated reading comprehension strategies is required in order to improve overall levels of literacy in older students (Biancarosa & Snow, 2006).

- ***Motivation and engagement.*** There is strong evidence that motivation and interest in reading decline after the early elementary grades; this is particularly true for students who have struggled during the initial stages of learning to read (Eccles, Wigfield, Harold, & Blumenfeld, 1993; McKenna, Kear, & Ellsworth, 1995). This decline in motivation has two unfortunate consequences, both of which have a direct impact on the growth of reading proficiency in adolescents. The first is that students

with low motivation and interest in reading do not read as much as students with stronger motivation (Baker & Wigfield, 1995; Guthrie, Wigfield, Metsala, & Cox, 1999; Wigfield & Guthrie, 1997). Lack of reading practice or experience affects the maintenance of fluency (Torgesen & Hudson, 2006), the growth of vocabulary and content knowledge (Cunningham & Stanovich, 1998), and the development of more sophisticated reading strategies (Pressley, 2000).

The second consequence is that students who are less motivated to read are usually less *engaged* with their text while they are reading. According to researchers who have studied the concept of engagement extensively, "Engagement in reading refers to interaction with text that is simultaneously motivated and strategic" (Guthrie, Wigfield et al., 2004, p. 403). Students who are strongly motivated to gain understanding from what they are reading are more likely to use a variety of effortful strategies to gain that understanding. In the researchers' words, "motivated students usually want to understand text content fully and therefore, process information deeply. As they *read frequently with these cognitive purposes,* motivated students gain in reading comprehension proficiency" (p. 403, italics added).

For reasons outlined above, incorporating a number of research-based strategies for enhancing adolescents' motivation and engagement in reading and completing reading-based assignments must be part of any comprehensive plan for improving levels of academic literacy in adolescents.

These six areas of knowledge, skill, and attitude that must continue to develop in all adolescent students (or accelerate in struggling readers) if they are to leave high school as proficient readers also happen to be the major kinds of skill and knowledge that contribute to individual differences in adolescent reading comprehension (Perfetti et al., 2005; Pressley, 2000). That is, a list of the major conclusions from research about differences among students that contribute directly to differences in their performance on reading comprehension tests in middle and high school would include:

1. fluency of text reading;

2. vocabulary, or the breadth and depth of knowledge about the meaning of words;

3. background, or prior knowledge related to the content of the text being read;

4. higher-level reasoning and thinking skills;

5. active and flexible use of reading strategies to enhance comprehension; and

6. motivation and engagement for understanding and learning from text.

We are not suggesting that this list of factors that influence reading comprehension in adolescent readers is exhaustive. It does not consider factors in the texts themselves that render them more or less comprehensible (McNamara & Kintsch, 1996). Nor does it explicitly mention knowledge of text structure as an aid to reading comprehension, although there is evidence that students with greater knowledge of text structure can use that knowledge productively to increase their comprehension of text (Armbruster, Anderson, & Ostertag, 1987; Englert & Hiebert, 1984; Leon & Carretero, 1995). Rather, this list is offered as a heuristic for thinking about the kind of instruction that will be required to improve levels of adolescent literacy significantly.

It suggests that in order to meet the three goals for adolescent literacy outlined above, schools and classrooms will need to improve their instructional practices very broadly in order to have a significant impact on levels of their students' academic literacy. We will need to improve our students' knowledge not only of words but also of concepts and facts. Further, we will need to help students learn how to reason more effectively from the information they have to make inferences, draw conclusions, and perform critical analyses. We will need to teach them how to read more strategically and to monitor their comprehension so that they can actively repair it when it breaks down. Finally, we must ensure that every student has sufficient word-reading skills to identify accurately, and with reasonable fluency, the words in the texts they are reading. Even technically sound instructional techniques are unlikely to succeed unless we can ensure that, most of the time, students are engaged and motivated to understand what they read. Others have said the same thing this way:

Ensuring adequate ongoing literacy development for all students in the middle and high school years is a more challenging task than ensuring excellent reading education in the primary grades, for two reasons: first, secondary school literacy skills are more complex, more embedded in subject matters, and more multiply determined; second, adolescents are not as universally motivated to read better or as

interested in school-based reading as kindergartners. (Biancarosa & Snow, 2006, p. 2)

A practical implication of this statement and of the foregoing discussion of adolescent literacy factors is that *all teachers* in every elementary, middle, and high school must be involved, and we must also have efficient school-level systems in order to ensure that the instructional needs of all students are met. For example, teachers of science, mathematics, history, literature, and so on must improve the way they teach their subject matter so that students not only learn the content more deeply but learn to read content-area texts more strategically and become more proficient in thinking about the content. The need to involve content-area teachers in this effort is simply common sense. Middle and high school students spend most of their time in content-area classes and must learn to read expository, informational, content-area texts with greater proficiency. Although reading strategies might be taught explicitly in a designated "reading support" class, students are unlikely to generalize them broadly to content areas unless teachers also explicitly support and elaborate the strategies' use with content-area texts.

Efficient school-level systems are required because it is not reasonable to expect content-area teachers to teach basic reading skills to students who are reading significantly below grade level. It is unreasonable for several reasons. First, teaching word-analysis strategies to middle and high school students who are not proficient in their use requires special knowledge and skills that are far removed from the training and interests of content-area teachers (Moats, 1999). Second, students reading below grade level require more intensive instruction over a significant period of time to make up the large knowledge and skill differences between them and students reading at grade level (Torgesen, 2004). Third, many students, particularly those with serious reading difficulties, require special, explicit instruction and extended practice opportunities in order to master new reading strategies or significantly improve their word-level reading skills. Given their responsibilities to teach important content-area knowledge, content-area teachers simply cannot provide this basic support to struggling readers. However, if a skilled reading teacher effectively teaches reading comprehension strategies and content-area teachers reinforce and elaborate on their use in class, this will enhance both students' initial learning and its generalization to other settings.

With these considerations in mind, the rest of Part One is organized as follows. We first describe five instructional areas that should be the focus of improvement for all middle and high school content-area teachers—and for late-elementary (grades four and five) teachers, although their instructional responsibilities are often broader than those of content-area teachers in the later grades. Following the discussion of instructional improvements for content-area teachers, we outline the essential elements of instruction for struggling readers after the initial period of learning to read. Although the ultimate goal of elementary school instruction in the United States is for all students to meet reasonable standards of reading proficiency by the end of the third grade, we are far from this goal at the present (Perie, Grigg, & Donahue, 2005), particularly with poor and minority students. Finally, we discuss some special instructional considerations for students who are classified as English language learners or who are not yet proficient English speakers.

IMPROVING LITERACY-RELATED INSTRUCTION IN THE CONTENT AREAS

Introduction

The five recommendations made here are not based on an exhaustive review or a meta-analysis of all the instructional research pertaining to adolescent literacy. Rather, they are based on a review and analysis of a number of recent, more or less comprehensive documents produced by scholars and organizations as they considered the research literature on adolescent literacy. These documents reviewed not only instructional research but also research to identify the major factors that contribute to academic literacy in older students. We identified areas of instructional improvement to address in this document because they were recurring themes in the instructional literature and also because they align with current understandings of the major factors that contribute to adolescents' growth in academic literacy. Once we identified the five, we conducted an exhaustive literature search to find several good examples of research in each area. The research examples we provide for each area document the kinds of evidence available for each instructional recommendation. We include them to give literacy specialists a concrete feel for the level and kinds of evidence on which each recommendation is based. We consulted the following review documents to identify areas for instructional improvement:

- *Adolescent literacy: A position statement.* International Reading Association (1999).

- *Adolescent literacy and the achievement gap: What do we know and where do we go from here?* Carnegie Corporation of New York (2003).

- *Adolescent literacy resources: Linking research and practice.* Northeast and Islands Regional Educational Laboratory at Brown University (2002).

- *Adolescents and literacy: Reading for the 21st century.* Alliance for Excellent Education (2003).

- *Effective literacy instruction for adolescents.* National Reading Conference (2001).

- *Reading at risk: How states can respond to the crisis in adolescent literacy.* National Association of State Boards of Education (2005).

- *Reading for understanding: Toward a research and development program in reading comprehension.* RAND Corporation (2002).

- *Reading next: A vision for action and research in middle and high school literacy.* Alliance for Excellent Education (2006).

- *Reading to achieve: A governor's guide to adolescent literacy.* National Governors Association Center for Best Practices (2005).

- *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction.* Report of the National Reading Panel. National Institute of Child Health and Human Development (2000).

- *Ten years of research on adolescent literacy: 1994–2004: A review.* Learning Point Associates (2005).

- What should comprehension instruction be the instruction of? *Handbook of reading research.* Mahwah, NJ: Erlbaum (2000).

It is important to understand from the outset that the five areas of instructional improvement we identify in this document are not an exhaustive list. For example, *Reading Next* (Biancarosa & Snow, 2006) identifies 15 "elements of effective adolescent literacy programs," of which eight specifically concern instructional recommendations for content-area teachers. Our goal was to synthesize the documents listed above and identify a limited number of high-leverage improvements—those that seem most central to the goal of improving adolescent literacy and those most likely to produce significant long-term improvements if they are widely and effectively implemented.

The one recommendation consistently made in the documents listed above, but which we do not elaborate on in this document, is for a closer connection between reading and writing across the curriculum. In some papers, the emphasis was on more intensive and higher-quality instruction in writing in order to improve adolescents' writing skills directly because writing was part of

the definition of adolescent literacy guiding the paper (Biancarosa & Snow, 2006). Others emphasized research showing that writing can be used to support improved reading comprehension. For example, one of three main themes in *Reading at Risk: How States Can Respond to the Crisis in Adolescent Literacy* from the National Association of State Boards of Education (2005) recommends connecting reading and writing activities across the curriculum.

As will be seen when examining several of the studies considered in this paper, writing activities are often used as a way for students to express their understanding of what they read, and discussing these written products can be an important way for students to receive feedback on their responses to text. We would recommend making close connections between reading and writing activities as one important method, or vehicle, for implementing the core recommendations we discuss in this document. The five areas of instructional focus and improvement we will address are:

- increasing the amount of explicit instruction in and support for the use of effective comprehension strategies throughout the school day;

- increasing the amount and quality of open, sustained discussion of reading content;

- setting and maintaining high standards for the level of text, conversation, questions, and vocabulary that are used in discussions and assignments;

- increasing the use of a variety of practices to increase motivation and engagement with reading; and

- increasing the use of specific instructional strategies that lead to greater learning of essential content knowledge by all students.

Again, we have not included a recommendation for explicit writing instruction, not because we don't recognize that improvements in writing are important, and that such improvements will require explicit instruction and support, but rather because this report focuses on reading. When writing is discussed, it is discussed instrumentally.

For each of our five recommendations for instruction, we first introduce the recommendation with a brief discussion of background information, and then we describe three to five empirical studies that provide evidence for the recommendation. As stated earlier, our goal in discussing individual studies is to

give the reader concrete examples of the kinds of evidence that support our recommendations in a given area. We cannot provide enough description in this document to enable a teacher, or a school, to implement each instructional recommendation with fidelity, but we do describe the types of instructional practices that have been studied and the types of outcomes that have been used to estimate their effectiveness. Following descriptions of individual studies, we draw conclusions, discuss the limitations of the research, and provide references for further study.

Recommendation 1:
Provide Explicit Instruction and Supportive Practice in the Use of Effective Comprehension Strategies Throughout the School Day

Increasing explicit instruction and support for the use of comprehension strategies is perhaps the most widely cited current recommendation for improving reading comprehension in all students (National Institute of Child Health and Human Development, 2000), particularly for those who struggle with comprehension (Gersten, Fuchs, Williams, & Baker, 2001). It is based on three kinds of evidence: (1) proficient readers monitor their comprehension more actively and effectively than less proficient readers do (Pressley, 2000); (2) proficient readers are more likely to use a variety of active cognitive strategies to enhance their comprehension and repair it when it breaks down (Nation, 2005); and (3) explicit instruction along with supported, scaffolded practice in the use of multiple comprehension strategies produce consistent improvements in students' reading comprehension (Rosenshine & Meister, 1994; Rosenshine, Meister, & Chapman, 1996).

In fact, in the *Report of the National Reading Panel* (2000), instruction in comprehension strategies is seen as the core idea, the essence, of comprehension instruction: "The idea behind explicit instruction of text comprehension is that comprehension can be improved by teaching students to use specific cognitive strategies or to reason strategically when they encounter barriers to comprehension when reading" (p. 4-39). A comprehension strategy can be defined as any activity a student might engage in (including mental activities, conversations with others, or consultation of outside references) to enhance comprehension or repair it when it breaks down. Examples of

effective comprehension strategies researchers have studied include:

- active comprehension monitoring that leads to the use of fix-up strategies when comprehension fails;
- use of graphic and semantic organizers, including story maps;
- question generation;
- summarization and paraphrasing; and
- selective rereading.

Evidence for the utility of explicit instruction in comprehension strategies has been found not only in controlled experimental studies but also in benchmark studies of more and less effective schools and teachers. For example, Langer's (2001) influential study of successful and less successful middle and high schools noted that effective teachers were much more likely than less effective teachers to explicitly teach students strategies for accomplishing their reading and writing tasks: "All of the more successful teachers overtly taught their students strategies for organizing their thoughts and completing tasks, whereas only 17% of the less successful teachers did so" (p. 868).

The reading comprehension strategies that have been studied most broadly to this point have general applicability across content areas and genres. However, an emerging consensus also identifies comprehension strategies that are content-area-specific. These strategies involve particular ways of making interpretations, documenting evidence, or framing arguments that are specific to a given content area. For instance, work in science (Norris & Phillips, 1994), social studies (Mosborg, 2002; Perfetti, Britt, & Georgi, 1995), and math (Leong & Jerred, 2001) demonstrates that reading and writing in these content areas make unique demands and that instruction in strategies and knowledge specific to each content area can improve comprehension and learning.

STUDIES

We now describe five of the strongest experimental studies we were able to identify concerning the effectiveness of explicitly teaching comprehension strategies to students in late-elementary, middle, and high school.

Dole, J. A., Brown, K. J., & Trathen, W. (1996). The effects of strategy instruction on the comprehension performance of at-risk students. *Reading Research Quarterly, 31,* 62–88.

Researchers examined the effects of three types of teacher-led instruction on students' comprehension of narrative text (stories). One group of students received instruction and supported practice in using several strategies to improve their comprehension (Strategy); another group received instruction in specific knowledge needed for comprehension of each story (Story content); and a third received traditional instruction as outlined in the reading basal from which the stories were taken (Basal).

The students were fifth and sixth graders attending a year-round elementary school that served students from predominantly low–socioeconomic status (SES) and minority families. Judged by their prior year's performance on the Stanford Achievement Test, the students had a broad range of reading proficiency, but 51% scored in the lowest quartile, and average performance was at the 25th percentile. Sixty-seven percent were eligible for free or reduced-price lunch, and 45% came from minority populations. The students were randomly assigned to one of the three instructional conditions.

Students in all groups were instructed in classroom-sized groups (approximately 22 students) by three teachers who each taught in all conditions. All were experienced teachers, and they followed carefully scripted lesson plans for each type of instruction. Instruction was delivered in the first 50-minute period of the day, four days a week, for five weeks.

In the strategy instruction condition, students were taught how to make predictions about an upcoming selection, how to identify main characters, how to identify the story's central problem, and how to identify a problem's resolution. They were also told why these strategies were valuable and how to use them flexibly. Students were also taught to jot down key words and phrases using a story map provided by the teacher. During each period, the teacher provided some instruction and students read a story and answered practice comprehension questions. Initially, the teachers modeled each strategy and showed how to use it with the story map, then gradually shifted responsibility for using the strategy to the students, first having student leaders model using the strategies, then having students work in small groups, then pairs, and finally on their own. Throughout the process, the teacher acted as a coach, providing students with hints, reminders, and cues. Although new

stories were used each day, the strategy instruction was cumulative and repetitive, and students' knowledge and control of the strategies grew over the five-week treatment period.

Outcomes were tested at the end of the intervention and at seven weeks following. For these tests, the students read one story *(the instructed story),* after receiving instructional supports for the story that were typical of each condition, and then answered 10 open-ended questions, scored by a rubric the researchers developed. Thus, the students in the story knowledge condition first had their teacher introduce critical knowledge for understanding the story, and then they read the story and answered comprehension questions. The next day, the students read another story *(the independent story)*, without any prior instruction from their teacher, and answered 10 comprehension questions. The study's most important finding was that the students in all conditions performed essentially the same on the instructed passages, but the students in the strategy condition did significantly better than students in the other groups on the independent stories. These findings are illustrated graphically below, with comprehension scores derived from the scoring rubric plotted on the vertical axis.
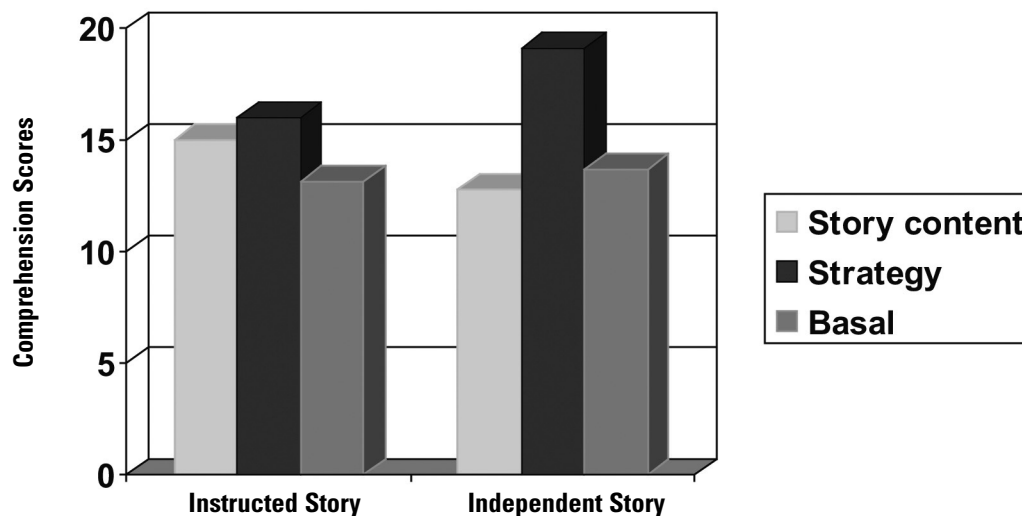
The authors concluded that the study "indicated that at-risk readers who received strategy instruction made superior gains in comprehension performance over their peers who received story content or traditional basal instruction" (p. 72). Although the students performed essentially the same on

stories they read after the teacher introduced the story and provided information about its content (in the basal and story content conditions), students in the strategy condition were able to generalize the self-controlled strategies they had learned during the instructional phase to enhance their performance when the teacher was not there to provide support.

Klingner, J. K., Vaughn, S., & Schumm, J. S. (1998). Collaborative strategic reading during social studies in heterogeneous fourth-grade classrooms. *The Elementary School Journal, 99,* 3–22.

The authors of this study examined "collaborative strategic reading," a method of comprehension strategy instruction that can be used with classrooms that are ethnically, socioeconomically, and academically diverse. The study was conducted in five fourth-grade classrooms in a school whose student population was 68% Hispanic, 24% white, 7% black, and 1% Asian or American Indian.

Students in the five classes were given a test of word-reading accuracy, and then the two classes with the highest averages were randomly assigned to the treatment or control group. The classes with the two lowest averages were then similarly assigned, and the intermediate class was assigned to the treatment group. There were 85 students in the classrooms that received the strategy instruction, and 56 students in the control classes. The mean percentile rank on the reading accuracy test was 39.2 for the intervention condition and 38.5 for the control condition.

Students in both the instructional and control conditions learned the same content, a social studies topic. Each group received 11 45-minute classroom lessons. Both groups were assigned the same homework activity. Members of the research team provided all the instruction in this study.

Students in the instructional condition were taught four reading strategies and given extended opportunities to practice these strategies while learning content in cooperative learning groups of five or six students. The strategies were (1) *preview*—look at the title and headings and make predictions about the passage while thinking about what you already know on the topic; (2) *click and clunk*—monitor comprehension by identifying difficult words and concepts and using fix-up strategies when the text does not make sense; (3) *get the gist*—restate the most important idea from a paragraph; and (4) *wrap up*—summarize what has been learned and ask some questions like those a teacher might ask.

The teacher introduced and modeled the strategies on the first three days, using the social studies text as a basis for the instruction, and also used a think-aloud procedure to help students understand *why, how,* and *when* the strategies were beneficial. From the fourth day on, students worked in small groups to learn the textbook content while they practiced using the strategies. A group leader, rotated each day, led the discussion, using the strategies to help the students understand and learn from the text. The authors observed that students generated a great deal of high-quality discussion of the text as they applied the strategies in their groups. The teacher also monitored the cooperative groups and provided additional instruction and support when necessary.

Students in the control group were not taught the reading comprehension strategies; rather, they were directly taught the content in the social studies unit. The students read the same content as those in the strategies groups, and the teacher led class discussion and provided additional instruction related to the content.

The intervention effect was assessed with the Gates-MacGinitie test of reading comprehension, administered both before and after the intervention. At the conclusion of the instruction, the students were also administered a 50-question test on the unit's content. The pretest was used to control for small preexisting differences on the Gates-MacGinitie between groups. The analysis showed that the students who received the strategy instruction improved significantly more in general reading comprehension than those who received the traditional instruction. The strategies group improved from a raw score of 21.7 on the pretest to 24.7 on the posttest. Analogous improvement for students in the control group was 20.8 to 21.2. On the test that measured how well the students learned the content, the strategies group achieved a score of 25.1, while the control group obtained an average score of 23.9; neither was reliably different from the other.

The authors concluded that the intervention was more successful than traditional ways of teaching in improving general reading comprehension; at the same time, the students in the strategies condition learned the basic content of the social studies unit just as well as the students who had received more teacher-guided instruction on the topic. Further, the authors' observations suggested that the cooperative learning format had successful drawn typically disengaged (lower-achieving) students into discussions, with resulting increases in their achievement.

Block, C. C. (1993). Strategy instruction in a literature-based reading program. *Elementary School Journal, 94,* 139–151.

In this study of a program to teach reading and thinking strategies, students received 16 lessons in strategy use in twice-weekly, 90-minute instructional sessions for 32 weeks. The total amount of strategy instruction and practice was approximately 96 hours spread across the school year.

Research assistants provided instruction in whole-class settings in three elementary schools that served a diverse student population. Among the three schools, the student population was roughly 32% Mexican American, 23% African American, 42% Anglo, and 3% Asian. Classes ranging from grades two to six in each school were randomly assigned to the control or experimental groups. In the control classrooms, the research assistants helped the classroom teacher offer lessons that did not contain strategy instruction.

Eight general categories of strategies were derived from an analysis of the research literature on reading and thinking strategies. The 16 lessons covered content in each category, focusing on things such as

- asking questions to eliminate confusion and misconceptions;

- rereading strategically to understand new meanings;

- recognizing reciprocity and learning how authors use imbalances to create plots;

- recognizing patterns in paragraphs and in the actions of literary characters;

- predicting to increase use of inference; and

- reasoning during reading by comparing and contrasting.

Each strategy lesson extended over several sessions and was divided into two parts. In the first part, the teacher explained and modeled the strategy, showed how it was used during reading, and then had an extended discussion with students to dispel misconceptions about its use during reading. Students were also introduced to a "thinking guide," with text and graphics that they could use while reading to remind themselves of steps in using the strategy. In the second part of each lesson, students selected something to read from the classroom library, chose their own objectives for implementing the strategy, and planned how they would demonstrate what they learned. Students worked independently and in small groups to accomplish their objectives and had many opportunities to discuss what they were learning with other students and with the teacher.

At the end of the instruction, all students took the Iowa Test of Basic Skills (ITBS). Students in the experimental group performed significantly better than students in the control classrooms on the tests of reading comprehension and reading vocabulary, but not on the test of English grammar. Two weeks after they took the ITBS, the students were asked to write an essay about important things they had learned that year. Students in the experimental group showed a significantly broader and deeper range of thinking strategies in their essays. In addition, students were given measures of self-esteem both before and after the study was conducted. Although the groups did not differ on the pretest, on the posttest the students who had received strategy instruction scored significantly higher than control students on a number of factors related to self-confidence.

Lysynchuk, L. M., Pressley, M., & Vye, N. J. (1990). Reciprocal teaching improves standardized reading-comprehension performance in poor comprehenders. *The Elementary School Journal, 90,* 469–484.

This study used the reciprocal teaching method developed by Palincsar and Brown (1984) to teach four reading comprehension strategies to groups of fourth and seventh graders who were reasonably proficient at word-reading accuracy but had previously performed poorly on a reading comprehension test. The strategies taught were (1) asking questions about meaning; (2) clarifying unknown words or phrases; (3) making passage summaries; and (4) predicting what would happen next using clues from the passage.

The students were all English-speaking Canadians; the fourth graders came from six different schools, while the seventh graders came from two middle schools. The 36 fourth graders and 36 seventh graders in the study were given a standardized reading comprehension test, then grouped into pairs based on their scores at each grade level, with one member of each pair randomly assigned to the group receiving strategy instruction and the other to the control group.

Students in both the reciprocal teaching and control groups were taught in small groups of three to five students in 50-minute sessions over 13 days. Three researchers acted as teachers; all the teachers worked with students in both the experimental and the control groups. Students in both groups read expository passages at their grade level during the training. Students in the control group read and discussed these passages for the same amount of time

as students in the experimental group, but they received no instruction in the use of comprehension strategies.

During the first four days of training in the reciprocal instruction groups (strategy training), the teacher explained the strategies to the students, then directly led the students in practicing their use on one of the expository passages. The teacher provided prompts and supports to help the students understand how to use the strategies effectively. On days 5 and 6, students read the passage aloud and took turns clarifying, questioning, summarizing, and predicting, with both the teacher and other students assisting when a student had difficulties. On days 7–13, students read increasingly lengthy parts of the passages silently while being encouraged to pause frequently during their reading to use the strategies to aid their comprehension. Students had many opportunities during these latter sessions to ask questions, seek clarification, and have the teacher or another student model strategies for them.

The most important finding from this study was that students who received strategy training using the reciprocal teaching method improved significantly more from pretest to posttest (10 percentile points) on the standardized measure of reading comprehension than did students in the control group (2 percentile points). This effect was found at both grade levels; a similar effect was found for the daily comprehension assessments that involved either summarizing passages or answering comprehension questions.

Alfassi, M. (2004). Reading to learn: Effects of combined strategy instruction on high school students. *Journal of Educational Research, 97*(4), 171–184.

This paper reports on two studies of the impact of instruction and practice in the use of reading comprehension strategies on the reading comprehension performance of high school students of average to above-average reading ability. The author was interested in determining whether strategy instruction could be effectively embedded in ongoing content-area classes, and whether it affected certain types of comprehension skills more than others.

In the first study, reading comprehension outcomes were examined in two intact freshman language arts classes. Within the standard 90-minute language arts block, the experimental class received 20 minutes of daily strategy instruction for 20 days, while the control class received traditional instruction. The classes were taught by two different teachers with comparable training and

experience. The teacher of the experimental class had received six hours of professional development in strategy instruction prior to the beginning of school.

Students received instruction in four comprehension strategies (questioning, summarizing, clarifying, and predicting) used in earlier studies of the reciprocal teaching method (Palincsar & Brown, 1984). In this study, both direct explanation (Duffy et al., 1987) and reciprocal teaching methods were used to provide strategy instruction and practice with text typically used in the classroom. Students were taught what the strategies were and how to use them through direct explanation and modeling from the teacher. Then they engaged in guided practice under teacher supervision; finally, the class was divided into small groups to support one another in using the strategies while reading course-related text. In this last phase, the teacher circulated among the groups, providing guidance and support.

Two outcome measures were given at both pretest and posttest. The experimenter-developed comprehension assessment involved four 400- to 600-word passages taken from textbooks for which 10 comprehension questions were developed. The other measure was the Gates-MacGinitie Reading Comprehension Test, a standardized measure of reading comprehension. Students in both classes performed similarly on the pretest measures, and no student performed below the 45th percentile on the standardized test.

When the measures were readministered at posttest, students in the experimental classroom performed significantly better than students in the control classroom on both the passage comprehension and the Gates-MacGinitie tests. Both groups improved their scores from pretest to posttest of passage comprehension, but the experimental group's improvement was significantly greater. In contrast, on the standardized measure, only the students who had received the strategy instruction improved their scores from pretest to posttest.

In the second study, Alfassi sought to determine whether strategy instruction had a greater impact on higher-level than lower-level comprehension skills. A group of 277 sophomore students enrolled in science, language arts, social studies, and mathematics classes received strategy instruction from their content-area teachers for approximately 20 minutes in each of four daily 90-minute instructional periods. This lasted for 20 days at the beginning of the year. Students received 3 additional days of instruction every two months, for a total of 9 additional days of instruction.

At the end of the year, the students took a passage comprehension test they had been pretested on at the beginning of the year. The test required them to read short passages taken from content-area text and respond to 10 short-answer questions without referring to the text. The questions either referred to information contained in the text (explicit questions) or required inferences from the text and integration with background knowledge (implicit questions). The finding of most interest was that students improved significantly more in their performance on the questions that required more complex information processing (implicit) than on questions that involved simple factual recall. Alfassi concluded from this pattern of results that strategy instruction of the type used in this study may be particularly beneficial for improving the performance of average high school students in situations that require making inferences from text and integrating textual information with preexisting knowledge.

CONCLUSIONS

Conclusions about strategy instruction for adolescent readers

Looking across experimental studies of the effectiveness of comprehension strategies, we found that several common features seem critical to the success of this type of instruction; these features are also noted in the *Report of the National Reading Panel* (NICHD, 2000).

1. Initial discussions that help students become more aware of their own cognitive processes and learn about strategies they can use to help increase their understanding of what they are reading. Such discussions help establish the purpose of the work the students will be doing to improve their comprehension.

2. Explicit instruction from the teacher about the particular strategies being learned, with frequent think-aloud demonstrations by the teacher to show how the strategy is used during reading. This instruction includes a discussion of *why* the strategy can be useful, *how* to do it, and *when* it is appropriate to use. Teacher modeling of strategy use is essential.

3. Extended opportunities for students to practice using the strategies in meaningful literacy activities. Sometimes this practice is structured as small-group activities that encourage student discussion of both the text's meaning and how they are using the strategy to help them understand;

sometimes it involves whole-class discussions. The purpose of this instruction and practice is to gradually transfer responsibility for selecting and using strategies from the teacher to the students.

Researchers have noted a number of important issues in implementing comprehension strategy instruction, including:

1. **Balance.** Finding a balance between content and strategy instruction that responds to the needs of all students is important. The ideal is to use strategy instruction as a vehicle for effective content teaching and learning. Klingner et al. (1998) provide at least one demonstration that it is possible to do this.

2. **Involvement.** Using small-group interactions effectively to increase the involvement of underachieving students and facilitate active discussion of both content and strategies is critical. Both Klingner et al. (1998) and Guthrie et al. (2004; reviewed on page 50 of this document) have shown how comprehension strategies themselves can provide a structure for small-group text-related discussions that not only increase student involvement but also foster learning of content and strategies. Other examples of this principle appear in work on cooperative learning (Stevens, Slavin, & Farnish, 1991).

3. **Number of strategies.** The consensus is that it is useful to teach students more than one comprehension strategy, but it is not clear how many strategies can be effectively taught in any given period of time. The answer will likely vary, depending on teacher skill, student abilities, instructional group size, and the time available for instruction.

4. **Time for professional development.** It takes time for teachers to become skilled in providing this type of instruction. One group with substantial experience in training teachers to provide comprehension strategy instruction (Brown, Pressley, Van Meter, & Schuder, 1996) found that it often took several years for teachers to become skilled at teaching students to use multiple comprehension strategies flexibly and adaptively.

SUGGESTIONS FOR IMPLEMENTATION AND FURTHER READING

One of the biggest limitations of current research in this area is the lack of controlled, large-scale demonstrations of the amount and depth of professional

development and support required to produce consistently high-quality strategy-use instruction in elementary, middle, or high school. The research also lacks sufficient demonstrations in different types of school settings and classroom-sized groups to provide really clear models for content-area teachers of ways that this type of instruction can be regularly integrated into English, science, history, social studies, or mathematics classes. However, there are a number of reasonable starting points for schools or districts that desire to increase the effectiveness of their instruction in comprehension strategies. We offer three:

1. **Establish a literacy leadership group** with the responsibility to read and discuss both research and research-into-practice articles on this topic in order to acquire local expertise. This recommendation follows the tradition of book study groups or literacy study teams to establish local knowledge and expertise for solving instructional challenges in any area. Needless to say, the items under study by groups of leaders or lead teachers should reflect the best evidence-based practices possible. Following are some initial suggestions for further study:

Block, D., & Pressley, M. (Eds.). (2002). *Comprehension instruction: Research-based best practices.* New York: Guilford.

Carlisle, J. F., & Rice, M. S. (2002). *Improving reading comprehension: Research-based principles and practices.* Baltimore: York.

Duke, N. K., & Pearson, P. D. (2002). Effective practices for developing reading comprehension. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 205–242). Newark, DE: International Reading Association.

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

Pressley, M. (2000). What should comprehension instruction be the instruction of? In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. III, pp. 545–561). Mahwah, NJ: Erlbaum.

Pressley, M., & Hilden, K. (2004). Toward more ambitious comprehension instruction. In E. Silliman & L. Wilkinson (Eds.), *Language and literacy learning in schools.* (pp. 151-174) New York: Guilford.

Trabasso, T., & Bouchard, E. (2002). Teaching readers how to comprehend text strategically. In C. Block and M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 176–200). New York: Guilford.

2. **Investigate and identify commercially available instructional materials** that can help guide instruction in this area. Over the past several years, a number of publishers have developed instructional programs for adolescents that follow a defined scope and sequence, contain explicit instructional routines, and provide guidance for classroom implementation. If teachers are trained and supported in the use of a well-developed, evidence-based instructional program, it can act as a scaffold to help them develop effective instructional habits. In this sense, using a good program to guide instruction can serve as a type of professional development, introducing teachers to effective instructional routines, instructional sequences, and aligned practice activities. We would emphasize, though, that materials alone without adequate professional development and training in their use to support instruction will not usually produce the impact on student performance that can be gained when the materials are used appropriately. A number of brief reviews of instructional programs in this area, written by knowledgeable teachers, are available on the website of the Florida Center for Reading Research (http://www.fcrr.org). Another analysis of programs to guide instruction in adolescent literacy is *Adolescent Literacy Intervention Programs: Chart and Program Review Guide,* recently published by Learning Point Associates (Shanahan, 2005), and available online at http://www.learningpt.org/literacy/adolescent/ intervention.pdf.

3. **Identify a supporting organization with expertise in this area** and arrange for consultative support in creating a professional development plan. Although we cannot directly identify organizations with expertise in this area here, several organizations have worked with schools in this area for a number of years to implement research-based practices. These organizations now have a developing capacity to provide teachers and leaders with professional development that reflects not only the research base but their considerable experience in implementing this instruction in middle and high schools.

Recommendation 2:
Increase the Amount and Quality of Open, Sustained Discussion of Reading Content

This recommendation focuses on using both teacher-guided methods and small-group methods to increase all students' opportunities to engage in high-quality, continuing discussions of the meaning of text. The idea is that participation in such discussions is a direct way to increase students' ability to think about and learn from text (Beck & McKeown, 2006). During discussions, students can be directly led to engage in thoughtful analysis of text in ways that support their comprehension when they are reading on their own. In addition to its impact on reading comprehension, increasing the amount of high-quality discussion of reading content is frequently cited as a way to increase engagement in reading and reading-based assignments (Guthrie & Humenick, 2004).

In a review of both qualitative and quantitative research on the impact of discussion-oriented teaching on understanding and comprehension, Applebee, Langer, Nystrand, & Gamoran (2003) concluded:

> These lines of research overlap significantly in both the form and the focus of the particular interventions advocated. The results converge to suggest that comprehension of difficult text can be significantly enhanced by replacing traditional I-R-E (initiation-response-evaluation) patterns of instruction with discussion-based activities in which students are invited to make predictions, summarize, link texts with one another, and with background knowledge, generate and answer text-related questions, clarify understanding, muster relevant evidence to support an interpretation, and interrelate reading, writing, and discussion. (p. 693)

In the study of middle and high schools teachers mentioned earlier (Langer, 2001), effective teachers were much more likely to create situations in their classrooms that led to extended discussions of content among students. In Langer's words,

> In the higher performing schools, at least 96% of the teachers helped students engage in the thoughtful dialogue we call shared cognition. Teachers expected their students to not merely work together, but to

sharpen their understandings with, against, and from each other. In comparison, teachers in the more typical classes focused on individual thinking. Even when their students worked together, the thinking was parallel as opposed to dialogic. (p. 872)

Finally, a recent meta-analysis of the research literature on the impact of discussion-oriented instruction on reading comprehension (Murphy & Edwards, 2005) examined effects from 75 studies that used students of mixed age from preadolescence through high school. The most important conclusion from this study was that approaches emphasizing critical analysis of text or involving discussion (either teacher- or student-led) of specific questions about text had the most consistently positive effect on reading comprehension outcomes. The authors also noted a serious shortage of studies that examined the impact of discussion-oriented approaches that measured outcomes with standardized, general measures of reading comprehension.

There is substantial evidence that typical middle and high school classrooms in the United States, particularly those serving predominantly poor and minority students, provide little opportunity for the type of extended and open discussion of reading content recommended here (Applebee, 1993; Nystrand, Gamoran, & Heck, 1993). The importance of these findings is underlined by a statement in the recent National Association of State Boards of Education document *Reading at Risk: How States Can Respond to the Crisis in Adolescent Literacy* that "what has remained unchanged in too many middle and high schools and classrooms is the nature of teaching itself" (2005, 18).

STUDIES

We now consider four studies that have empirically examined the influence of discussion-oriented instruction on literacy outcomes.

Applebee, A. N., Langer, J. A., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high school English. *American Educational Research Journal, 40,* 685–730.

This correlational study examined the relationship between amounts of extended classroom discussion and literacy outcomes in 64 classes and 1,111 middle and high school students in five states. Constructed to represent

diversity in instructional approaches and student demographics, the sample included both urban and suburban schools.

Field researchers gathered direct observational data through four lessons in each classroom being studied (two fall, two spring). Lessons were selected by asking the teacher to identify a class that included discussion of a work of literature, in whatever form such discussions usually took; researchers used a formal, computer-supported, real-time observational system to record the classroom observations, and collected other data through student and teacher questionnaires.

Researchers observed and coded four major dimensions of classroom interactions:

1. Evidence of *dialogic instruction*—in which the teachers asked questions to elicit discussion, not simply right and wrong answers;

2. *Open discussion*—defined as a free exchange of information among students involving at least three participants (could include the teacher), lasting longer than 30 seconds;

3. Evidence of *building envisionment*—a complex overall rating made at the end of each observation. The rating was designed to assess the teacher's goals and intentions for the lesson as reflected in overall patterns of activity and discussion, such as verbally encouraging students; modeling how to take a position, express opinions, or explore personal reactions; encouraging students to use others' questions and comments to build discussion; allowing students to develop their own understandings in reading and writing activities; and allowing students to shift discussions in a new direction; and

4. Evidence of *extended curricular conversations*—making connections across time and subjects in classroom discussions and presentations.

Students' literacy levels were measured at the beginning and end of the year through writing tasks that asked students to explain why a particular character in fiction appealed to them and to describe an experience that taught them something and why it was important. Student responses were scored for levels of abstraction and elaboration.

Following are some important findings of the study:

• The dimensions of classroom observations were strongly correlated with one another, so they could be collapsed into a single dimension of "discussion-oriented instruction."

- Open discussion averaged 1.7 minutes per 60 minutes of class time, with lots of variability.

- There was considerably more open discussion in high-track than in low-track classrooms.

- With both pretest performance and level of educational track controlled, there was a significant correlation between the degree to which classrooms provided discussion-oriented instruction and students' growth in literacy skills. That is, students in high-discussion classes (regardless of educational track) showed more improvement on the literacy tasks during the year than did students in low-discussion classes.

Although the authors were careful to point out that this study's absence of an experimental design did not allow them to conclude that greater opportunities for participation in discussion-oriented instruction actually caused stronger growth in literacy skills across the year, the results are at least consistent with this conclusion. The authors also made the important observation that "lower-track classes receive significantly less instruction of the kinds that previous studies suggest contribute to higher literacy performance" (p. 710).

Fall, R., Webb, N. M., & Chudowsky, N. (2000). Group discussion and large-scale language arts assessment: Effects on students' comprehension. *American Educational Research Journal, 37,* 911–941.

This study involved an experimental design in which 10th-grade students' story comprehension was assessed under two conditions. In one condition, the students could engage in small-group (three students) discussion of a story they had read silently; the other condition provided no opportunity for discussion of the story before taking the test. The comprehension test asked open-ended questions about the story's content and meaning. Students were randomly assigned to conditions.

The students were selected to be demographically representative of all high school students in Connecticut, and complete assessment data were available for approximately 250 students each in the control and experimental conditions. Students in the discussion group were given 20 minutes to read a passage silently and answer two open-ended questions individually. Then they engaged in 10 minutes of small-group discussion about the story and answered four more open-ended questions. Students in the control group were given the

same time to read the story and answer the questions, but they did not take part in any discussion of the story.

The study's central finding was that the students in the discussion group performed better on the last four questions (after discussion), while the control group showed no difference in their performance on the first two and the last four questions. The authors noted, "the majority of changes (in the discussion group) consisted of a greater understanding of basic facts from the first part of the test to the second, and a greater understanding of the motives, feelings, and themes on the second part of the test" (p. 930). Most students also reported that they changed their ideas about the story as a result of discussing it with others.

A limitation of this study was that the authors did not conduct systematic observations of the small-group discussions, and thus were not able to comment on the discussion quality or the extent to which all students participated. However, the study does show that even a small amount of collaborative discussion can improve students' reading comprehension.

It should also be noted that both this study and the Applebee et al. (2003) study reported earlier (page 32) contain excellent discussions of previous research on discussion-oriented approaches to instruction.

Reznitskaya, A., Anderson, R. C., McNurlen, B., Nguyen-Jahiel, K., Archodidou, A., & Kim, S. (2001). Influence of oral discussion on written argument. *Discourse Processes, 32,* 155–175.

The rationale for this study was based on indications from previous research that taking part in extended discussions can promote the development of reasoning skills. Participants in the study were fourth- and fifth-grade students from four different elementary schools that served students of diverse ethnic and socioeconomic backgrounds. The intervention group comprised 27 boys and 26 girls in three classrooms, and the contrast group comprised 33 boys and 29 girls in three comparable classrooms. Classrooms were not randomly assigned to the intervention, so this was a quasi-experimental design.

The study examined the effects of a small-group discussion technique called *collaborative reasoning*. In groups of six to eight students that met twice weekly for five weeks in sessions lasting 15 to 20 minutes, students discussed controversial issues raised in a set of stories selected by the authors. Students in the discussion groups were:

supposed to take positions on each issue and provide supporting reasons and evidence for their opinions. With coaching from the teacher, students were supposed to challenge each other's viewpoints, offer counterarguments, respond to counterarguments with rebuttals, and ask for clarification as needed. Children were prompted to use the story information as the basis for their claims. (pp.160-161)

Part of the teacher's role was to model, prompt, or encourage students to use information from the stories to support their arguments. Teachers also directly taught students how to think of counterarguments to a position being taken by another student. In addition to the small-group oral discussions in the classroom, six to eight students from each class participated in twice-weekly Web-forum collaborative discussions with students from one of the other classes in the study. Students in the contrast classrooms received their regular language arts instruction during the study.

Researchers assessed the effects of the discussion intervention by asking each student to write a persuasive essay based on a story he or she had read. Students had 40 minutes to respond to the following prompt:

In the next few pages, write whether or not you think Jack should tell on Thomas. Remember:

- Use good reasons and evidence to support your writing.

- Some people might disagree with you. Think about what these people might say to you and how you would respond to them.

- Do your best and write as much as you can. You can go back and reread the story if you like. (p. 161)

The researchers coded student responses to these prompts using a relatively objective scoring procedure. Before the study, all students were administered a vocabulary test, which was used to control for small differences in verbal ability between groups, although the differences were not significant.

Students who participated in the collaborative reasoning groups performed significantly better on their essays on a number of dimensions than did students in the contrast group. They wrote more arguments, counterarguments, and rebuttals, and they showed greater use of text information to support their arguments than did students in the contrast

classrooms. Overall, the study provides evidence that reasoning skills acquired in one context (oral discussion) can generalize to another literacy context (persuasive writing).

Sandora, C., Beck, I., & McKeown, M. (1999). A comparison of two discussion strategies on students' comprehension and interpretation of complex literature. *Journal of Reading Psychology, 20,* 177–212.

This study's goal was to determine which of two discussion techniques—*Great Books* or *Questioning the Author*—produced the greater impact on middle school students' understanding and interpretation of complex literature. In the Great Books approach, discussion is initiated after students have read the entire text and is guided by three types of questions: factual, interpretive, and evaluative. The goal of the discussion is to give students opportunities to think about meaning and to share their ideas with others in an open discussion that provides feedback and exposes them to other interpretations of the same text. The Questioning the Author approach involves discussing the text while students are reading it. At various points in the text, the teacher initiates discussion by asking, "What is the author trying to say?" and frequently follows up with other questions like "How does that information connect with what the author discussed earlier?"

The participants in the study were all the students in the sixth- and seventh-grade classes of an inner-city school that had just one class per grade. Seventy-five percent of the students in the sixth- and seventh-grade classes scored below the 50th percentile for reading, and 94% were African American.

Four stories from the Great Books series were discussed during four 80-minute sessions. The sixth graders discussed these stories using techniques from Questioning the Author, while the seventh graders discussed them following the Great Books format. The same teacher, who had been well trained in both techniques, led both types of discussion. After the 80-minute reading and discussion period, the students' understanding and interpretation of the stories were individually assessed using the story recall method and responses to open-ended questions.

Students who had used the Questioning the Author method had stronger outcomes for both story recall and open-ended question tests. Their recalls were judged to contain more primary elements of the stories, including setting, main characters, theme, main events, and resolution than students in the Great

Books discussions, and their open-ended responses were more coherent and justified in terms of the text or the student's own knowledge.

The authors concluded that the greater impact of the Questioning the Author technique was likely due to several factors, including that (1) the discussion was distributed throughout the reading of the text so that student understanding was scaffolded at critical points in the narrative and (2) students remained more engaged in constructing meaning throughout the story because they were led, and supported, in actively thinking about its meaning while they read it.

CONCLUSIONS

Conclusions about discussion-oriented instruction for adolescent readers

Although the experimental evidence for the effects of discussion-oriented approaches to instruction on reading comprehension is not as strong as it is for explicit instruction in comprehension strategies, a very large amount of qualitative research literature documents the extent to which participation in rich, extended discussions is associated with improvements in the quality of students' thinking about what they read (Applebee et al., 2003). Further, almost all effective applications of explicit strategy instruction include opportunities to practice using these strategies in contexts that foster extended discussions of the meaning of text. Teaching explicit comprehension strategies and providing opportunities for extended discussion of text to enhance comprehension are likely to be closely linked in actual classroom practice.

As discussed in the research literature and documented in the studies presented here, opportunities for extended discussion of text have two potential kinds of impact on student learning. First, opportunities for extended discussion of text can improve students' understanding and learning of the specific texts under discussion. Second, opportunities to engage in text-based discussions over time can have a general impact on reading comprehension. Students who have repeated opportunities to explore the meaning of text in discussions with their teachers or peers develop habits of analysis and critical thinking that support improved comprehension when they read text on their own.

A last point related to this instructional recommendation is that establishing effective discussion-based instructional approaches for adolescents in middle and high school will likely require substantial adjustments to the curriculum. The tension here is between breadth and depth of content coverage. Taking time to build deep understanding through discussion must necessarily affect the breadth of content covered in a given class.

SUGGESTIONS FOR FURTHER READING

The potential starting points for districts and schools seeking to improve the amount and quality of discussion-oriented instruction for students in late-elementary, middle, and high school would be the same as those for instruction in comprehension strategies, except that we are not aware of any commercially available curricula or programs designed explicitly to improve reading comprehension in adolescents through discussion-oriented instruction. We recommend the following publications as a starting place for study groups:

Adler, M., & Rougle, E. (2005). *Building literacy through classroom discussion: Research-based strategies for developing critical readers and thoughtful writers in middle school.* New York: Scholastic.

Applebee, A. N. (1994). Toward thoughtful curriculum: Fostering discipline-based conversation. *English Journal, 83*(3), 45–52.

Applebee, A. N. (1996). *Curriculum as conversation: Transforming traditions of teaching and learning.* Chicago: University of Chicago Press.

Beck, I. L., & McKeown, M. G. (2006). *Improving comprehension with Questioning the Author: A fresh and expanded view of a powerful approach.* New York: Guilford.

Beers, K. (2003). *When kids can't read—what teachers can do: A guide for teachers 6–12.* Portsmouth, NH: Heinemann.

Daniels, H. (2001). *Literature circles: Voice and choice in book clubs and reading groups.* (2nd ed.). Portland, ME: Stenhouse.

Langer, J. A. (1995). *Envisioning literature: Literary understanding and literature instruction.* New York: Teachers College Press.

Recommendation 3:
Set and Maintain High Standards for Text, Conversation, Questions, and Vocabulary

We are not aware of any experimental support for setting high standards, but it is consistently supported in observational studies of high-achieving classrooms and teachers. It is also a matter of common sense. If we are to improve overall levels of adolescent literacy, instruction, as broadly provided in middle and high schools, will have to be directed toward higher standards than it currently is. The recommendation to set consistently high standards for literacy outcomes for grades 4–12 also appears regularly in recent comprehensive documents on improving levels of adolescent literacy. For example, *Reading at Risk: How States Can Respond to the Crises in Adolescent Literacy,* recently published by the National Association of State Boards of Education, has the following as its first recommendation for state-level policy:

> *Set state literacy goals and standards, ensuring alignment with curricula and assessments, and raising literacy expectations across the curriculum for all students in all grades. (2005, p. 30)*

Another comprehensive document, recently published by the National Governors Association for Best Practices, *Reading to Achieve: A Governor's Guide to Adolescent Literacy,* also contains research-based recommendations for improving literacy among students in grades 4–12. The first recommendation is that governors should build support for a state focus on adolescent literacy. The second is that:

> *Governors can help accomplish the goal of preparing students to meet the literacy expectations of employers and postsecondary institutions by assessing real-world demands and raising state standards, accordingly, and by revising state standards to include explicit expectations for literacy instruction across grade levels and content areas. (2005, p. 15)*

Although these recommendations are phrased in state-level policy language, their ultimate impact must be at the classroom level: unless individual teachers raise their own expectations of literacy for all of their students, state-level policies will have little impact.

STUDIES

We now turn to four studies that provide empirical evidence of the relationship between increased expectations for literacy and student literacy outcomes.

Taylor, G., Pearson, P., Peterson, D., & Rodriguez, M. (2003). Reading growth in high-poverty classrooms: The influence of teacher practices that encourage cognitive engagement in literacy learning. *The Elementary School Journal, 104,* 3–28.

This large-scale observational study was designed to identify instructional practices associated with strong reading growth in grades one through five. Researchers conducted observations in nine high-poverty schools from five areas in the U.S. Between 70% and 95% of participating students qualified for free or reduced-price lunch, and 67% to 91% were members of minority groups. A total of 88 teachers and 792 students participated in the study.

Using a structured observation system that allowed them to directly record field notes about classroom events and aspects of classroom organization and materials, researchers observed all teachers for one hour in the fall, winter, and spring. They later coded the field notes for the occurrence of specific instructional events and processes.

In the analyses with which we are concerned (grades two through five), the researchers assessed literacy growth using a standardized measure of reading comprehension, given at the year's beginning and end.

The study found that the extent to which teachers asked higher-level comprehension questions during reading instruction was consistently related to higher levels of student growth in reading comprehension. The authors summarized this finding and reported additional analysis of its central characteristics:

> *One consistent finding is that higher-level questioning matters. The more a teacher asked higher-level questions, the more growth the nine target students in her class experienced on a variety of measures. The teachers who asked more higher-level questions appeared to understand the importance of challenging their students to think about what they had read. In the process of asking more higher-level questions, at least two thirds of the [effective] teachers*

emphasized character interpretation and connections to experience, and they focused on thematic elements and student leadership in discussions more than did the [less effective] teachers. (p. 22)

Another important finding from this study is that the actual rate of higher-level questioning among teachers was relatively low. For example, in grades three through five, higher-level questioning was coded for only 20% to 26% of the observational sessions. In contrast, lower-level questioning was coded for 46% to 52% of the sessions. As the authors suggest, "one can only wonder, if a little goes such a long way, what would happen with wholesale changes in these practices" (p. 19).

Applebee, A. N., Langer, J. A., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high school English. *American Educational Research Journal, 40,* 685–730.

This study was described earlier, in the section on discussion-based approaches to instruction (page 32), but it also examined the influence of student literacy expectations on student outcomes; those findings are considered here.

As a reminder, this correlational study examined the relationship between various features of classroom instruction and literacy outcomes in 64 classes and 1,111 students in middle and high schools in five states. The sample was constructed to broadly represent diversity in instructional approaches and student demographics and included both urban and suburban schools.

Information about the level of academic demands across the different classrooms came primarily from student reports of their assignments. They addressed three dimensions:

- *Emphasis on revision.* This scale estimated the extent to which each teacher asked students to revise their work to improve both writing mechanics and content.

- *Hours of English homework.* This was an estimate of the hours of homework assigned each week by each teacher.

- *Reading and writing assignments completed.* This estimated the overall completion rate in each class for all reading and writing assignments.

Classrooms rated as placing higher academic demands on students also

produced the strongest literacy growth, as assessed in this study by a writing task. Further, higher academic demands had a significant effect on the literacy growth of both high-achieving and lower-achieving students in these classrooms.

Lee, V. E., & Smith, J. B. (1999). Social support and achievement for young adolescents in Chicago: The role of school academic press. *American Educational Research Journal, 36,* **907–945.**

This large-scale correlational study analyzed the relationship between student growth in reading comprehension and supports for learning from teachers, parents, peers, and community, with "academic press," an estimate of each school's level of academic demand. The data to assess student support and academic press came from surveys completed by 28,318 sixth- and eighth-grade students attending 304 schools.

The researchers found that social support for learning reported by students and a school's academic demands were both positively and significantly related to student growth in reading comprehension during sixth and eighth grades. However, researchers also noted a higher proportion of minority students in medium- and low-press schools and a higher proportion of Asian and white students in high-press schools, raising the possibility that school composition (socioeconomic and ethnic student backgrounds) may have accounted for the relationships observed.

Further analysis controlling for school-level student demographics discovered an important relationship between the level of social support for learning students received and the academic demands of the school they attended:

> *Not only do students learn more in schools with higher levels of academic press, but the way in which students' social support influences their learning is affected by the types of schools they attend. … Students with much social support learn quite a lot if they are also fortunate enough to attend schools with high academic press. … On the other hand, the unfortunate student with little social support who also happens to attend a school with low academic press would be particularly disadvantaged. Such a student would actually lose ground in achievement over the course of a year. … Even if students in such schools have substantial social support on*

which they draw, they learn almost nothing … over the course of a
year if they attend schools with low academic press. (pp. 932–934)

Students attending schools characterized as making high academic demands did not make adequate progress if they reported few sources of support for academic learning from their teachers, parents, or neighborhoods. So both academic press and social supports for learning were important in supporting student growth in reading comprehension. If either factor was weak, student growth in reading comprehension was affected.

Langer, J. A. (2001). Beating the odds: Teaching middle and high school students to read and write well. *American Educational Research Journal, 38,* 837–880.

This study examined a range of instructional practices in middle and high schools that were "beating the odds" in the sense that their students were obtaining higher scores on state-level high-stakes tests than other schools with the same student demographics. For contrast purposes, researchers also identified schools whose performance was similar to other schools with the same student composition. An effort was made to represent the full diversity of student populations, and urban schools were also strongly represented in the sample. Altogether, 25 schools, 88 classes, and 44 teachers—all English teachers—participated in the study. The schools ranged from 92% African American students and no Caucasian students to 86% Hispanic and 2% Caucasian, and 97% Caucasian students; the range of socioeconomic diversity was just as large.

Researchers studied the teachers and schools over two years, spending approximately five weeks per year at each school site. They also maintained weekly contact through e-mail and phone conversations with teachers and students in the study. Through these latter contacts, researchers learned about ongoing classroom activities, student work, thoughts about various types of lessons, and future plans. They collected a rich array of qualitative data and then coded the data and subjected them to a number of different quantitative analyses.

Six dimensions of classroom instruction that differentiated high-performing from average schools were identified; two of these dimensions are relevant to the topic of this section. High-performing schools, and high-performing teachers

in all schools, differed from schools with more typical performance in how they prepared students to take state-level accountability tests and in how they conceptualized learning.

In terms of preparing students for high-stakes accountability measures in literacy, the researchers stated:

> *Our analysis of approaches to test preparation found two qualitatively different approaches used by the teachers in this study. One approach treated test preparation as a separated activity, involving test practice and test-taking hints. The second approach integrated test preparation with the regular curriculum by carefully analyzing test demands and reformulating curriculum as necessary to be sure that students would, over time, develop the knowledge and skills necessary for accomplished performance. (p. 860)*
>
> *Teachers in the higher performing schools used the tests as an opportunity to revise and reformulate their literacy curriculum. The primary approach to test preparation involved relevant teachers and administrators in a careful deconstruction and analysis of the test items themselves, which led to a deeper understanding of the literacy skills, strategies, and knowledge needed for students to achieve higher levels of literacy performance. This was followed by a review and revision of both the curriculum and instructional guidelines to ensure that the identified skills and knowledge were incorporated into the ongoing English program the students would experience. (pp. 860–861)*
>
> *Test preparation looked very different in the more typically performing schools. Rather than an opportunity to improve their literacy curriculum, teachers in these schools treated the tests as an additional hurdle, separated from their literacy curriculum. Here, the primary mode of test preparation offered practice on old editions of the test, teacher-made tests, and practice materials, and sometimes, commercial materials using similar formats and questions to the test-at-hand. (p. 862)*

More and less effective teachers also differed consistently in the standards they set for mastery of concepts and materials. The more effective teachers

continually tried to move students to deeper levels of understanding once initial learning goals were met, while the less effective teachers typically moved to an unrelated activity with different content.

> For some of the teachers, learning was seen as successful and complete once students exhibited an initial understanding of the focal skill or concept. For other teachers, such immediate understandings were simply the beginning of the learning process, which continued with related activities to move students toward deeper understanding and generativity of ideas. … All of the more successful teachers took a generative approach to student learning, going beyond students' acquisition of the skills or knowledge to engage them in deeper understandings. In comparison, all of the more typical teachers tended to move on to other goals and activities once they had evidence that the target skills or knowledge had been learned. (p. 870)

Although the data in this study are primarily qualitative and correlational, they provide a compelling and rich description of instructional practices characteristic of schools and teachers that were more and less successful in helping their students meet high literacy goals. One difference was allowing state literacy standards to more thoroughly penetrate the curriculum, and the other was setting higher standards for deep understanding and generative knowledge and skills.

CONCLUSIONS

Conclusions about the need to set high standards for literacy for all adolescents

A broad scientific literature documents the effects of teacher expectations on student performance (Good, 1987; Good & Brophy, 2002). Higher expectations consistently lead to higher levels of student performance. Thus, it is not surprising that raising literacy expectations, and applying them consistently to all students, should be recommended regularly as one element of successful state-, district-, and school-level plans to improve adolescent literacy outcomes. However, it should also be clear that high state literacy standards will have little

impact if individual teachers do not adopt those standards and embed them in their classroom curriculum and teaching practices.

Where to start raising standards for adolescent literacy on a large scale seems relatively clear. First, state-level literacy leaders must identify and adopt clear and comprehensive literacy standards, which must be reflected in the state-level accountability measures for literacy outcomes. Second, school-level literacy leaders and teachers must work to understand the meaning of those standards as they apply to classroom instruction and ongoing, formative assessments. If school-level study groups carefully evaluated state assessments (and other assessments as well) for their implicit literacy demands, that would help teachers form a more explicit understanding of the literacy targets or standards at each grade level. Third, classroom teachers must teach in ways that directly support student growth toward the high literacy standards defined by their states, as understood in the analyses described in the second step. All four of the other instructional recommendations contained in this document describe evidence-based instructional techniques that will likely be required to consistently achieve the higher literacy standards we are recommending here.

Recommendation 4:
Increase Students' Motivation and Engagement with Reading

In a previous section, we described the factors that contribute to strong reading comprehension in adolescents and discussed the role of motivation and engagement in fostering higher levels of literacy attainment and performance. Simply put, deep comprehension of complex text is an effortful process that requires *active* use of background knowledge, *active* use of appropriate reading strategies, and an *actively* thoughtful response. Both while learning to coordinate these complex processes and when executing them to accomplish specific tasks requiring deep comprehension, the more students are motivated to comprehend and the more they are engaged with the text, the more successful they will be (RAND, 2002).

In a meta-analysis of studies investigating instructional practices that enhanced motivation for and engagement in reading, Guthrie and Humenick (2004) identified four instructional practices with significant effect sizes: (1) *content goals for instruction,* meaning that students had interesting learning goals to achieve through their reading activities; (2) *choice and autonomy*

support, which meant that students were allowed a reasonable range of choices of reading materials and activities; (3) *interesting texts,* which, depending on the range of reading skills in the class, also usually meant having books written at multiple levels; and (4) *opportunities to collaborate with other students* in discussion and assignment groups to achieve their learning goals.

While it is clearly true that teachers can influence students' motivation to read by how they structure assignments, organize their classrooms, and interact with their students, Moje (2006) has also pointed out that the actual texts adolescent students read can be either motivating or demotivating. As one means of supporting student motivation for reading, she advocates paying careful attention to text difficulty. In many content-area classrooms, students (particularly struggling readers) are expected to spend a lot of time reading texts that are very difficult for them. As Beers (2003) has noted, one obvious and effective method for increasing both student motivation for reading classroom materials and students' ability to learn from what they read is to have texts at different levels of difficulty that address similar content or themes. The availability of texts at multiple levels of difficulty is also an important part of the motivational context of *Concept-Oriented Reading Instruction* (Guthrie, Wigfield, & Perencevich, 2004), which will be discussed in two of the following studies.

STUDIES

We turn now to three studies that have examined the impact of various factors on motivation for reading and reading outcomes.

Guthrie, J. T., Wigfield, A., & VonSecker, C. (2000). Effects of integrated instruction on motivation and strategy use in reading. *Journal of Educational Psychology, 92,* 331–341.

This study examined the effects of a complex set of instructional practices known as Concept-Oriented Reading Instruction (CORI) on third- and fifth-grade students' motivation and strategy use. It employed a quasi-experimental design: CORI was implemented in four classrooms (two at grade three and two at grade five) in three schools and was compared with traditional classrooms in these schools selected on the basis of comparable teachers and students. The students were approximately 55% African American, 22% Caucasian, 15%

Hispanic, and 7% Asian. The schools had been nominated by a district supervisor as likely to benefit from more integrated and motivating instruction for low-achieving students.

Both the CORI and the traditional programs had identical instructional goals for English language arts and science, but they used very different instructional methods. Instruction in the control classrooms reflected traditional practices and followed the teacher's guides for their textbook series in English and science. Instruction emphasized textbook coverage, individual work, teacher-directed learning, and performance goals in the form of unit test performance.

The CORI teachers participated in a summer workshop for 10 half days to plan instruction for the year and met once a month during the year to discuss their progress and share instructional strategies. Instruction in both the third- and fifth-grade classrooms was theme oriented; for example, the fifth-grade instructional theme was life cycles of plants and animals in the fall and the solar system and geological cycles in the spring.

At the beginning of each unit, students engaged in observational and hands-on activities in and outside the classroom; students and teachers generated many questions during this phase. In the next phase, students were taught how to use a selection of trade books and other resources to find information on the questions they had generated. Students were also directly taught several reading comprehension strategies and strategies for integrating information from sources. An important feature of CORI was that students read many different kinds of texts, including novels, chapter books, textbooks, and poetry, all related to the theme. In the last phase, students developed coherent presentations they could share with others.

At the end of the year, researchers assessed student motivation for reading with the Motivation for Reading Questionnaire (MRQ, Wigfield & Guthrie, 1997), which measures both intrinsic and extrinsic motivation for reading. They also asked the students to report the learning strategies they had used the previous year. The CORI students reported more curiosity about learning through reading than did students receiving traditional instruction, but they did not express more involvement (desire to become absorbed in text) than the contrast group. They also reported using reading and study strategies much more than students in the contrast classrooms. Results were essentially the same for both third and fifth graders. On two measures of extrinsic motivation for reading, the two instructional groups did not differ.

The authors conceptualized CORI as implementing five important features that led to increased motivation and involvement in reading: (1) support for student autonomy and choice; (2) support for student competence through direct instruction; (3) opportunities to collaborate with other students; (4) explicit and interesting learning goals; and (5) real-world interactions related to the learning goals and instructional theme. It is not possible in a study like this to identify the individual importance of the separate elements in the "instructional package," but the study does provide evidence that, together, they can have a significant impact on at least some elements of motivation and interest in reading.

Guthrie, J. T., Wigfield, A., Barbosa, P., Perencevich, K. C., Taboada, A., Davis, M. H., et al. (2004). Increasing reading comprehension and engagement through Concept-Oriented Reading Instruction. *Journal of Educational Psychology, 96,* 403–423.

The two studies reported in this article were conducted with third-grade students but are included here for two reasons. First, Concept-Oriented Reading Instruction is an important instructional innovation that incorporates much of what is currently known about improving motivation and engagement in reading. Second, the study by Guthrie, Wigfield, and VonSecker (2000) just described indicated that CORI's motivational impact is the same for students in third grade and older students. This leads to the expectation that the instructional principles implemented in CORI should work similarly at least for students in middle school. The research reported in this article goes beyond the previous study we discussed by examining the impact on both motivation and reading comprehension performance of adding motivational elements to instruction in comprehension strategies.

The first study reported in this article was done in four schools that were roughly matched in demographic characteristics, and randomly assigned to either CORI or strategy instruction (SI) conditions. CORI was implemented in two schools to all third-grade students in eight classrooms. SI was implemented in 11 classrooms in two different schools. Instruction occurred 90 minutes per day for 12 weeks in both conditions. The students in the study were 22% African American, 75% Caucasian, and 3% Asian. Twenty percent qualified for free and reduced-price lunch; they also included struggling readers who were not eligible for special education or who were reading at fewer than two years below grade level.

The instruction in multiple comprehension strategies was the same in both conditions. Six strategies were explicitly taught to and practiced by the students: (1) activating background knowledge, (2) questioning, (3) searching for information, (4) summarizing, (5) organizing graphically, and (6) identifying story structure. Each strategy was taught for one week in the order above for six weeks; in the next six weeks, strategies were systematically integrated with each other following procedures identified as effective in the *Report of the National Reading Panel* (National Reading Panel, 2000).

In addition to explicit instruction and support for reading comprehension strategies, CORI systematically integrated the same five "motivational" principles outlined in the Guthrie et al. (2000) study: (1) using content goals for reading instruction; (2) affording students choices and control; (3) providing hands-on activities; (4) using interesting texts for instruction; and (5) organizing collaboration among students for learning from text. SI teachers worked to improve motivation primarily by helping students develop their sense of self-efficacy for reading comprehension.

It is impossible to convey the richness of a complex, multifaceted instructional approach like CORI in the brief space available here. It focuses student learning on interesting thematic topics and uses a number of methods to enhance interest, such as hands-on demonstrations and student discussions. It also supports improved reading competence by providing explicit instruction in multiple reading comprehension strategies. Care is taken to make available a variety of books, written at multiple levels, related to the theme so that students reading at different levels can participate productively in projects and discussions. Finally, it capitalizes on the power of cooperative learning groups (Stevens, Slavin, & Farnish, 1991) by providing many opportunities for students to work together on projects and in discussions.

The outcomes of this experiment were measured by experimenter-developed pretests and posttests of reading comprehension, strategy use, and reading motivation. At posttest, CORI students showed more growth on the reading measure, on measures of strategy use, and on measures of reading motivation.

The article's second study was similar to the first, except that it added a control for traditional instruction (TI), in which no strategy instruction was offered, and used a standardized measure of reading comprehension.

On the experimenter-developed passage-comprehension measure, the

CORI group outperformed the other two but was not significantly better than the SI group. The SI and TI conditions did not differ significantly. CORI students performed significantly better on the standardized measure of reading comprehension than either the SI or the TI students.

Overall, it seems reasonable to conclude that improving the motivational context of instruction in reading comprehension strategies has a direct impact not only on motivation for reading and extent of strategy use but also on growth in reading comprehension itself. This study provides further support for the idea that effective instruction in reading comprehension depends not only on *what* is being taught but also on *how* it is taught.

Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, B. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion, 28,* 147–169.

This study took place in two high schools and was based on the premise that providing guidance to teachers who changed their motivational style of interacting with students would increase students' engagement with classroom work. Engagement was defined as "the behavioral intensity and emotional quality of a person's active involvement during a task" (p. 147).

Twenty teachers from the math, economics, English, and science departments participated in the study. Half of the teachers were randomly assigned to receive the motivational training first, while the other half served as the control group. The teachers received one hour of training on four instructional strategies designed to increase student engagement: (1) nurturing inner motivational resources by acknowledging student interests and preferences; (2) relying on informational, noncontrolling language; (3) promoting and identifying value in activities that were inherently less interesting to students; and (4) acknowledging and accepting students' expressions of negative emotions. The teachers also had access to a website developed for the study that helped them apply the training information to their classrooms by presenting many audio and video examples of classroom instructional language.

The teachers in the study were observed three times. The first observation took place before the teacher training, the second occurred at the midpoint of the 10-week study, and a final observation occurred during week 10. After the midpoint observation, the teachers in the control group received the motivational training and began using the website.

Blind both to the study conditions and its overall purpose, observers conducted the formal, systematic observations of student and teacher behaviors. They watched the teachers to determine the extent to which they exhibited the instructional strategies designed to promote student engagement and monitored the students for behaviors indicating their level of engagement in classroom work, such as (1) level of involvement in classroom instruction, including attention, effort, verbal participation, persistence and expressions of positive emotion, and (2) active attempts to influence the flow of classroom events through comments and behavior toward the teacher or other students.

Analyzing the record of these observations, researchers found two effects. First, teachers who received the training consistently implemented the instructional strategies designed to increase student autonomy and engagement. Second, students showed a significant increase in their engagement in classroom activities. At the midpoint observation, the students in the group taught by teachers who had been trained showed significantly more engagement than students in the control group. By the end of the study, control teachers had also been trained, and their students also showed significant increases in engagement.

In the words of the authors, the study's most important finding was that "high school teachers can become more autonomy-supportive and, to the extent that they are able to do so, their students showed greater engagement" (p. 165).

CONCLUSIONS

Conclusions about the motivational context of literacy learning for adolescents

Both the theoretical and empirical supports for the role of motivation in improving students' response to instruction in reading comprehension are compelling. Since variability and inconsistency in motivation for reading among students and across subject areas are widely noted in the observational and survey studies of motivation and engagement in middle and high school classrooms (Biancarosa & Snow, 2006), evidence-based methods for improving student motivation and engagement should have a high priority in efforts to improve adolescent literacy outcomes.

One issue several investigators in this area have noted is the large number of motivational strategies used by teachers who successfully promote literacy in their students, even in the elementary grades (Bogner, Raphael, & Pressley, 2002; Pressley, Wharton-McDonald, Mistretta-Hampston, & Echevarria, 1998). However, Guthrie et al. (2004) suggest that it is likely to be most effective to train teachers to focus on a finite number of methods for increasing student engagement during literacy instruction. In their experience, three to five motivational enhancements, used in concert with one another, provide a consistently powerful effect on engagement for most students.

Although there is no systematic research to determine which motivational elements are most powerful for specific types of students, Guthrie et al. (2004) recommend that teachers first try to

1. build student autonomy by allowing more choices of texts and assignments;

2. create opportunities for students' social interactions focused on learning and understanding from text;

3. ensure a range of interesting texts are available to students; and

4. focus students on important and interesting learning goals.

Guthrie et al. also note that it is likely to be most helpful for teachers to implement most of these practices, rather than just one or two.

> *Because of their mutual dependencies, it seems neither feasible nor possible to focus on implementing just one or two of these practices in an actual classroom setting. Whether there are other sets of practices that are valuable and whether a smaller set of two to three practices is equally effective in enhancing reading engagement and comprehension remains to be observed in future research. (p. 417)*

In her observations of effective teachers in the study on high literacy standards described on page 44, Langer (2001) observed that successful middle and high school teachers used a range of practices similar to those outlined here to support their students' engaged learning. A prominent strategy of successful teachers in her study was arranging the class in ways that promoted discussion among students in small groups. In contrast, less successful classes had much less small-group student interaction.

SUGGESTIONS FOR FURTHER READING

We suggest reviewing the following documents for further study:

Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviors predicting students' engagement in schoolwork. *British Journal of Educational Psychology, 72,* 261–278.

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

Guthrie, J. T., Wigfield, A., and Perencevich, K. C. (2004.) *Motivating reading comprehension: Concept-Oriented Reading Instruction.* Mahwah, NJ: Erlbaum.

National Research Council and the Institute of Medicine. (2004). *Engaging schools: Fostering high school students' motivation to learn.* Washington, DC: National Academies Press.

Sprick, R. (2005). *ACHIEVE: Creating positive classroom environments in secondary schools.* Longmont, CO: Sopris West.

Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. *Educational Psychologist, 41,* 19–32.

Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., & Matos, L. (2005). Examining the motivational impact of intrinsic versus extrinsic goal framing and autonomy-supportive versus internally controlling communication style on early adolescents' academic achievement. *Child Development, 76,* 483–501.

Recommendation 5:
Teach Essential Content Knowledge So That All Students Master Critical Concepts

Several years ago, three researchers in West Germany conducted an interesting study of third-, fifth-, and seventh-grade students with different knowledge of the game of soccer (Schneider, Korkel, & Weinert, 1989). Researchers divided the students into groups with high and low knowledge about soccer and high and low general verbal ability. All the children listened to a story about a young player's experiences during an important soccer match. The story was well written except that in a few places important information was left out so that students had to make inferences; it also contained several contradictions. The story was taped and presented twice to all students. After students listened to the story, the researchers assessed their comprehension in three ways: (1) memory for story details; (2) ability to detect the contradictions in the story; and (3) ability to draw correct inferences. In all three cases, students' specific knowledge of the game of soccer had a greater influence on their performance than their general verbal ability. The authors' most important conclusion was that students with lower general verbal ability can comprehend and remember text as well as students of high general ability if they are equally familiar and knowledgeable about the material they are listening to or reading.

This study is a concrete example of findings from a larger array of studies that consistently document the influence of background knowledge on reading comprehension and complex intellectual performance (Hirsh, 2006). One powerful line of research illustrating how prior knowledge influences comprehension comes from work in schema theory (Anderson & Pearson, 1984; Anderson, Reynolds, Schallert, & Goetz, 1977). A central idea in schema theory is that much of human knowledge is stored in schemata that contain organized relational information. Thus, an "eating at a restaurant" schema might contain organized knowledge about typical participants (diners, waiters, chefs), typical elements of the setting (tables, chairs, menus, utensils, napkins), and typical sequences of events (ordering, eating, paying the bill). As in the example of students who were knowledgeable about soccer, a person with a well-developed restaurant schema will be much more able to make inferences or supply unstated information when reading about an event taking place in a restaurant than would someone who had never eaten in a restaurant. How

much students already know about the topic of the text they are reading exercises a powerful influence on their ability to comprehend, think about, and remember new information on the topic that they encounter as they read.

One type of knowledge that has an increasingly important impact on reading comprehension as students move from late-elementary school to middle and high school is vocabulary knowledge (Stanovich, Cunningham, & Feeman, 1984). Both knowledge of the meanings of general, widely used words and knowledge of words more closely tied to specific domains, such as scientific words, are important for reading comprehension. Most estimates place the number of words average students are likely to learn in grades 3 through 12 at about 3,000 a year if they read between a half million and a million words of text (Anderson & Nagy, 1992). It does not take complex math to determine that if teachers were to teach this number of words directly, they would need to teach a large number of words every day during a 180-day school year.

Thus most current recommendations for vocabulary instruction suggest that strong vocabulary development is best supported through a combination of (1) wide reading; (2) direct teaching of individual, high-utility words; (3) instruction in how to learn words independently during reading; and (4) instruction and activities that increase word consciousness (Beck, McKeown, & Kucan, 2002; Graves, 2000; Johnson, 1999). We explicitly include the recommendation to improve the efficiency of vocabulary instruction in our recommendations for more powerful teaching of essential content for all students.

Both long-term general improvements in levels of adolescent literacy and the acceleration of literacy development in students performing below grade level will depend critically on improvements in how content-area teachers teach the vocabulary, concepts, and facts that are essential content-area knowledge.

STUDIES

We now provide examples from three studies of methods that can be used during content-area instruction to increase all students' learning.

Bulgren, J. A., Schumaker, J., & Deshler, D. (1994). The effects of a recall enhancement routine on the test performance of secondary students with and without learning disabilities. *Learning Disabilities Research & Practice, 9,* 2–11.

This study examined the ability of seventh- and eighth-grade students with and without learning disabilities to remember important content from a social studies lecture on the history of American journalism. The lecture lasted 45 minutes and was followed by a 10-minute review of the lecture's essential content, conducted in two different ways. One group of students was randomly assigned to a condition in which essential facts were made memorable through the use of images, acronyms, or key words, referred to as "recall enhancement routines" in the training given to the teachers in this condition. Students in the other group reviewed the same essential content, but in a more traditional way that emphasized repetition and isolation of the content.

The next day, all students took a multiple-choice test on the lecture's content to measure student recall. Students assigned to the condition that used the recall enhancement routines performed significantly better than those who had reviewed the material in a more traditional way. This was true for both students with learning disabilities and those without. Further, a significantly higher proportion of students in both groups in the recall enhancement condition received a passing grade on the test than those in the control condition. These results are presented graphically in the following figures.

Average percent correct on test of recall

Percent of students passing the recall test
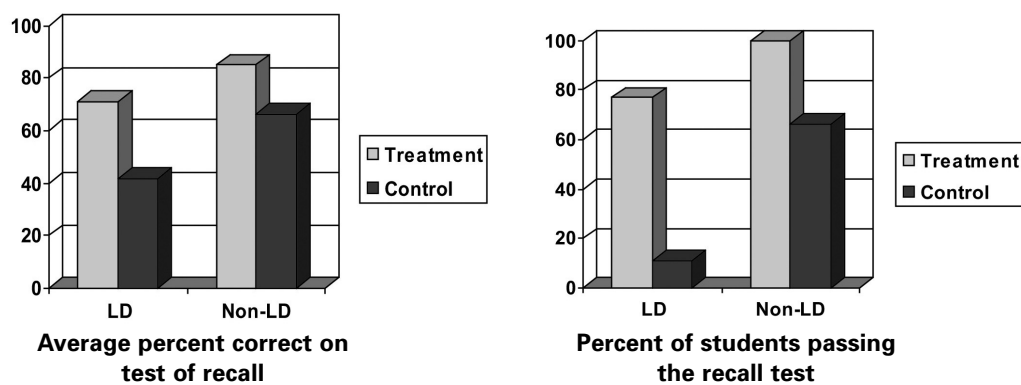
The authors felt that an important conclusion from this study was that content-area teachers can alter their instructional practices with their entire class in a way that will improve the performance of both students with learning disabilities and those without. They emphasized this point, because content-area teachers are unlikely to use instructional routines that benefit only one subgroup of students in their class. However, they are much more likely to adopt and continue to use an instructional enhancement that can be shown to improve learning for all students in significant ways.

Bulgren, J. A., Lenz, K., Schumaker, J. B., Deshler, D. D., & Marquis, J. G. (2002). The use and effectiveness of a comparison routine in diverse secondary content classrooms. *Journal of Educational Psychology, 94, 356–371.*

This study is another on "content enhancement routines" conducted by researchers at the University of Kansas. The Kansas research program has aimed to systematically develop and evaluate methods that content-area teachers can use to increase the effectiveness with which they teach content in science, history, social studies, and other classes. This paper exemplifies these researchers' general approach in reporting: (1) a tightly controlled experiment on the effectiveness of an instructional routine for highlighting and teaching essential differences among concepts and (2) a classroom study illustrating the extent to which volunteer teachers can implement the practice in their classrooms after relatively brief training, using materials supplied by the researchers.

To "test the effectiveness of an instructional routine combined with a graphic organizer for the live instruction of comparisons between and among complex concepts found in secondary curricula" (p. 357), researchers studied 107 seventh-, eighth-, tenth-, and twelfth-grade students in their science classes. Drawn from one high school and two middle schools, students were randomly assigned to either the experimental or control groups. Students with different achievement levels and disabilities (learning disabilities) were represented equally in the two groups.

Both groups were taught the same lesson on tropical disease, but students in the experimental group were taught about similarities and differences between malaria and snail fever through the Concept Comparison Routine. This involved using a graphic organizer to highlight important similarities and differences between the two diseases and a systematic routine for discussing and learning the information. Students in the control group received instruction on the same content, but in a more traditional lecture-discussion format. Researchers provided all the instruction in this study using a carefully developed instructional script to ensure high fidelity in the use of the Concept Comparison Routine.

Researchers assessed learning from the two instructional strategies using an experimenter-developed test one day after the students received the

instruction. Results, in terms of percent correct from the recall portion of this test, are shown in the following figure for learning disabled (LD), low-achieving (LA), average-achieving (AA), and high-achieving (HA) students.
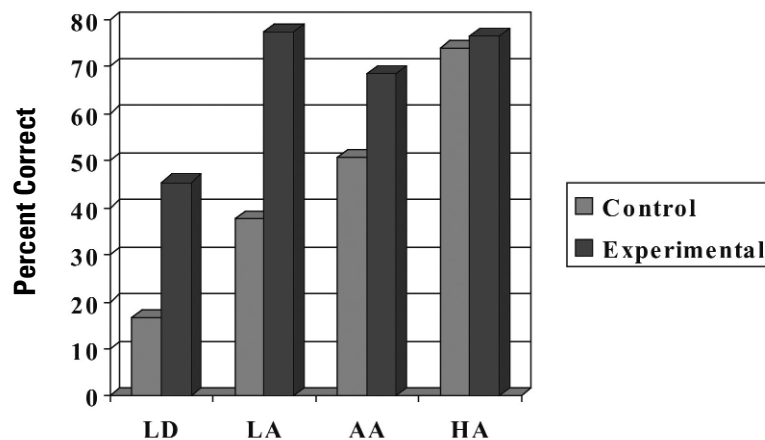
As can be seen, this intervention's effects were largest for the learning disabled and low-achieving groups, but they were also substantial for the average-achieving group. Only the high-achieving group showed no meaningful impact from the intervention.

Following this demonstration of the effectiveness of the Concept Comparison Routine, the authors conducted another study to examine how well content-area teachers could incorporate the routine in their ongoing classroom instruction. The study took place in two school districts and seven middle and high schools; 10 science and social studies teachers took part. They were given a manual that provided guidance in using the Concept Comparison Routine and they attended a two-hour workshop that explained and demonstrated the use of the materials and instructional routine. The teachers also received follow-up consultation in the routine's use after trying it out in their classrooms.

Following the training, experimenters systematically observed the teachers to determine how much they incorporated the Concept Comparison Routine into their instruction. In baseline observations before training in use of the routine, teachers highlighted information on similarities and differences between concepts in only 2.4% of observations. This figure rose to 79.5% of

the observations following the training. After the training, the teachers reached or exceeded a level of 85% mastery of the routine in 38 of the 39 classes observed. The authors concluded, "When an instructional innovation is well defined and teachers are provided with explicit instruction and concrete examples for using it, their implementation of the innovation is likely to be successful" (p. 368).

Baumann, J., Edwards, E., Boland, E., Olejnik, S., & Kame'enui, E. (2003). Vocabulary tricks: Effects of instruction in morphology and context on fifth-grade students' ability to derive and infer word meanings. *American Educational Research Journal, 40,* **447–494.**

This study examined the relative effects of directly teaching new vocabulary important to understanding social studies texts in fifth grade versus teaching strategies for inferring the meaning of new words they might encounter while reading those texts. Participants were drawn from eight fifth-grade classes in four racially and ethnically diverse schools; of the 157 students participating, 57% were eligible for free or reduced-price lunch, and 49% were African American. Classrooms were matched in pairs on students' socioeconomic status and then randomly assigned to either the TV condition, in which specific, content-central vocabulary words were directly taught, or the MC condition, in which students received instruction in morphemic and contextual analysis strategies based on example words from the textbook.

Teachers in both groups taught 33 45-minute lessons and covered the same social studies textbook content. They spent equal time on vocabulary (about 15 minutes per lesson) and gave their students the same pretests and posttests.

To illustrate how the MC and TV lessons were similar and different, consider lesson 5, which opened for both groups with a 5-minute introduction in which students previewed the chapter content and examined a photograph and a quotation by Frederick Douglass. Then the lessons diverged for the 15-minute vocabulary segment. The MC group students received instruction in morphemic analysis, using the word disagreements *in an excerpt from the textbook lesson to introduce the "Not Prefix Family" (dis, un, im, in) and to apply the Vocabulary Rule, which integrated context and morphemic cues. MC students then analyzed other words in the "not family" and were alerted to prefix exceptions (e.g. indoors, uncle). TV group students,*

on the other hand, had a 15-minute lesson on key vocabulary from the textbook (slavery, economy)*, in which they first predicted the meanings of the words and then compared their predictions to the glossary definitions of them. (p. 462)*

The students in the two instructional groups did not differ on a pretest of vocabulary and knowledge of social studies content. Several posttests were given, both immediately after and following a one-week delay. On a test of the specific vocabulary taught in the TV condition, students who had received this instruction performed significantly better than students in the MC condition. Although students in both groups were exposed to all of the words in the vocabulary test through their reading of the text, "the emphasis on those words provided to the TV group through the explicit, in-context, mini-vocabulary lessons clearly helped them learn their meanings"(p. 481). In contrast, students in the MC group were more able than students in the TV group to construct the meaning of new words that contained morphemes they had been taught during the instruction. Students in the MC group also showed greater ability than students in the TV group to infer the meanings of morphemically or contextually decipherable words presented in novel textbook excerpts on the delayed posttest. However, there were no differences between groups on the same test administered immediately after the training, making this finding somewhat equivocal. On a test of reading comprehension based on a different social studies chapter, the groups' performances did not differ, but the authors acknowledged that the instruction in word-learning strategies likely was not long-term or general enough to have a measurable impact on reading comprehension. They noted an insufficiency of research on the impact of classroom-embedded, systematic, and long-term instruction in word-learning strategies on reading comprehension outcomes.

CONCLUSIONS

Conclusions about strategies to teach essential content more powerfully

This section contained examples of three approaches to improve content-area teaching that, if widely implemented, could help to increase student learning of essential content. Of all the areas we have discussed, our treatment of this

area is most narrow; many, many more instructional improvements might be considered to increase the likelihood that students in content-area classes will understand and retain essential vocabulary, concepts, and facts in science, social studies, history, and other classes (Brophy & Good, 1986a; Brophy & Good, 1986b; Reynolds, 1992; Sanders & Horn, 1998; Stahl & Fairbanks, 1986; Wenglinsky, 2000).

Two studies in this section came from the work of Don Deshler and his colleagues at the University of Kansas Center for Learning; they are at present the single most active group studying Content Enhancement Routines that can be used by late-elementary, middle, and high school teachers. Currently instructional routines have been developed for (1) planning instruction; (2) exploring texts, topics, and details; (3) teaching concepts; and (4) increasing student performance. Details about instructional routines in each of these areas can be found at http://www.kucrl.org/images/presentations/CEoverview2007.pdf. In a real sense, some of these Content Enhancement Routines are similar to the reading comprehension strategies discussed earlier. That is, when teachers actively guide students in using the routines during class, students learn more of the content they are studying. Further, over time we might expect students to assume more responsibility for using these routines independently in a manner similar to the way that responsibility for executing comprehension strategies is gradually transferred from teachers to students. Thus, what begins as a teacher-guided learning strategy can become an information-processing habit in students who actively practice using the strategy in multiple contexts over time.

These content enhancement routines may be particularly attractive to content-area teachers because they are designed to increase learning of essential subject matter content. If they also produce a more generalized impact on reading comprehension when students work independently, they would provide a powerful means for both increasing learning of specific content and improving students' ability to learn from text.

Although improved content teaching may not be linked directly to improved literacy in the minds of many teachers, there is, as we have seen, compelling evidence that as students improve their knowledge in any specific area, their ability to comprehend text in that area improves. Thus, any recommendations for the long-term improvement of adolescent literacy must highlight the potential impact of more powerful teaching of essential content both within and across grade levels as one important way to help accomplish this goal.

SUGGESTIONS FOR FURTHER READING

We suggest the following documents for further reading:

Bulgren, J. (2004). Effective content-area instruction for all students. In T. E. Scruggs & M. A. Mastropieri (Eds.), *Advances in learning and behavioral disabilities: Vol. 17. Research in secondary schools* (pp. 147–174). San Diego: Elsevier.

Bulgren, J. A., & Lenz, B. K. (1996). Strategic instruction in the content areas. In D. D. Deshler, E. S. Ellis, & B. K. Lenz (Eds.), *Teaching adolescents with learning disabilities: Strategies and methods* (2nd ed., pp. 409–473). Denver: Love.

Hirsch, E. D. (2006). *The knowledge deficit: Closing the shocking education gap.* New York: Houghton Mifflin.

Lenz, B. K., Deshler, D. D., & Kissam, B. (2004). *Teaching content to all: Evidenced-based inclusive practices in middle and secondary schools.* New York: Allyn & Bacon.

Mittag, K. C., & Van Reusen, A. K. (1999). One fish, two fish, pretzel fish: Learning estimation and other advanced mathematics concepts in an inclusive class. *Teaching Exceptional Children, 31*(6), 66–72.

Schumaker, J. B., Deshler, D. D., and McKnight, P. (2002.) Ensuring success in the secondary general education curriculum through the use of teaching routines. In G. Stover, M. R. Shinn, and H. M. Walker (Eds.), *Interventions for achievement and behavior problems* (pp. 791–824).Washington, DC: National Association of School Psychologists.

Concluding comments: Improving literacy-related instruction in the content areas

An early and highlighted statement in the recent report on adolescent literacy published by the National Association of State Boards of Education asserts that:

Literacy is the linchpin of standards-based reform … the explicit instruction of literacy skills in the context of content-area learning supports student achievement not only in reading and writing, but across the curriculum. (2005, p. 18)

This is an extremely important idea, and one consistent with the major points we have made about the role of content-area teachers in supporting improvements in adolescent literacy. If content-area teachers adopt instructional practices that lead students to become more strategic readers, more able to think deeply and reason from text, more focused on high standards of comprehension and learning, more engaged in meeting important learning goals through their reading and study, and more able to retain essential content from their classes, many of the most important goals of educational reform and improvement will have been met.

Another important concluding point is that although the instructional recommendations for content-area teachers were treated separately in this document, we don't mean to imply that they should be implemented on a piecemeal, or fragmented, basis. In the interests of gradually improving literacy instruction by content-area teachers, schools or districts might need to provide professional development to support these practices in a planned, sequential way, but the goal should always be eventually to see all these practices used in every content-area classroom. In her study of teachers and schools that produced high literacy outcomes for their students, Judith Langer (2001) made the point this way:

It is important to emphasize that in the higher performing schools, the six features worked in conjunction with one another to form a supportive web of related learning. It would be erroneous to assume that the adoption of any one feature, however well orchestrated, without the others could make the broad-based impact needed to effect major change in student learning. Rather, it was the suffusion of the school environment with related and important learnings that were highlighted by the teachers and recognized by the students as making a difference. (p. 877)

Although Langer was referring to a different, but overlapping, set of instructional principles than those highlighted here, her observation is important in the present context as well. For example, many of the most effective procedures for helping students master the flexible use of multiple comprehension strategies entailed opportunities for extended discussion among students and between students and teachers. These discussions were structured by using the strategies to identify important content and meet authentic learning goals.

USING INTERVENTIONS WITH STUDENTS READING BELOW GRADE LEVEL

Introduction

This section of the document makes recommendations on instruction for 4th- to 12th-grade students who are reading below grade level. Like students reading at grade level, these students are very heterogeneous. Not only do they differ significantly from one another in their levels of reading difficulty, but they also differ from one another in the nature of their reading problems. Some students, for example those who fit the modern research-based definitions of dyslexia (Lyon, Shaywitz, & Shaywitz, 2003) or specific reading disabilities, have difficulties reading the words in text accurately and fluently but may have quite strong vocabulary and language comprehension skills. Many other students show reasonable proficiency in reading accuracy and fluency but struggle to comprehend grade-level text because of low vocabulary, or failure to employ effective reading strategies, or difficulties with the thinking skills required to construct meaning. Still other students struggle both with reading accuracy and fluency as well as with reading comprehension.

All these students, as adolescents, face the dual challenges of dramatically improving their reading skills while also keeping pace with grade-level expectations in the content areas, where reading is often the primary means of acquiring new information. Many of these students will require instructional support beyond that which content-area teachers can provide, both in the intensity of the instruction and in the focus and skill with which it is delivered. Each comprehensive document mentioned in this paper's introduction recommends that schoolwide systems for literacy instruction make some provision for more intensive, focused instruction for struggling readers. For example, *Reading Next* suggests:

> *Some students require or would benefit from intense, individualized instruction. This is particularly true of the student who struggles with*

decoding and fluency, but is also true of students requiring short-term, focused help. Such students should be given the opportunity to participate in tutoring, which need not occur only during the school day. (Biancarosa & Snow, 2006, p. 18)

The consensus document produced by the National Association of State Boards of Education titled *Reading at Risk: How States Can Respond to the Crisis in Adolescent Literacy* suggests that schools should have tiered interventions that allow significant increases in intensity of instruction for students based on their literacy needs:

These tiered interventions allow for adjustment of two key variables that account for the greatest portion of variance in student achievement: the amount of instruction (time) and the content of instruction. (2005, p. 35)

As one way to meet the literacy needs of struggling readers, the same document recommends "providing students who have greater literacy needs with more intensive intervention and supports beyond what can be provided in regular classes" (p. 35).

All struggling readers share a need for instruction that is sufficiently powerful to accelerate their development. In fact, these students must grow in reading ability *more rapidly than their grade-level peers* if they are to become proficient in understanding and learning from grade-level text. Struggling readers must make *more than* one year's growth in reading for each year of instruction, rather than simply the expected annual yearly progress in reading.

Most recent discussions of the instructional needs of adolescents reading below grade level emphasize that most can read words with reasonable accuracy and fluency but struggle to comprehend what they read. In fact, a frequently cited figure (Biancarosa & Snow, 2006; Kamil, 2003) states that no more than 10% of all struggling readers have difficulties with basic word-reading skills that are sufficiently severe to require focused instructional interventions. Although it is undoubtedly true that the most common instructional needs of adolescent struggling readers lie in the area of comprehension, the relative proportion of students with serious problems reading words in text is likely to vary from location to location. For example, a recent examination of struggling readers in urban high schools (Hock, Deshler,

Marquis, & Brasseur, 2005) showed that up to 65% of the students performed at very low levels on multiple measures of reading proficiency, including basic word-reading skills. The most important point from this brief discussion of instructional needs is that schools must be prepared to provide effective instruction in a broad range of reading skills if they are to help all their struggling readers progress toward grade-level reading ability.

Researchers have, in fact, examined a variety of strategies to improve the reading skills of older struggling readers. Interventions range from those that focus primarily on improving word-reading accuracy and fluency, to others that focus exclusively on helping students become more active and flexible in using comprehension strategies, to others that provide comprehensive support for word-level skills, vocabulary, and the use of comprehension strategies. Given the variety of reading problems older students face, a guiding principle is that interventions will be most effective if they focus on the critical dimensions of reading skill that interfere with a student's ability to comprehend grade-level text. Some students will need a great deal of instruction to improve their reading accuracy and fluency, while others will profit most from tutoring in the flexible use of reading comprehension strategies; still others will need a broad course of intensive intervention that integrates instruction in both word-level and comprehension skills and knowledge.

In a recent meta-analysis of the literature on interventions for older struggling readers, Edmonds, Vaughn, Wexler, Reutebach, Cable, Tackett, & Wick (in review) found moderate to strong effect sizes for improvements in reading comprehension from both interventions that focused on improving word-level reading skills and those that focused more on comprehension strategies, but the effects on comprehension were consistently larger for the comprehension-oriented interventions. This finding may result from the fact that most older struggling readers have the greatest difficulty with comprehending rather than decoding text, so that comprehension interventions directly address the needs of most students participating in these studies. For students with severe word-level reading problems, interventions that directly improve reading accuracy can have a significant impact on comprehension (Torgesen, 2005).

We will now describe some intervention studies with older struggling readers. We first describe interventions focused primarily on word-level skills and then consider research on comprehension instruction.

Interventions focused primarily on word-reading accuracy and fluency

Students in late-elementary, middle, and high school can have a variety of problems with reading accuracy and fluency. A relatively small number may continue to struggle with simple phonemic decoding strategies, even with words of a single syllable. For the most part, these students will have severe reading disabilities, or will have simply received weak instruction in decoding. Another, larger group has mastered basic decoding skills but lacks strategies for identifying complex, multisyllabic words. Students in this group struggle to identify the new or uncommon words they frequently encounter in content-area texts in middle and high school. Problems at this level arise both because students cannot confidently use a repertoire of word-analysis strategies with these new words and because many of the new words are outside their vocabulary. Finally, another large group of struggling adolescent readers do not read fluently. Although difficulties with reading fluency can be caused by a number of different factors (Jenkins, Fuchs, van den Broek, Espin, & Deno, 2003), a principal cause is a lack of accurate reading practice (Torgesen & Hudson, 2006).

A current unknown in adolescent literacy involves appropriate targets for reading fluency for students in middle and high school. When should we be concerned that a student's lack of reading fluency may interfere with his or her ability to comprehend and learn from text? We know that average levels of oral reading fluency stabilize at around 150 correct words per minute for students at the end of sixth, seventh, and eighth grades when reading grade-level text (Hasbrouck & Tindal, 2006; Tindal, Hasbrouck, & Jones, 2005; Yovanoff, Duesbery, Alonzo, & Tindal, 2005). Does this mean that we should work to bring all students to this level? The answer to this question will most likely turn out to be "it depends." As Keith Stanovich pointed out some years ago (1984), strong vocabulary, thinking skills, and motivation can often compensate for poor reading accuracy and fluency when the goal is to comprehend text. On the other hand, students who are weaker in content knowledge, vocabulary, and reasoning ability may need to read text more accurately and fluently in order to achieve similar levels of reading comprehension. The point here is that it is not possible at present to specify precise targets for reading fluency and accuracy in adolescent readers when they are reading grade-level text: We know that

extremely poor skills in this area can seriously disrupt comprehension, but we do not know precisely how strong students' skills in this area need to be before they are no longer a matter of concern. The answer is likely to vary with the individual student and with the nature of the literacy tasks he or she faces.

STUDIES

We turn now to five studies that have examined the impact of interventions focused primarily on word-level reading skills.

Torgesen, J. K., Alexander, A. W., Wagner, R. K., Rashotte, C. A., Voeller, K., Conway, T. (2001). Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches. *Journal of Learning Disabilities, 34,* **33–58.**

This study examined the effects of two intensive interventions for students with learning disabilities who had serious difficulties with basic reading skills. Sixty third-, fourth-, and fifth-grade students (average age 10 years), selected from learning disability classes in three elementary schools, participated. Students had been receiving special education services for an average of 17 months before this intervention study; when the study began their phonemic decoding skill fell below the first percentile, and their text-reading accuracy scores were below the sixth percentile.

Students were randomly assigned to one of two intervention approaches, and all students received 100 minutes of daily individual instruction (1:1) for eight weeks, for a total of 67.5 hours of instruction. Instruction was provided by skilled teachers, who were well trained and supervised in the delivery of the instruction.

One intervention, known as Auditory Discrimination in Depth (ADD; Lindamood & Lindamood, 1984) provided focused instruction in phonemic awareness and phonics, with most of the instruction directed to learning to decode individual words accurately. The other intervention, known as embedded phonics (EP) also provided explicit instruction in the phonic skills the students had not mastered, but it devoted more time to practicing the fluent recognition of high-frequency words and reading text. The authors characterized the essential differences between the two approaches as follows:

The amount of time spent on reading and writing connected text varied substantially between the two conditions. The ADD group spent only 5% of their time applying their word-level skills to reading and comprehending text. In contrast, the EP group spent 50% of their time in meaningful activities with connected text. The ADD group spent 85% of their time learning and practicing phonemic decoding skills out of the context of meaningful text, while the EP group, in the phonics mini-lessons and spelling practice, spent 20% of their time practicing on broadly similar activities. While the ADD group spent 10% of their instructional time on learning and practicing recognition of high frequency sight words, the EP group spent 30% of their time on this activity. Finally, the ADD group received instruction in phonemic awareness that taught children to use both kinesthetic and auditory cues for the identity of phonemes in words, while the EP group received only indirect training in phonemic awareness through instruction in "phonics" and phonemic spelling. (pp.40-41)

Both interventions had dramatic impacts on the reading skills of the students who received them. For example, phonemic decoding skills increased from below the 1st percentile to the 39th and 25th percentiles for the ADD and EP groups, respectively. Text-reading accuracy increased to the 23rd and 19th percentiles, respectively, and comprehension scores increased from approximately the 13th percentile to the 29th percentile in both groups. The figure below shows the students' growth before, during, and for two years after the intervention on a combined measure of reading accuracy and reading comprehension. The scores used to generate this figure were standard scores, based on a nationally normed sample. A standard score describes where an
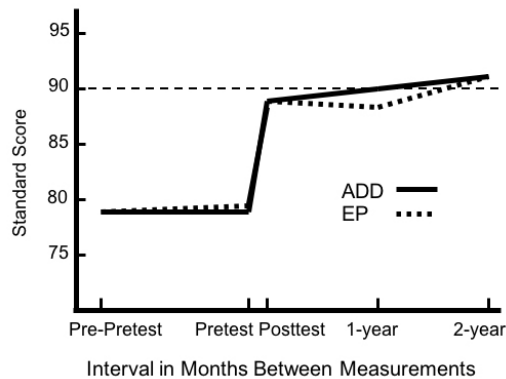
individual student falls within the overall distribution of reading scores for the sample on which the test is normed. In this case, the standard score representing average performance for the nationally representative standardization sample was 100. If standard scores increase, it means that students are closing the gap toward grade-level, or age-level, reading standards.

One of the most important observations from this figure is that the students' standard scores remained unchanged during the 17 months of special education services they received (they did not fall further behind but also did not close the gap), and that after the intervention, the standard scores continued to rise slightly, when about 40% of the students were no longer receiving special education services. Two years following the intervention, their combined reading comprehension and reading accuracy scores were slightly above the lower limits of what is often regarded as the average range of reading skill (standard scores between 90 and 110).

Bhattacharya, A., & Ehri, L. C. (2004). Graphosyllabic analysis helps adolescent struggling readers read and spell words. *Journal of Learning Disabilities, 37*, 331–348.

Older students struggling to read may know a relatively large number of words by sight. Teaching students to use the foundation of words they know to identify and manipulate word components may increase their word-recognition accuracy. These authors implemented such a strategy with students in grades 6–10 who were reading two or more years below grade level on the Word Identification subtest of the Woodcock Reading Mastery Tests—Revised (Woodcock, 1987). During four 30-minute, one-on-one sessions, students learned to syllabicate by pronouncing a word orally, counting its beats, matching each syllable to its corresponding graphemic component, then blending syllables to read the whole word aloud.

At the program's end, participants performed substantially higher than a similar group of nonparticipants on tasks that required decoding novel words. Program participants also scored significantly higher than nonparticipants on measures of word reading and spelling. Interestingly, students with more serious delays appeared to derive the greatest benefit.

Earlier studies (Johnson & Baumann, 1984) questioned the effectiveness of syllabication instruction in helping older students decode novel words, pointing out that segmenting a word into syllables accurately requires first pronouncing

the word itself. Bhattacharya and Ehri's findings do not support this concern: Students learning to syllabicate words using the vowel-oriented beats method were more successful than comparison students in reading real multisyllabic words, even when *encountering the words for the first time.*

In reconciling their findings with earlier research, Bhattacharya and Ehri suggested that differences in the nature of instruction provided may have been a factor. While the intervention in earlier studies emphasized dictionary-based syllabication rules and correct location of syllable boundaries, Bhattacharya and Ehri focused on strategies for making the graphosyllabic connection between the *spelling* and the *pronunciation* of a given word explicit (Ehri, 2002; Ehri & McCormick, 1998), thus providing students with tools to become increasingly familiar with common graphosyllabic segments and increasingly fluent in decoding multisyllabic words.

Homan, S., Klesius, J., & Hite, C. (1993). Effects of repeated readings and nonrepetitive strategies on students' fluency and comprehension. *Journal of Educational Research, 87,* 94–99.

Repeated reading as a means of improving automatic decoding and fluency first emerged in the late 1970s (Samuels, 1979) and quickly became the subject of considerable research. While much of this early work confirmed its utility for improving reading rate and reading accuracy (Herman, 1985; Knupp, 1988; Rashotte & Torgeson, 1985), one important question was left unanswered, namely, what part of repeated reading improves fluency—the repeated part or the reading part?

Homan et al. examined the effects of repeated reading and assisted nonrepetitive reading on fluency and comprehension with 26 below-grade-level sixth-grade students (reading at a beginning fifth-grade level or lower) attending Chapter I classes in a large metropolitan area. Students were randomly assigned to one of the two conditions. Instruction was delivered in groups of four to five students for 20 minutes three times weekly for seven weeks. Three teachers implemented the programs, and each teacher led both a repeated reading group and an assisted nonrepeated reading group. The repeated reading groups involved closely supervised student pairs reading the same passage four times to partners who were instructed *not* to provide assistance or corrective feedback. The assisted nonrepetitive reading groups participated in echo reading (students echo the teacher), unison reading (teacher and students

read together), and cloze reading (the teacher reads the selection, pausing randomly to let students read selected words aloud) of previously unread passages. Strategies were rotated; echo reading one day, unison reading the next day, and so on.

At posttest, both groups had significantly reduced their average number of reading errors and increased their average reading rates over pretest levels; however, there were no differences between the groups. Both made comparable gains in rate and accuracy. Both also improved in reading comprehension, although the gains made by the assisted nonrepetitive group were statistically greater than the average gains made by the repeated reading group. In discussing their findings, the authors argue for combining nonrepetitive approaches to fluency building with occasional repeated reading activities. The repeated reading approach offers some flexibility because it uses student pairs, freeing the teacher to work more intensively with individual students or small groups. The nonrepetitive approach, on the other hand, provides greater opportunity for teacher-guided reading and for immediate corrective feedback.

Penney, C. G. (2002). Teaching decoding skills to poor readers in high school. *Journal of Literacy Research, 34,* 99–118.

This study used the Glass-Analysis method (Glass & Glass, 1976) to teach phonemic decoding skills to students who continued to struggle with reading accuracy in high school. Students who received the training (n=21) were excused from reading or basic English classes to attend between 15 and 18 hour-long tutoring sessions; comparison students (n=12) remained in the regular classes. Tutoring sessions included oral reading of text alternated with Glass-Analysis word-identification drills. Reading material was selected from texts used in students' reading or basic English courses. Tutors noted errors during reading and made these words the subject of drills using the Glass procedures. Word drills focused on rimes and syllables and, to a lesser extent, onsets followed by a vowel sound (e.g., *tri* in *triad*). Students generally did not pronounce phonemes in isolation or blend phonemes into words. They did not segment syllables into onsets or rimes. Instead, the instructional emphasis was on using several words to illustrate a given pattern and encouraging the students to use these as models, or analogies, for identifying that same pattern in other words.

Students in the Glass-Analysis group made greater progress on the Woodcock Reading Mastery Test than did comparison students. They improved on the Word Identification subtest by an average of 10.6 raw score points, compared with an average gain of 4.1 points by the comparison group. The average gains on the Word Attack raw scores were 5.7 and 1.1, respectively. On Passage Comprehension, the treatment group increased by an average of 7.6 points, while the comparison group improved by 2.3 raw score points, on average. The increases were statistically significant and also appear to have practical significance, since they correspond to increases in percentile rank on these measures of between 11 and 19 points.

Torgesen, J. K., Myers, D., Schirm, A., Stuart, E., Vartivarian, S., Mansfield, W., Stancavage, F., Durno, D., Javorsky, R., & Haan, C. (2006). *Closing the reading gap: First year findings from a randomized trial of four reading interventions for striving readers.* **Volume II: National Assessment of Title I: Interim Report to Congress, Institute of Education Sciences. Retrieved November 2006 from http://www.ed.gov/rschstat/eval/disadv/ title1interimreport/index.html.**

This study is included here because it is currently the largest available in which word-level interventions have been studied in a randomized controlled experiment that provided substantial amounts of instruction to struggling readers. The study's results provide a "cautionary note" concerning the use of these types of instructional programs with heterogeneous samples of struggling readers in late-elementary school (fifth grade). The study was undertaken in order to examine the effectiveness of relatively intensive, small-group instruction for struggling readers in third and fifth grades. The study's basic rationale was the premise that instead of sending students who are still struggling with basic reading skills on to middle school, schools should do all they can to ensure that students leave elementary school as proficient readers.

The study involved 772 students in third and fifth grades who had been nominated by their classroom teachers as their most struggling readers. The students were also screened with a test of fluency in word-level reading skills and were included in the study if they performed below the 30th percentile. Forty-five percent of the students qualified for free and reduced-price lunch, and 27% were minority, predominantly African American. Thirty-three percent of the students had been identified as learning disabled or had other handicapping

conditions (e.g., speech or language disorders). The students attended 50 schools from 27 school districts in suburban Pittsburgh, Pennsylvania.

Random assignment occurred at two levels: (1) the 50 schools were randomly assigned to one of four interventions, and (2) within schools, students were randomly assigned to either the experimental or the control group. Students in the control group received both the classroom and intervention instruction they would have received if they were not participating in the study. Students in the experimental group were all taught in groups of three and received on average about 90 hours of instruction in daily 50-minute sessions from November through May. They were pulled out mostly from their regular classroom reading instruction to receive the interventions, so that students in both the experimental and the control groups received similar total amounts of reading instruction, although the experimental group received more small-group instruction than students in the control group (6.8 hours versus 3.7 hours per week).

The teachers in the study had been selected from nominations by their principals to participate in the study. They received approximately 30 hours of training before school started in how to implement the intervention to which their school had been assigned. Following that, they delivered closely supervised "practice instruction" to small groups of fourth-grade students not participating in the study for about eight weeks. During the actual study implementation, they received monthly training visits to ensure they continued to implement with fidelity the program to which they had been assigned.

The interventions used in this study were selected based on previous, less formal evidence of effectiveness with older students, and were all interventions that have been widely used in many schools; they included Failure Free Reading, Spell Read, Parents as Teachers (PAT), Corrective Reading, and Wilson Reading. As the study was originally conceptualized, two programs (Wilson and Corrective) were assigned to the "word-level instruction" condition and teachers were asked to implement only the parts of their programs that focused on building reading accuracy and fluency. The other two programs were assigned to the "word level plus comprehension and vocabulary" condition, and teachers were to roughly split the instructional time between instruction for reading accuracy and fluency and direct instruction to build comprehension and vocabulary. As it turned out, in three interventions (Wilson, Corrective, and Spell Read), teachers spent most of their time working on reading accuracy and fluency (average = 84%), while the teachers using Failure Free Reading spent 48% of their time on word-level reading skills.

Although the word-level interventions produced significant impacts compared with the control group on phonemic decoding, reading accuracy, and reading comprehension among the third-grade students, the only significant impact of the word-level interventions at fifth grade was on phonemic decoding. Fifth-grade students receiving the word-level interventions improved their phonemic decoding ability from the 32nd to the 48th percentile, improved their reading accuracy from the 23rd to the 29th percentile, and improved their reading comprehension from the 28th percentile to the 31st percentile. The Failure Free Reading intervention did not produce significant impacts on the study's major outcomes at either grade level.

Why are this study's results so different from the results of the first study described in this section? Observations indicated that the teachers implemented the interventions with reasonable fidelity. Although fidelity and ratings of teacher quality were not perfect, it seems likely that they were at least as high as most schools would expect if these interventions were implemented on a large scale. The instructional groups were also not as homogeneous in their beginning reading skills as was desired (within instructional groups, students ranged from about the 17th to the 50th percentile in their phonemic decoding skills at the beginning of instruction), but most of the instructional supervisors estimated that this range would be typical in a large-scale implementation of small-group instruction.

Although it is not possible to know for sure why the impact of the word-level interventions was not as powerful as in some previous studies (e.g., Torgesen, Rashotte, Alexander, Alexander, & MacPhee, 2003) with similarly aged students, a likely factor was that the students were less impaired in reading accuracy than had originally been anticipated. Although the students had been selected because they performed below the 30th percentile on measures of word-reading fluency, their phonemic decoding ability as measured by a test of accuracy was considerably higher (average phonemic decoding accuracy was at the 32nd percentile, and average word-reading accuracy was at the 23rd percentile). Thus, it is likely that most of the students did not really need the focused instruction in basic phonemic decoding skills in the three word-level interventions, and would have profited much more from work to build text-reading fluency and from the research-based instruction in reading comprehension that will be discussed next.

CONCLUSIONS

Conclusions about word-level interventions for adolescent struggling readers

There is suggestive evidence both in the meta-analysis referred to earlier (Edmonds et al., in review) and in some studies described in this section that, under the right conditions, intensive and skillful instruction in basic word-reading skills can have a significant impact on the comprehension ability of students in fifth grade and beyond. Presumably, these effects occur when the instruction is sufficiently powerful to substantially increase the percentage of words students can accurately identify in the text they are reading. If reading accuracy is already relatively high, then there may be little benefit in spending more time to improve it further; rather, time may be more profitably spent providing instruction and practice to improve other kinds of knowledge and skill important for reading comprehension.

The *Report of the National Reading Panel* (National Reading Panel, 2000) supported the use of repeated reading practice to improve reading fluency, but most of the studies summarized in that report examined performance of early elementary school students. In a more recent meta-analysis of studies of repeated reading that included students ranging from age 5 to 18, Therrian (2004) found that a number of specific instructional conditions influenced the size of the effects obtained from this method. One striking finding was that the impact of repeated reading interventions conducted by an adult was more than three times larger than those conducted by peers when the criterion was improvement in either fluency or comprehension on passages the students had not read previously. Another factor that produced higher impacts from repeated reading interventions was corrective feedback about word-reading errors. The study by Homan et al. (1993) described above raises the possibility that similar amounts of nonrepeated reading, when supported by a teacher to provide corrective feedback, can also have a significant impact on fluency and comprehension.

Interventions focused primarily on vocabulary and reading comprehension strategies

Students with reading difficulties may demonstrate adequate word reading, but not understand what they read because they lack necessary vocabulary or concept knowledge or make inadequate use of reading comprehension strategies. Of course, they may also perform poorly on assessments of reading comprehension because they are not engaged enough in the testing situation to process text deeply for meaning.

Many older students struggle with the meaning of domain-specific words and concepts like *metamorphosis, mitosis, parabola,* and *reparation*. While not exclusive to science, math, and history, these and similar words are likely to be first encountered during relevant content-area instruction. For struggling readers, mastering these new concepts and vocabulary may require additional instruction and extra practice.

Adolescent struggling readers also benefit from instruction on effective reading strategies; explicit and direct approaches to this instruction are most effective for students with reading difficulties (Gersten, Fuchs, Williams, & Baker, 2001; Jitendra, Edwards, Sacks, & Jacobsen, 2004; Mastropieri, Scruggs, Bakken, & Whedon, 1996).

STUDIES

We now consider five studies that have focused directly on instruction to improve reading comprehension in older students.

Bos, C. S., Anders, P. L., Filip, D., & Jaffe, L. (1989). The effects of an interactive instructional strategy for enhancing reading comprehension and content area learning for students with learning disabilities. *Journal of Learning Disabilities, 22,* 384–390.

It's clear that vocabulary and comprehension are closely related (Schatschneider et al., 2004). The reasons for this relationship are not fully understood, and several theories have been advanced. One school of thought, sometimes referred to as the *instrumental/access* hypothesis, assumes that reading comprehension is largely the product of knowing the meanings of words and being able to access them while engaged with text. According to this view, improving comprehension by improving vocabulary is best achieved by learning the meanings of more

words and increasing the ease with which meanings can be recalled.

A second school of thought also places value on knowing word definitions. The *knowledge* hypothesis, however, sees vocabulary as a proxy for concepts that are represented in the reader's knowledge structures. The knowledge hypothesis would appear more useful than the instrumental/access hypothesis for thinking about the types of vocabulary that students encounter during content-area instruction, because the concepts encountered in science and social studies can be accurately understood at many different levels of complexity. Mitosis, for example, may be defined correctly though very differently by a Ph.D.-trained biologist and a seventh-grade science student.

Bos et al. tested this assumption by comparing two instructional techniques, one based on the instrumental/access hypothesis and one on the knowledge hypothesis. Fifty middle school students with learning disabilities who were reading from three to seven years below grade level were randomly assigned to either an experimental or a comparison group. Students in the knowledge hypothesis treatment were taught to use semantic feature analysis to map the relationships of important concepts from a selected passage and the vocabulary used to describe or explain each concept. Students and the teacher-researcher collaborated in completing a relationship chart to activate prior knowledge and connect it to newly introduced concepts and vocabulary.

Comparison students completed a dictionary activity that included a short discussion about the reading passage followed by independent use of the dictionary to define new vocabulary and write original sentences using each new word. The same vocabulary list was the basis for both activities, and the same amount of instructional time was spent in each condition. Teacher-researchers were trained in both strategies and taught equal numbers of experimental and comparison groups.

Students in the experimental group outperformed students in the comparison group on measures of vocabulary and conceptual knowledge/comprehension administered at the end of the instructional sessions. When prior knowledge was controlled statistically, the group differences were very large (more than 1.5 standard deviations). When students were evaluated again six months after the study, differences in the average performance of the two groups were unchanged; on both outcome tests, the average score for both groups was similar to the respective score on the earlier measure and the effect sizes were very large.

In discussing their findings, the authors cite differences in the *depth of processing* as a likely cause for the relative effects of the two approaches. The semantic feature analysis provided a structured setting in which students actively processed new concepts and vocabulary by making connections to what they already knew. This condition also required greater mental effort from participants. The researchers reported that students' comments varied considerably depending on their group assignment. Participants in the experimental group complained about the difficulty of the activity and asked to return to the usual practice of looking up definitions and writing sentences, which did not require as much effort. Students in the comparison group commented on the ease of the assignment.

Alfassi, M. (1998). Reading for meaning: The efficacy of reciprocal teaching in fostering reading comprehension in high school students in remedial reading classes. *American Educational Research Journal, 35,* 309–332.

Several approaches for teaching comprehension strategies to older struggling readers have been the subject of research. Reciprocal teaching (Palincsar, Brown, & Martin, 1987), developed for students who can decode but have difficulty understanding text, is a small-group instructional method built around a series of expository reading passages. Initially, the teacher models and encourages the use of effective strategies. During subsequent lessons, students assume the role of facilitator, leading group discussions and providing models of effective strategy use. Each student's turn as facilitator gives the teacher opportunities to scaffold the group's dialogue and to monitor each participant's internalization of effective reading strategies. Students rely less on teacher-provided scaffolding as they become increasingly aware of their own thinking about the text and more skilled in deploying appropriate strategies.

In this study, the researcher used a reciprocal teaching approach with students in remedial reading classes in a traditional high school. Participants were considered by their teachers to be adequate decoders but were at least two years below grade level in reading comprehension, based on standardized test scores. Five classes of 10 students received 15 consecutive 45-minute sessions that focused on explicit strategies and methods for self-monitoring comprehension. Students in the comparison classrooms received typical instruction and were not exposed to the strategy instruction embedded in the reciprocal teaching model.

Alfassi found that students receiving the intervention outperformed those in the comparison group by just over one standard deviation on a researcher-developed measure of reading comprehension. However, there were no differences following the intervention on the Vocabulary or Comprehension subtests of the Gates-MacGinitie Reading Test, a widely used standardized measure of reading achievement.

The approach Alfassi described was developed for and implemented in real classrooms. It consumed relatively little class time and used content-area materials to promote general comprehension strategy use and to foster knowledge acquisition specific to the class in question. The results suggest that combined strategy instruction using a reciprocal teaching approach is feasible and holds promise for students with diverse skill levels, at least in its immediate impact on students' ability to comprehend and learn from their texts. Interventions like this one may need to be extended over a longer period of time before they reliably produce effects on general or standardized measures of reading comprehension.

Fuchs, D., Fuchs, L., & Kazdan, S. (1999). Effects of peer-assisted learning strategies on high school students with serious reading problems. *Remedial & Special Education, 20,* 309–319.

Peer-assisted learning (Greenwood, Delquadri, & Hall, 1989) may be another means for improving struggling older readers' reading and comprehension strategies. In general education classes, peer assistance often means tutoring of less able students by more capable classmates, an approach that can yield long-term, sustained gains in reading achievement at the elementary school level, in urban, low-socioeconomic settings with large numbers of at-risk students (Greenwood et al., 1989). It has also proven effective with struggling readers and students with learning disabilities (LD) in elementary-grade general education classrooms (Fuchs, Fuchs, Mathes, & Simmons, 1997), again with the more capable students supporting the struggling students.

In this study, Fuchs and his colleagues used a peer-assisted approach to teach and practice strategic reading skills, including retelling, summarizing, and predicting, with 138 students in nine remedial and special education classrooms (average of about 15 students per classroom). Five 35-minute sessions were provided every two weeks for 16 weeks. All students participated, but only those reading below sixth-grade equivalence were given pretests and posttests.

Each session had three parts: 10 minutes of sustained partner reading to improve fluency and accuracy; 10 minutes of paragraph shrinking, where students summarize and identify main ideas; and 10 minutes of prediction relay, where students' predictions are either confirmed or disconfirmed by the peer tutor, based on subsequent sections of the passage. At the end of the intervention, students were given a posttest that required them to read aloud for three minutes and respond orally to 10 questions that required them to recall story information.

Students in the peer-assisted learning classrooms outperformed students in the nine comparison classrooms on the question-answering task, responding correctly to 7.2 questions at posttest, compared with 6.6 correct responses, on average, for students in the comparison classrooms (average scores at pretest were 5.8 and 6.1, respectively). These were students with learning disabilities who were given a peer-assisted intervention; the peers were other students with learning disabilities. If these older readers had been provided with at-grade-level tutors able to correct word-reading errors and model fluent reading, the results may have been stronger, similar to those of peer-assisted LD students in regular education settings at the elementary school level (Fuchs et al., 1997).

Wilder, A., & Williams, J. (2001). Students with severe learning disabilities can learn higher order comprehension skills. *Journal of Educational Psychology, 93,* 268–278.

Stories are an important part of schooling. They are central to the study of English literature and are used in many content-area classes, such as history and social studies. Even classes that typically rely on expository text, like life and earth science, use narrative to illustrate the ways in which general knowledge is related to real-life situations. This study evaluated an instructional program designed to help middle school students with severe learning disabilities learn to identify and articulate story themes.

Most instruction, however, focuses on a story's plot rather than its theme (Anderson & Pearson, 1984). Plot is the sum of a series of events, generally involving a conflict and a resolution. Following a plot requires an attention to detail, an ability to sequence, and the capacity to infer the more subtle aspects of its development. Depending on the story's difficulty, this may be no small undertaking, and for students with severe learning disabilities it often

represents a serious challenge. Still, the plot of a story is relatively concrete, particularly when compared with the more abstract notion of *theme*. Wilder and Williams elaborate:

> *Comprehension at the abstract theme level represents a higher order understanding of text requiring instruction that is not limited to teaching story structure and plot-level comprehension. One must also have an understanding of the overall story theme in order to relate it to other stories and to real-life experience. … What is a theme? The* theme *of a story is a commentary attached to a core concept (Williams, Brown, Silverstein, & deCani, 1994). Readers identify two plot components—the central story event and the story outcome— and evaluate those components in terms of a moral judgment. The combination of the plot pattern (i.e., the core concept) and the moral judgment results in the theme (Dorfman & Brewer, 1994). (p. 269)*

To evaluate the intervention, the researchers randomly assigned 10 intact classrooms to one of two groups, either a theme identification group (n=47) or a story comprehension group (n=44). The number of students in each theme identification classroom ranged from 7 to 11. In the story comprehension classrooms, numbers ranged from 7 to 10. The program comprised 12 lessons, each organized around a single story and consisting of seven components: (1) engaging in a prereading discussion of the lesson's purpose and the story's topic, (2) reading the story, (3) discussing the important story information using organizing questions (the theme scheme), (4) identifying a theme for the story and generalizing it so it is relevant to a variety of situations, (5) applying the generalized theme to real-life experience, (6) doing an activity, and (7) conducting a review.

The theme and the comprehension groups used the same 12 stories. Students in the comparison group received traditional comprehension instruction that emphasized vocabulary and plot. Instruction was based on strategies drawn from the teacher's manuals of the locally adopted basal readers. Each lesson focused on prereading vocabulary development, postreading discussion and questions, and an activity.

At the end of the 12 weeks, students in the theme group were much more successful when asked to define the "concept of theme" than their counterparts in the comprehension group. They were also significantly more

successful at identifying an earlier-discussed theme in a previously unread story and at identifying a novel theme (i.e., one not taught during the program) from an unread passage. In concluding, the authors suggest that the study

> *demonstrates that students with severe learning disabilities can be taught a higher order comprehension skill and that they can generalize what they learn in instruction to other stories and to real-life experience. A second conclusion seems warranted as well: Given that the teachers who implemented this program were not trained extensively and yet were able to teach the program effectively, it appears that teachers with minimal specific training in theme comprehension can effectively administer the program. Informal feedback from posttest query of the students and from program evaluations by the teachers indicated that both students and teachers found the program to be educationally beneficial and enjoyable. (p. 275)*

Students with severe learning disabilities have many and varied instructional needs, and the tendency often is to limit instruction to low-level tasks. This study suggests that explicit teaching of higher-level comprehension skills is both possible and effective.

Jitendra, A., Hoppes, M. K., & Xin, Y. P. (2000). Enhancing main idea comprehension for students with learning problems: The role of a summarization strategy and self-monitoring instruction. *The Journal of Special Education, 34,* 127–139.

This study investigated the effectiveness of a program to improve the reading comprehension of middle school students with learning and behavioral disabilities. The program was designed not only to teach important skills but to facilitate their transfer to new settings and their generalized use with newly encountered text.

Thirty 30- to 40-minute sessions were provided to groups of six to eight students. Lessons focused on teaching students to identify the subject of the passage and the action by applying the rule "Name the person and tell the main thing the person did in all the sentences." Self-monitoring cards were used throughout the 30 sessions to prompt students to apply the strategy. The cards required the student to place check marks beside each of four critical steps:

read the paragraph, use the card to recall the strategy, apply the strategy, and select or write the main idea.

Students were randomly assigned to either the group receiving the strategy instruction or to the comparison group, which received regular instruction without the strategy instruction. Students in both groups were given a pretest and a posttest; a delayed posttest was also given. Three equivalent tests were developed to measure comprehension. Each included 36 main idea questions based on narrative and expository passages. Twelve items on each test, similar to items used during instruction, were used to assess students' application of learned skills. A second set of 12 items, based on narrative passages from leading basal reading series, tested students' transfer of the instruction to passages that were less similar to those used in the training but still within the same genre. The final set of 12 questions evaluated far transfer. These items were expository, derived from popular social studies textbooks. Half of the items were multiple choice; the other half required students to generate the main idea for a given passage. Passages also varied in terms of explicitness. The main idea in about a third of the items was explicitly stated; in the others, the main idea was implied.

At posttest, the students in the main idea strategy group significantly outperformed comparison students on test items that required selecting a correct response (i.e., multiple-choice items). Treatment group students also significantly outperformed comparison students on production test items, though the magnitude of the effect was somewhat smaller than on the multiple-choice items. The treatment group also maintained its improved performance on the delayed posttest.

On the 24 near- and far-transfer items, the treatment group significantly outperformed students in the comparison group on posttest and delayed posttest, but only on the multiple-choice items. Neither group demonstrated posttest or delayed posttest gains on the transfer items when the responses required the *production* of a main idea, possibly because of deficits in written language common to students with learning disabilities.

CONCLUSIONS

Conclusions about vocabulary and reading comprehension instruction for struggling adolescent readers

The current research literature contains numerous examples of procedures that can affect the reading comprehension skills of adolescent struggling readers through instruction in vocabulary and reading comprehension strategies. Applied systematically and explicitly in an engaging instructional context, a program of instruction using some combination of these strategies should succeed in increasing the reading comprehension of students reading below grade level in late-elementary, middle, and high school.

One limitation of the current research is that effects on comprehension are currently substantially stronger for experimenter-developed measures of comprehension than for standardized measures that assess generalized reading comprehension. For example, the meta-analysis of intervention methods for adolescent struggling readers conducted by Edmonds et al. (in review) found that effect sizes on reading comprehension were substantially larger (1.19) with experimenter-developed measures of reading comprehension than with standardized measures of general reading comprehension (effect size = .47). This means that the impact on comprehension is much greater on tests that are similar to those used in the training itself than on tests that use standard methods for assessing comprehension, such as state accountability tests. However, even on standard measures of reading comprehension, the impact of research-based instruction in reading comprehension strategies is moderate for struggling readers, which means that its wide and faithful application in schools should produce a meaningful impact on the comprehension performance of these students.

Concluding comments:
Using interventions with students reading below grade level

When considering findings from the studies outlined in this section, conclusions from the broad review documents mentioned earlier, and findings from the meta-analyses that have been conducted specifically on instructional research with struggling readers, we can draw several conclusions about effective instruction for these students.

First, schools need to be able to provide high-quality instruction in both word-level and comprehension skills in order to meet the diverse needs of students who continue to struggle with reading in late-elementary, middle, and high school. Because struggling readers differ in both the degree and the nature of their reading problems, their instructional supports need to vary in intensity and focus. Some students with adequate word-level skills who perform slightly below grade level might be effectively served through differentiated instruction in content-area classes. Many other students, however, will need much more intensive reading instruction than content-area teachers alone can provide. There is a clear role for reading specialists in middle and high school to provide intensive, focused instruction to students with serious gaps in their reading skill, including students with learning disabilities.

Second, with the exception of instruction to increase reading accuracy and fluency, the content of effective literacy instruction for students reading below grade is very similar to that recommended for students reading at grade level and above. As with students reading at grade level, general recommendations include instruction to help students apply reading comprehension strategies more effectively before, during, and after reading, instruction to increase the breadth and depth of vocabulary knowledge, instruction and assignments that are motivating and engaging, and instruction that improves knowledge of content-area concepts and facts.

The overlap between the instructional needs of struggling readers and those reading at grade level suggests the opportunity for carefully coordinated instruction between reading specialists in intensive reading classes and content-area teachers in their subject areas. Many struggling readers may require support beyond that which content-area teachers can provide to become proficient in the use of specific comprehension strategies (more explicit and intensive instruction), but it would seem immensely helpful if content-area teachers were explaining and reinforcing the use of similar strategies with textbooks in social studies, history, science, and so on. In fact, given the problems of obtaining strong impacts on measures of general reading comprehension noted earlier, extending both instructional and practice opportunities in the use of effective reading strategies for struggling readers into the content areas seems a very important instructional innovation for middle and high school.

Third, it is clear that we need more research conducted in real classroom settings over a substantial period of time before we can realistically estimate the extent to which instruction in reading accuracy and fluency, as well as other areas important for reading comprehension, can actually close the reading gap for students with varying degrees of reading impairment. Most studies conducted thus far have identified instructional procedures that are more effective than a control condition involving "traditional instruction." However, very few of these studies have used standardized measures that provide standard scores or percentile ranks that allow us to estimate the extent to which students have become better readers in relation to grade-level reading standards. Further, we are not aware of any studies that have examined changes in performance on state-mandated accountability measures as a result of exposure to the kinds of instructional improvements recommended in this document. Without research with these kinds of measures, it is difficult to specify the necessary instructional conditions for students with various levels and types of reading impairment to make significant improvements toward grade-level reading standards.

SUPPORTING LITERACY DEVELOPMENT IN ADOLESCENT ENGLISH LANGUAGE LEARNERS

Introduction

The design and delivery of literacy instruction for adolescent English language learners (ELLs) must consider the unique needs of this population and the individual differences among these learners. They include U.S.-born children of immigrants, immigrant children who enrolled in U.S. schools as early as kindergarten, those who first enrolled as adolescents in middle school, and even very recent arrivals to the U.S. enrolled in high school. Moreover, those ELLs who enter U.S. schools after kindergarten differ significantly in their native language literacy and formal schooling experiences.

Because of this variation among adolescent ELLs, several factors specific to this population influence their English oral language proficiency and reading ability and, in turn, their academic achievement. In particular, age of arrival, educational history, native language ability and literacy, placement and instructional context in U.S. schools, and their sociocultural background each affect academic achievement and outcomes in students' second language (August & Shanahan, 2006). Considering these factors is of prime importance when planning appropriate instruction to promote the academic success of adolescent ELLs.

Research on instruction for ELLs, combined with data on their overall academic achievement, reveals at least three important principles to consider in the context of guidance for practitioners and policymakers:

- **Research-based practices that have been identified to ensure the development of successful reading skills in monolingual students may also benefit ELLs.** Instruction that includes the major elements that contribute to reading success among English-proficient children has also been linked to success in English reading for ELLs. For young readers,

there is considerable evidence that the fundamental processes of learning to read do not differ among alphabetic languages (Ziegler & Goswami, 2005). At the same time, the complexity of academic language in middle and high school classroom texts, combined with the wide variability in ELLs' language and academic backgrounds, are reasons to emphasize the need for systematic and explicit vocabulary and comprehension instruction, in all content areas, for adolescent ELLs.

- **ELLs draw on a host of linguistic, metacognitive, and experiential resources from their first language according to their proficiency level.** Oral language proficiency and reading comprehension are multifaceted and demand that students integrate many cognitive and linguistic skills. As outlined in this document's first section, literacy development, whether in one's first or second language, is influenced by the learner's oral proficiency and metacognitive skills associated with reading. In the case of adolescent ELLs, the ability to draw on native language skills relates directly to the amount of instruction they have received in that language (Genessee, Lindholm-Leary, Saunders, & Christian, 2006). More specifically, a person's ability to transfer a concept's meaning or apply a skill from one language to another depends on the degree to which his or her oral language and reading skills are developed in the native language and on his or her background knowledge on the topic at hand.

  These relations among languages signal to educators that, with appropriate instruction and accommodations: (1) adolescent ELLs with good reading comprehension skills and behaviors in their first language— such as the ability to draw inferences from text and to monitor comprehension strategically—can apply them to their English language reading, and (2) ELLs can use knowledge structures and concepts that are well developed in their first language to build their knowledge in English rapidly by learning new (i.e., English language) labels. Put another way, ELLs who already know and understand a concept in their first language have a far simpler task to develop language for the concept in English than do students who lack knowledge of the concept in either language. Therefore, adolescent ELLs with proficient oral language skills and reading skills and behaviors in their first language should be taught to draw on that knowledge and apply it to the task of reading in English (Burt, Peyton, & Adams, 2003).

- **Curricular design and delivery for adolescent ELLs must follow the principles of differentiated instruction.** Decisions about how instruction is delivered must be guided by the student's particular needs. We know that individual differences have a significant relationship to literacy development in English speakers (August & Shanahan, 2006), a finding that also applies to ELLs. Therefore, accommodations, modifications, and interventions should be provided as necessary depending on the student's response to instruction and the individual skills, abilities, knowledge, and sociocultural factors that affect educational success. For example, learners with limited native language literacy or whose literacy skills are in a non-Roman alphabetic language may need more practice with letter recognition and phonological processing than those with higher levels of literacy or prior experience with an alphabet that overlaps significantly with English. Similarly, newcomer adolescents typically have many specific instructional needs related to academic language in English—such as limited vocabulary, incomplete command of grammar structures, and limited knowledge of text structures and writing conventions—each of which must be met to ensure content learning. Given this diversity in the ELL population, instructional decisions should consider questions such as these:

  - How long has the student been receiving formal instruction in English?

  - What are this student's specific areas of difficulty or weakness?

  - Does the student have difficulties in most academic areas?

  - Has the student ever received supplemental or targeted instruction in the area of difficulty or weakness?

  - How different is the student's native language alphabet from that of English?

  - Does the student display specific strengths related to achievement in the area(s) where he or she is experiencing difficulty?

Evidence-based recommendations

The recommendations for effective literacy instruction for adolescent ELLs reflect a developmental perspective that recognizes the multifaceted nature of literacy development, its interrelatedness with oral language proficiency, and

the individual factors that influence students' literacy outcomes. Although many factors influence adolescents' success in middle and high schools, the recommendations that follow focus on the core cognitive and linguistic skills required for academic success in content-area classes. They focus on the key outcome of reading comprehension, especially comprehension of sophisticated and diverse content-area texts.

Although there have been few empirical evaluations of instructional approaches for adolescent ELLs, two growing bodies of research are relevant to decisions about instruction for ELLs. The first focuses on the developmental processes that underlie ELLs' literacy acquisition and attainment, and the second focuses on the specific case of adolescent literacy. This latter body of research is based on studies conducted with native English speakers and was discussed in the first section of this paper. It is relevant here because many native English-speaking adolescents share similar struggles with literacy and weaknesses in academic language and vocabulary. Some of what has been outlined earlier in this document will be restated here since it applies in particular to the instructional needs of ELLs.

The efficacy of each recommendation that follows depends on its integration into a comprehensive program of instruction. At the same time, insofar as the recommendation rests on scientific research in other populations, the need to monitor and evaluate its effectiveness for the specific population of adolescent ELLs cannot be overemphasized. The efficacy of some recommendations also rests upon careful analysis of the sources of students' literacy difficulties and their alignment to the instructional approach or intervention.

Content-based language and literacy instruction

To meet the increasing literacy demands of the workplace, all students must leave high school capable of speaking and understanding academic English, reading complex texts for understanding, and writing expository texts with proficiency. Meeting such a goal is not simple, particularly for a large number of adolescent ELLs whose vocabulary knowledge and oral language proficiency are less developed than their native English-speaking peers. Further, newcomer adolescent ELLs in particular must simultaneously acquire literacy skills, content knowledge, academic vocabulary, command of language structures, and strategic thinking skills in a relatively short period of time.

Given the magnitude of the task adolescents face to be successful, the growing consensus is that preparing *all* students—especially ELLs—for academic reading tasks requires embedding literacy instruction in content-area classes. In these classes, much of the curriculum is delivered through textbooks that regularly use language structures and specific terms unique to print—much of which many ELLs have never encountered. Unlocking the meaning of these structures and terms is crucial to developing background knowledge and making meaning from the text.

A content-literacy approach aims for successful comprehension of texts (e.g., a social studies textbook, a science article, a textbook with math word problems). In a content-based approach, teachers identify two objectives for each lesson: one for content learning and another for language and literacy learning. This process is central to the sheltered instruction (SIOP) model, an instructional approach designed to meet the needs of ELLs in content-area classes (Echevarria, Vogt, & Short, 2004). In the SIOP model, both objectives are explicitly stated at the beginning of the lesson-planning process, and teachers address both content through language and language through content. As an example of the latter, reading comprehension skills may be improved by building background knowledge before reading or by teaching conceptual vocabulary that is central to the topic. Additionally, explicit instruction in more specific aspects of language is contextualized in authentic communication. For instance, students can learn about cause-and-effect sentence structures to write about the causes of the Civil War or can learn the comprehension strategy of visualizing and using graphical organizers to better understand, explain, and solve geometry word problems.

Academic oral language instruction

Whether the task is comprehending a challenging text, composing an essay for a state writing assessment, or participating in a classwide discussion on any given topic, students require proficiency in academic oral language. Oral language proficiency is a multidimensional construct that includes various aspects of vocabulary knowledge, grammar, and listening comprehension. There is a well-demonstrated relationship between oral language skills, particularly vocabulary, and reading comprehension among both native English speakers (e.g., Freebody & Anderson, 1983) and ELLs (see Geva, 2006 for a review).

Although few would disagree that vocabulary instruction for adolescent ELLs is necessary, the data on these learners' academic achievement, combined with research evidence, suggest that current instructional practices do not address the necessary complexity and depth of vocabulary knowledge ELLs need to succeed academically (e.g., Constantino & Levadenz, 1993).

Researchers examining vocabulary development make two important distinctions. First, they distinguish between *breadth* of vocabulary knowledge (the number of words students know) and *depth* of vocabulary knowledge (the degree of knowledge of a word). For example, readers may know a word well enough to recognize its appropriate use in context but lack sufficient knowledge to define it out of context, use it regularly in their own speech or writing, or distinguish between the word and closely related synonyms. ELLs are likely to be limited in both breadth and depth of word knowledge. Oral language instruction must be complex enough to address these weaknesses.

Second, researchers distinguish between teaching words that are new labels for existing concepts and teaching words that are new concepts. Generally, learning a new label for an existing concept is easier and requires much less intensive instruction than learning a new concept. This distinction is particularly important for newcomer adolescents who may arrive at school with a large number of well-developed concepts, not only for daily objects and experiences but also for academic topics. These students need only be taught labels for these concepts in their new language. On the other hand, all newcomer adolescents, like all other adolescent learners, require in-depth instruction in new academic concepts about which they have not previously learned.

As for native English speakers, effective vocabulary instruction for adolescent ELLs is explicit, systematic, extensive, and intensive. In addition to carefully selecting words to teach as part of vocabulary instruction, teachers must strike a balance between *direct teaching of word meanings in meaningful contexts* and *teaching word-learning strategies*. Effective word-learning strategies include using contextual cues to determine a word's meaning (Fukkink & de Glopper, 1998; Swanborn & de Glopper, 1999), having knowledge about morphology or particular word parts (Carlo, August, & Snow, 2005; Kieffer & Lesaux, in press; Nagy, Berninger, & Abbott, 2006), and using aids such as dictionaries and glossaries (Beck, McKeown, & Omanson, 1987; Nagy, Winsor, Osborn, & O'Flahavan, 1993). Depending on their native language oral and

reading proficiency, some adolescent ELLs may benefit from strategies that draw on cognate knowledge, that is, an understanding of words with similar orthographic structures in English and their native language, such as the relationship between *information* in English and *información* in Spanish (e.g., García & Nagy, 1993; Nagy, García, Durgunoglu, & Hancin-Bhatt, 1993).

Direct, explicit comprehension instruction

Consistent with findings from research conducted with native English speakers reviewed earlier in this document, research also indicates that ELLs benefit from direct, explicit instruction in reading comprehension (Klingner & Vaughn, 1996; Shames, 1998). There is evidence that many ELLs read words with accuracy and even automaticity but have difficulty with other aspects of comprehension (e.g., monitoring understanding while reading, reading strategically) and ultimately struggle with reading comprehension (Lesaux, 2006). The higher incidence of comprehension difficulties in the ELL population compared with the population of native English speakers, as evidenced by the disparities in passing rates on high-stakes assessments and the National Assessment of Educational Progress (NAEP), highlights the need for significant emphasis on reading comprehension instruction across classrooms and types of text. Although many adolescents need this instruction, because of limited vocabularies and related background knowledge, adolescent ELLs tend to be in even greater need of effective compensatory strategies for making sense of text. Fortunately, recent arrivals with uninterrupted schooling in their native language typically have cognitive and metacognitive skills they can leverage to increase comprehension. In that light, effective comprehension instruction is explicit, purposeful, engaging, and metacognitive. Although some students may have effective, automatic, and unconscious strategies and approaches to reading comprehension, most students, particularly adolescent ELLs, need direct and explicit instruction and practice in order to use them successfully.

Much of what we know about effective comprehension instruction for native English speakers is theoretically justifiable for ELLs and likely to be effective. For example, reciprocal teaching, a scaffolded approach to teaching comprehension strategies originally designed for native English speakers, has been shown to be effective for ELLs (Klinger & Vaughn, 1996). In reciprocal teaching, which is aimed at teaching students to actively process text, the teacher models four critical strategies (questioning, clarifying, predicting, and

summarizing) and slowly transfers responsibility for implementing these strategies to students working in small groups. By using the strategies in extended discussions, students learn to apply them flexibly and independently. This approach allows for explicit instruction in comprehension strategies, teacher support for language demands, and extensive opportunities for students to use academic language with peers.

Targeted interventions for ELLs with very limited literacy skills

As noted, the population of adolescent ELLs varies widely with respect to schooling experiences and oral language and reading proficiency. Those students with well-developed native language literacy are likely to make more rapid progress in learning to read in English, whereas those students who arrive with limited formal schooling may struggle to decode simple words in either language. The ability to decode words is necessary for comprehension among all students, and not all students will develop these skills without explicit instruction. Students who struggle with decoding skills require targeted, systematic phonics intervention to benefit the most from higher-level reading comprehension instruction. The incidence of such limited basic literacy skills among adolescent ELLs is an open question.

Effective interventions for older students who struggle to decode words are similar to those found to be effective with younger children insofar as they provide systematic and explicit instruction in the code of English reading. Most likely, this instruction will need to be conducted in small-group or one-on-one settings in order to be intensive and to avoid using whole-class time on instruction that is unnecessary for most students.

SUGGESTIONS FOR FURTHER READING

For additional discussion of issues and recommendations for improving academic literacy in adolescent ELLs, we recommend four brief documents:

Francis, D. J., Rivera, M., Lesaux, N., Kieffer, M., & Rivera, H. (2006a). *Practical guidelines for the education of English language learners: Research-based recommendations for instruction and academic interventions.* Portsmouth, NH: RMC Research Corporation, Center on Instruction.

Francis, D. J., Rivera, M., Lesaux, N., Kieffer, M., & Rivera, H. (2006b). *Practical guidelines for the education of English language learners: Research-based recommendations for serving adolescent newcomers.* Portsmouth, NH: RMC Research Corporation, Center on Instruction.

Francis, D. J., Rivera, M., Lesaux, N., Kieffer, M., & Rivera, H. (2006c). *Practical guidelines for the education of English language learners: Research-based recommendations for the use of accommodations in large-scale assessments.* Portsmouth, NH: RMC Research Corporation, Center on Instruction.

Short, D. J., & Fitzsimmons, S. (2006). *Double the work: Challenges and solutions to acquiring language and academic literacy for adolescent English language learners.* A report to the Carnegie Corporation of New York. Washington, DC: Alliance for Excellent Education.

Concluding comments:
Literacy instruction for English language learners

Their educational history and second language development give adolescent ELLs unique needs that must be of primary consideration when designing any instructional program or approach. Given the variability in this population with respect to first and second language oral proficiency and reading ability, literacy instruction for adolescent ELLs must reflect the principles of differentiated instruction. Similar to effective practices for monolingual students, instruction for ELLs must be driven by an understanding of strengths and weaknesses that the student brings to the learning task, his academic achievement, and the instructional leverage points on which to base the approach or intervention. Thus, in addition to having insight into a learner's language and reading development, practitioners must ensure that interventions are developmentally and linguistically appropriate.

The objectives of any instructional approach or intervention for ELLs must reflect, directly or indirectly, success in content-area learning as the ultimate goal of middle and secondary schools. In order to be successful, all ELLs must be able to access content-area knowledge through text and classroom discussion; to do so requires the sophisticated development of academic language, strategies for word learning, and comprehension strategies to make meaning from text while reading. Together, these skills and abilities will increase learners' knowledge and their chances for successful school outcomes.

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PART TWO:
ADVICE FROM EXPERTS ABOUT IMPROVING ACADEMIC LITERACY INSTRUCTION FOR ADOLESCENTS

Introduction

In this section, experienced researchers in adolescent literacy respond to four questions concerning their recommendations for improving adolescent literacy. The experts were selected as a representative sample of those who have made significant contributions to the research literature on adolescent literacy during the recent past. They are, in alphabetical order (see Biographical Information, page 156) for a more complete biographical sketch of each):

Arthur Applebee, Ph.D., professor in the School of Education, University at Albany, State University of New York; chair of the Department of Educational Theory & Practice; and director of the university's Center on English Learning & Achievement

Mary Beth Curtis, Ph.D., professor of education and founding director of the Center for Special Education at Lesley University in Cambridge, Massachusetts

Don Deshler, Ph.D., director of the Center for Research on Learning (CRL) and professor in the School of Education and at the University of Kansas

Bonnie Grossen, Ph D., executive director of the Center for Applied Research in Education (CARE), Eugene, Oregon

John Guthrie, Ph.D., professor of human development and director of the Maryland Literacy Research Center at the University of Maryland at College Park

Judith Langer, Ph.D., distinguished professor at the University at Albany, State University of New York; founder and director of the Albany Institute for Research in Education; and director of the university's Center on English Learning and Achievement

Carol Lee, Ph.D., professor of education and social policy in the Learning Sciences Program of the School of Education and Social Policy at Northwestern University, Evanston, Illinois

Sharon Vaughn, Ph.D., H. E. Hartfelder/Southland Corporation Regents' chair and professor of special education at the University of Texas

We informed the experts that our focus was on academic literacy, with a particular interest in recommendations about instruction. We also told them that we did not expect them to write a documented research summary, but rather to draw on their personal experience and learning in this area to answer each question on which they cared to comment. In essence, we asked them to share their wisdom and knowledge, acquired from their careers of studying and working with adolescents to improve their reading proficiency. It was our hope that the expert's responses would add flavor and depth to our discussion of evidence-based instructional practices. The responses we received were wide-ranging and personal; as expected, they reflected each writer's individual experiences and focus.

Following are the topics we addressed:

1. ***Advice to a middle or high school literacy leader***—What are the three or four most important ideas you would share with a principal or other literacy leader in a middle or high school who was in the planning stages to improve literacy outcomes in her school? Assume that the principal, or leader, has general buy-in from the teachers about the necessity of improving their instruction and support for improved literacy in their students, and that the principal is asking you for advice specifically about improvements in instruction.

2. ***Advice about changing content-area instruction***—If you could change the way instruction is delivered in content-area classes (history, social studies, science) in middle and high school, what would be the three or four most important improvements you would recommend to improve overall literacy outcomes?

3. ***Advice about teaching students with reading difficulties***—If you have specific advice to offer concerning improvements to instruction for struggling adolescent readers, what is it?

4. ***Advice to a commissioner of education***—If you were giving advice to a governor or commissioner of education of a state that was planning an initiative to improve adolescent literacy, what are the three or four most important ideas you would want to share? (These recommendations can be addressed to any aspect of the literacy challenge.)

To assist the reader in assimilating the answers we received, and to avoid inevitable overlaps and redundancies, we excerpted individual responses that

represented the larger group consensus. In some cases, if an expert provided a response that was not mentioned consistently by the others, but which added depth to the overall answer, we included it and identified it as an outlier issue.

We also asked the experts to recommend four or five (most provided many more) publications they thought would be of most value to anyone planning an initiative to improve overall levels of literacy in adolescents or to help struggling readers close the gap with grade-level literacy standards. We asked them to avoid recommending widely available summary documents such as *Reading Next* and other comprehensive documents developed by organizations mentioned in the first part of this guidance document. Our experts' recommendations are presented at the conclusion of this part of the document.

Advice to a middle or high school literacy leader

Provide a clear message about the importance of literacy.

- The single most important thing to do to improve literacy outcomes is to create a climate that fosters sustained cognitive and intellectual engagement with academic content. (Applebee)

- Discipline-based reading is central to teach each discipline. (Applebee)

- Improving adolescent literacy requires that this goal be shared and central to the mission for a school staff. Buy-in is not a one-time "event" but rather an ongoing "process."… In short, *until leaders and teachers relentlessly focus on things that are core to the instructional process, student outcomes will not improve markedly.* (Deshler)

- Turn your administrators, teachers, and even students into a network for literacy, with schoolwide groups working for cross-school change and smaller hubs working for more targeted change. … By working together toward ever more effective literacy environments, you can ensure coherence and connectedness across the grades, across the subject areas, and throughout your school. (Langer)

- Recognize that the literacy problem is deeper and more profound than educators have realized. … Consequently, the reading problem in adolescence is not merely decoding (although that is crucial), not merely knowledge (although that is crucial), not merely motivation (although that

is crucial); it is the outgrowth of the literacy habitat students have occupied for several years of their lives. Corrections in their literacy will involve redesigns of their environment. (Guthrie)

Curriculum, assessments, and school structure must focus on improved literacy outcomes.

Curriculum

- Begin with big ideas or central issues within each subject and grade level, using them to create extended "curricular conversations" in which reading, writing, and talk are interrelated. (Applebee)

- Integrate essential content and skills through their relationships to big ideas or central issues within each discipline. (Applebee)

- Institutionalize academic "tune-ups." Even if your own academic programs have developed ways to focus on literacy in the subject areas, it doesn't mean that there is a consistent way in which students experience them from teacher to teacher or from grade to grade. … Time needs to be set aside for professional groups to work together toward improvement of literacy performance. … The groups need to be empowered to examine needs and possibilities, develop plans, and evaluate progress on a regular basis. (Langer)

- I think we can describe a signature pedagogy for teaching reading comprehension within and across content areas. (Lee)

- Reading comprehension is improved when depth of understanding is facilitated. (Guthrie)

Assessment and data

- The point is that diagnostic data must be usable at the classroom level to inform instruction [and] must be indexed and searchable [for both diagnostic and curriculum assessment systems] so that key stakeholders can access the information readily across the academic history of any student in question. (Lee)

- A school's internal assessment system should provide key stakeholders with data about the distribution of competencies in reading with understanding across … ranges of texts and content areas. … This is important not only to provide multiple pathways through which students

can demonstrate competence, but [it] also allows teachers to understand pathways that need to be strengthened in general and for particular students. (Lee)

- My experience has been that schools often try to make decisions about how to improve literacy without first identifying what their students' strengths and needs in reading are. (Curtis)

- Look at student literacy needs by taking high-stakes tests into account, but don't stop there. Together, teachers and administrators need to review test results to get to know the particular kinds of knowledge or skills your students seem to be having difficulty with, and relate them to how that same knowledge is being used in regular coursework, in school assignments, in homework, in teacher-made tests, [and so on]. Look for patterns of use and patterns of difficulty over time. (Langer)

- Conduct course evaluations that are enhancing and not undermining of students' reading development. … Teachers should give assessments of learning that reward deep understanding of content. Assessments should focus on the use of diverse, appropriate texts, and the use of productive reading comprehension strategies, and students will learn toward these ends. (Guthrie)

- Data related to the school's progress toward improving adolescent literacy is a top agenda item at every staff meeting. (Deshler)

School structure

- Content-area teachers cannot do the job alone. Reading specialists are required to provide specific remedial reading interventions to some students. … They may require between 50 and 100 minutes per day of reading instruction. (Vaughn)

- Instituting state policies [for professional development] is not enough. Leadership is critical to implementing schoolwide literacy initiatives. (Deshler)

- Principals conduct regular classroom "walk-throughs" for the purpose of observing and giving feedback on agreed upon critical instructional practices deemed to be central to the improvement of student outcomes. (Deshler)

- Opportunities for intensive practice with controlled texts in an environment that provides constant correction feedback is not available in traditional middle and high school coursework. These opportunities have to be scheduled separately from the regular school coursework and should occur daily. Because an older struggling reader can perform at a wide range of levels, struggling readers should be placed in instruction that fits with their needs. (Grossen)

Effective use of time (outlier issue)

- Because instructional time is so limited … it is imperative that effective schoolwide and classroom management systems be in place to ensure a prevailing school culture of safety, respect, support, and high productivity. (Deshler)

- Identify occasions where time [in classrooms] is not used efficiently and make more efficient use of that time. (Grossen)

Instruction that builds reading comprehension should occur in content areas and in interventions designed to meet the needs of struggling readers.

- Schools need to differentiate reading instruction according to the developmental needs of students. Reading ability is a relative rather than an absolute skill. It involves multiple components that readers dynamically coordinate in acts of making sense of texts. (Lee)

- For all students, texts should always be at difficulty levels just above what a student can comprehend without instructional support. (Lee)

- Schools need to differentiate reading instruction by content areas. … So selecting texts across topics and genres with each content area is an important task for insuring rigorous adolescent literacy instruction; and making explicit the needs for building prior knowledge, teaching text structures as aids for predicting the organizational structure and kinds of propositions a reader can expect to meet in a given text, teaching the range of vocabulary necessary for understanding the big ideas in a given domain, and for teaching specific strategies that readers need to make sense when comprehension does not flow automatically are crucial elements of differentiated instruction. (Lee)

- Teachers should create a classroom activity structure that motivates students to engage in reading for personal growth, knowledge development, and insight into the human experience. (Guthrie)

- Provide explicit reading strategy instruction embedded in the content goals, texts, and context of engagement. (Guthrie)

- Content-area teachers need to be engaged in a unified approach to literacy instruction in which they acquire proficiency in two to four high-impact strategies/practices that they then use consistently … so that students receive continued practice and reinforcement in how to apply these strategies/practices across content-area reading and learning. (Vaughn)

- [Content-area teachers should] (1) identify key concepts, vocabulary, and principles that represent the most essential information in the unit of study … telling students what you want them to learn from the beginning of the unit and then monitoring acquisition of these key vocabulary/concepts/ideas … [and] providing meaningful opportunities to interact with text; (2) use graphic organizers and other content organizers to assist students in connecting information and showing relationships; … [and] (3) provide instruction across content areas in several key comprehension strategies (e.g., main idea, summarizing, question generation) that can be integrated into content-area instruction and provide a common procedure for how these limited comprehension strategies are taught. (Vaughn)

- Instruction must be tiered and progress must be monitored. (Curtis)

- The most effective literacy programs offer instruction at various levels of intensity, are comprehensive, and are well coordinated. (Deshler)

- Identify an intervention program (for students who need to learn basic reading skills) that has the best documented success in closing this gap. (Grossen)

- Struggling readers have developed many bad decoding habits that require extra instructional time to unlearn. … Practice will not improve this situation. … This struggling reader needs constant error correction feedback, … a controlled text so that the error rate is reduced, … [and] controlled text that is … unpredictable. (Grossen)

Staff development is critical to help teachers design and implement instruction that will improve student reading comprehension.

- To improve literacy… it is important to (1) help teachers understand that literacy is a significant component of every discipline [and] (2) provide teachers with resources and time to develop new teaching strategies. (Applebee)

- Provide professional development to [content-area] teachers to help them identify text across various reading levels … [and] be highly proficient in instructing and supporting the use of two to four high-impact comprehension strategies. It is also valuable to provide many content-area-specific examples of their application and use so that teachers (math, as well as social studies and science teachers) can readily see how they may effectively implement the strategies. (Vaughn)

- To help secondary teachers understand how to best close the achievement gap that struggling adolescent readers face, it is important to ground the way they think about and offer instruction within a theoretical model of reading process for older students. (Deshler)

- Literacy is a hot issue in every field. Keep teachers' professional knowledge about it growing. … Talk about literacy and expect your teachers to discuss it too. Put teachers' knowledge to work as you explore what might be useful for your students and your school. (Langer)

- The most powerful apprenticeship for the development of pedagogical reasoning is the examination of artifacts of real practice … situated inside the systems for monitoring diagnostic data and results from a school's internal assessment system. (Lee)

Additional and/or redesigned resources will be needed to address improvement in students' reading comprehension.

- Schools need both general as well as domain-specific reading specialists to carry out such coordination [of reading instruction across the curriculum]. While many school systems and states are experimenting with the idea of literacy coaches, few have a systemwide infrastructure for training and sustaining the professional development of such a cadre, … particularly … at the high school level. Someone needs to be able to hold

a meaningful conversation with the physics teacher about helping students learn to read both the physics textbook as well as a Stephen Hawking text. (Lee)

- Besides having ongoing professional development, having a site-based, well-trained literacy coach or reading specialist to provide ongoing guidance and support to teachers is essential. (Vaughn)

- Educational leaders will need to develop classes and hire personnel to provide intensive interventions for students with significant reading problems. (Vaughn)

- It is valuable to have multiple sources of text that are at levels that students can and will read. One procedure for doing this is to assist content-area teachers in providing text levels at various Lexile levels so that students can read text related to the units of instruction. (Vaughn)

- A first school responsibility is readable textbooks. When students are faced with texts in which they understand few words, cannot read a paragraph aloud fluently, and understand little from a single page, they despair. Strictly align texts and textbooks with students' reading abilities. (Guthrie)

Advice about changing content-area instruction

Provide instruction in multiple reading comprehension strategies.

- Teachers will need time and help to develop a repertoire of strategies for supporting literacy within their discipline and time for redesigning instruction with this goal in mind. (Applebee)

- Readers should be taught a variety of strategies for comprehending different content-area texts and provided with opportunities to receive feedback and guidance regarding the effectiveness of their application of these strategies. Teachers must view students' use of reading strategies and skills as a way to enhance their understanding and learning of the content they are teaching. (Curtis)

- Conspicuous Strategies: Sequence of teaching events and teacher actions that make explicit the steps in learning. They are made conspicuous by the

use of visual maps or models, verbal directions, full and clear explanations, [and so on]. (Grossen)

- Comprehension strategies should be taught explicitly through reading and writing activities across the curriculum. All teachers within a grade level should teach a common set of three to four reading comprehension strategies in each content area (e.g., questioning during reading, summarizing, graphic organizing of text, use of background knowledge during reading, self-monitoring during reading). (Guthrie)

- Content-area teachers need to be engaged in a unified approach to literacy instruction in which they acquire proficiency in two to four high-impact strategies/practices that they then use consistently within their areas of instruction (e.g., main idea, summarizing, question generation). (Vaughn)

- Direct instruction in what to look for and then what to do with the knowledge is likely to be effective. (Langer)

- Teachers must have pedagogical strategies in which students make public how they are reasoning to make sense of texts while they are engaged in the process of comprehending. Instruction in reading comprehension should include activating prior knowledge, setting goals for reading, making predictions, self-monitoring, constructing the main idea, critiquing the text's propositions, and evaluating the structure of the text. (Lee)

- Content-area teachers (e.g., math, science, social studies, English/ language arts) need to be engaged in a unified approach to literacy instruction in which they acquire proficiency in two to four high-impact strategies/practices that they can use consistently within their area of instruction so that students receive continued practice and reinforcement in how to apply these strategies/practices across content-area reading and learning. Provide instruction across content areas in several key comprehension strategies (e.g., main idea, summarizing, question generation) that can be integrated into content-area instruction and provide a common procedure for how these limited comprehension strategies are taught. (Vaughn)

Focus on important content and concepts (big ideas).

- Revise curriculum guidelines to integrate essential content and skills through their relationships to big ideas or central issues within each discipline. An effective approach is to begin with big ideas or central issues within each subject and grade level, using them to create extended curricular conversations. (Applebee)

- General education teachers must teach content in a way that all students can understand, apply, generalize, and remember it. A set of instructional routines called Content Enhancement Routines (CERs) are based on four instructional principles: to teach academically diverse groups, carry out instruction in active partnership with students, focus on the teacher as content expert, and maintain the integrity of the content. They incorporate three instructional objectives: to assure that adequate prior knowledge needed in the content area is present, facilitate the transformation or manipulations of two or more pieces of information through categorizing, comparing and contrasting, exploring causation, inquiring into critical questions, evaluating options, or making decisions, and provide mechanisms for knowledge generalization that involves predicting, inferring, problem solving, or synthesizing information into a main idea that can be used in a variety of situations. (Deshler)

- In order to help all students in academically diverse classes meet assessment standards, general education teachers must focus on content that is most important. (Deshler)

- [Provide] inclusive instruction [that] features big ideas (highly selected concepts, principles, rules, strategies, or heuristics that facilitate the most efficient and broadest acquisition of knowledge). (Grossen)

- Redesign the content that students are expected to learn from texts in school. Curriculum content structures should be focused, with in-depth focus on specific topics and connections to students' experiences and background knowledge. Reading comprehension is improved when depth of understanding is facilitated. It is helpful to students to understand what it means to deeply grasp one historical event or one scientific principle through multiple readings, applications, discussions, and connections to other areas. A compelling way to address the dilemma posed by breadth

of curriculum topics is to be more thematic in content designs. Emphasize big ideas. (Guthrie)

- Content-area teachers should identify the key concepts and principles for each unit they are teaching that they would like every student to know. The goal is to identify those key concepts and principles that represent the most essential information in the unit of study. (Vaughn)

- Use graphic organizers and other content organizers to assist students in connecting information and showing relationships. (Vaughn)

Purposefully select texts to match readers' skill levels.

- Students should be provided with high-quality print materials. (Curtis)

- A first school responsibility is readable textbooks. Strictly align texts and textbooks with students' reading abilities. (Guthrie).

- In content areas, textbooks are often difficult to understand; selecting and sequencing texts within content-area courses is complex and important. In order to effectively design reading comprehension instruction within content areas, teachers must be able to figure out sources of difficulty within texts, including prior knowledge, vocabulary, sentence structure, text structure, and density of propositions. Teachers need to learn to evaluate what a reader needs to know and be able to do to understand difficult texts, and teachers must be able to figure out what makes particular texts easier or more difficult. We need to differentiate texts that are appropriate for different skill levels; ideally texts should always be at a difficulty level just above what a student can comprehend without instructional support. (Lee)

- Teachers need to be able to identify text across various reading levels that is appropriate for units they are teaching so that all students have the opportunity to read text related to the unit of instruction that they are capable of reading. It is valuable to have multiple sources of text at levels that students can and will read. (Vaughn)

Provide explicit vocabulary instruction.

- Teach academic vocabulary (words that hold content-specific words together like *identify, presume, valid, simultaneous, subsequent,* and *fluctuate*) in content-area classes. (Curtis)

- Teachers must provide the scaffolds to acquire critical vocabulary. (Deshler)

- [Teaching] the range of vocabulary necessary for understanding the big ideas in any given domain is necessary. Students need to be able to use context cues, including syntax and word parts, to figure out the meaning of words they don't understand. The process of internalizing the meaning of words in long-term memory requires active processing, using words over and over in multiple contexts, and being able to distinguish which meanings of words make sense in particular contexts. Deep understanding of particular words involves understanding synonyms and antonyms as well as the multiple possible meanings of words. (Lee)

- Teachers should identify the key vocabulary for each unit they are teaching that they would like every student to know. (Vaughn)

Provide opportunities for substantive discussion.

- Active exploration of ideas and interpretations requires teachers to devote significant amounts of class time to substantive discussion and student exploration of meaning. (Applebee)

- Create situations where students participate fully in tasks that require collaborative effort. (Guthrie)

Advice about teaching students with reading difficulties

Provide intensive instruction for students who are significantly behind.

- Struggling adolescent readers need instruction that engages them in ideas that matter, that uses time to explore ideas rather than to test what they know, that respects their initial understandings, invites multiple perspectives, and provides new knowledge and skills systematically as they are needed to engage with the ideas at hand. (Applebee)

- For learners at the initial stages of reading, the focus of literacy instruction should be on improving alphabetics, including phonemic awareness, word analysis, and sight word recognition. Grouping for reading instruction is one of the most effective ways to provide a safe learning environment for adolescents who struggle. (Curtis)

- Many struggling adolescent readers lack sufficient fluency in decoding and word recognition and can benefit from intervention targeted at word-reading strategies. Within the Content Literacy Continuum it is suggested that some students require more intensive, systematic, explicit instruction of content, strategies, and skills. Instruction that is especially intensive and focused is necessary for students reading several years behind grade level. Classes of no more than 12 students that meet for at least one hour per day are required. A highly skilled teacher would use a combination of whole-class, small-group, and one-on-one instruction. The focus of instruction should be on word recognition, fluency, vocabulary, and strategies for encouraging persistence. (Deshler)

- Opportunities for intensive practice with controlled texts in an environment that provides constant corrective feedback should be scheduled separately from the regular school coursework and should occur daily. Select an evidence-based intervention program for closing the achievement gap of these students as quickly as possible. To improve reading, the struggling reader (one who has a habit of guessing a word based on only a couple of the letters in the word, instead of seeing all the letters in left-to-right order, and who will read and reread phrases, guessing a word, coming back to correct based on context, and finally, reading with considerably less than 98% accuracy) needs constant error correction feedback. The struggling reader who makes lots of errors also needs a controlled text so that the error rate is reduced. Furthermore, the text needs to be controlled so that the struggling reader can focus on a manageable subset of the types of decoding errors he ... makes and get the needed practice to unlearn the bad habit of guessing. To teach struggling readers to rely on the letters in the word, the text should be unpredictable. In our work with struggling high school students, we have been able to turn a 44% pass rate on the California High School Exit Exam into an 85% pass rate through intensive focused intervention that requires 150–250 hours. (Grossen)

- The low group of highly deficient readers requires strategic tutoring, extremely small group work on a 1:5 ratio, and specialized materials that emphasize phonemic awareness, phonics, word-recognition processes, and sentence comprehension skills. Although fluency may be learned in 100 hours, it requires more like 50 months to gain sufficient knowledge to bring students to grade level in reading. (Guthrie)

- Differentiated instruction for struggling readers would be in the particular questions asked and models given. It is important to create a "minds-on" classroom where students can become cognitively engaged in the activities. (Langer)

- Schools need to differentiate reading instruction according to the developmental needs of students. (Lee)

- Most of these students will require "word-reading" instruction (e.g., word study and decoding) as well as vocabulary, fluency, and comprehension practice within text levels they can read and instruction of effective practices to improve their reading. They may require between 50 [and] 100 minutes per day of reading instruction. (Vaughn)

Give intensive instruction and practice in fluency and/or comprehension strategies.

- For learners at the middle stages of reading, literacy instruction should emphasize fluency and meaning vocabulary. (Curtis)

- As (struggling) students master the basic skills of reading, the instructional focus needs to shift to comprehension strategies with continued emphasis on vocabulary building. (Deshler)

- For struggling readers who are not severely deficient, but [are] unable to perform literacy tasks in schools, the following organization plan is recommended:

  1. Place struggling readers together in homogeneous groups to enable teachers to provide targeted reading skill support.

  2. A full class period of at least 60 minutes or a block of 90 minutes is provided daily for these students in addition to their schedule of content classes.

  3. Within the block of 60–90 minutes, students are provided readable text.

  4. Explicit instruction in fluency and [comprehension] strategy should be provided.

  5. Teachers sustain engaged reading time at 40–60 minutes daily.

  6. Instruction is not centered on high-cost computer-based instruction. (Guthrie)

- While a small percentage of struggling adolescent readers have difficulties with basic decoding, most adolescent struggling readers' difficulties can be traced to vocabulary, prior knowledge, knowledge of syntax at the level of sentences, as well as syntactic markers of logical relations and coherence. (Lee)

Instruction should be provided by a highly qualified teacher.

- For adolescents at the initial stages of reading, intensive interventions directed toward meeting their needs in alphabetics must be developed by teachers trained specifically in those methods. (Curtis)
- [Provide] a highly skilled teacher. (Deshler)
- English teachers typically have no more training in the teaching of reading comprehension than teachers in other disciplines. Understanding how to meet the needs of struggling readers while teaching propositional knowledge and modes of reasoning within subject matters is complex and requires deep professional knowledge. (Lee)

Placement and instruction should be driven by assessment data, including progress monitoring.

- Progress must be monitored by teachers, administrators, and students. (Curtis)
- A screening instrument should be administered as students enter middle school to identify the various reading needs that students have. At a minimum, such screening should give a basic measure of word-analysis skills, fluency, and comprehension. Further, decision rules for interpreting screening results should be clearly defined and adhered to so students get assigned to the kind of instruction that best matches their needs. It is important to carefully monitor how responsive students are to the instruction offered and to ensure that they make sufficient progress to close the achievement gap. Measures designed to probe students' performance on targeted skills should be taken at least four to five times per year to enable teachers to make instructional adjustments and to minimize the use of instruction that is not yielding results. Structures that support an instructional mission of dramatically improving student literacy outcomes include flexibility in class schedules that allow students to move

from one reading class to another as soon as they meet mastery targets—even if this happens during a semester. (Deshler)

- Individualized instruction can be provided in groups if the students are placement tested and placed accordingly. (Grossen)

- It is useful to gather diagnostic data not only about students' abilities to read with understanding a range of texts according to readability levels, but within those readability levels to gather diagnostic data across genres and domains of knowledge within the content areas. Diagnostic data must be usable at the classroom level to inform instruction. (Lee)

Make a variety of leveled and high-interest materials available.

- For adolescents at the middle stages of reading, teachers need to make a variety of texts available at the level where students are currently able to accurately identify the words. (Curtis)

- It is important to provide well-supplied classroom libraries of leveled high-interest materials that capture student interest and increase the amount of reading students do. (Deshler)

- The text needs to be controlled so that the struggling reader can focus on a manageable subset of the types of decoding errors [she] makes and get the needed practice to unlearn the bad habit of guessing. To teach struggling readers to rely on the letters in the word, the text should be unpredictable. (Grossen)

- Teachers must have access to a range of instruction materials that support readers at all levels. (Vaughn)

Provide explicit vocabulary instruction.

- Direct vocabulary instruction must be provided, with multiple opportunities for students to learn new word meanings, along with activities that encourage them to process these word meanings in active and generative ways. (Curtis)

Hire a literacy coach.

- Schools need both general as well as domain-specific reading specialists to provide customized support to help teachers meet the needs of a

diverse array of learners and for developing and managing systems of diagnosis, curriculum assessment, and professional development within a school. (Lee)

- Having a site-based, well-trained literacy coach or reading specialist to provide ongoing guidance and support to teachers is essential. (Vaughn)

Plan for ongoing professional development.

- Structures that support an instructional mission of dramatically improving student literacy outcomes include opportunities for teachers to plan together for the purpose of coordinating instruction across classes so critical skills taught to struggling readers are reinforced and used by all teachers. (Deshler)

Advice to a commissioner of education

Set adolescent literacy goals and make a plan to meet them.

- Build support for a state focus on adolescent literacy. A strategic plan to address the literacy needs of the state's middle and high school students requires literacy performance data for students, schools, and districts. Such data can be shared through a state literacy report card to raise the issue's profile and garner momentum. … Governors can appoint a state officer or coordinator for adolescent literacy and establish an adolescent literacy advisory panel. (Deshler)

- Begin with a consistent and comprehensive definition of literacy. A broad-based definition of literacy has two important consequences: (1) it directs attention toward instruction that will be cognitively and intellectually engaging for students, and (2) it gives literacy instruction a central role within each of the academic disciplines, not simply something for the reading or English teacher to be concerned about. (Applebee)

- States must make literacy expectations explicit across grade levels and content areas. (Deshler)

- Are your stakeholders comfortable with the view that adolescents are capable of making improvements in reading? When I first began working with adolescent readers, I was struck by the number of experts who predicted that progress would be unlikely. … With appropriate techniques

and materials, reading failure in adolescents can be reversed. But it may involve changing what or how we teach, or who does the teaching—changes that can be difficult for some to accept. (Curtis)

- States can provide the infrastructure of resources and constraints to facilitate the development of comprehensive and effective reading programs. While simple replication would not work, there are many lessons from the systemic resources available for primary-level reading instruction. (Lee)

- Reading initiatives require ongoing support and funding … [and] continual engagement if they are to be effective. (Vaughn)

- Recognize that gains in achievement are not going to happen overnight. … By middle and high school, many students have become thoroughly disengaged from academic study. Reengaging them … requires not just new approaches to curriculum and instruction, but also has to overcome that legacy of past experience. (Applebee)

Create or adjust state policies to support adolescent literacy goals.

- Improving adolescent literacy will require assessing real-world literacy demands and strengthening state standards, accordingly. Policymakers can help ensure that standards are met by aligning them with curricula, assessments, and professional development activities. (Deshler)

- Strengthen teacher licensure and preparation requirements … [and] offer specialized certifications or endorsements in adolescent literacy. (Deshler)

- A context of state- or national-level accountability through testing and public reporting of results by school is a critical prerequisite to the success of … literacy policies. (Grossen)

- Few middle school and high school teachers get the preparation they need to teach reading. … [A] strategy would be for states to examine their requirements for licensure for content-area teachers. (Curtis)

Curriculum issues must be examined and addressed within the context of a statewide literacy plan.

- For all but the most highly advanced students, literacy goals should have higher priority in the education system than content goals of curriculum

coverage. The rationale for this is simple. The most prominent goal of secondary education is gaining content knowledge. The most prominent source of knowledge development is texts and textbooks. If students cannot read well enough to learn from their textbooks, doors to the halls of knowledge are shut. … Therefore, highly proficient reading in its most complex forms is the single most valuable competency of a secondary student. (Guthrie)

- Depth is preferred over breadth in curriculum design. The more students expand their literacy competencies, the more content goals can be diversified and refined. When building literacy is the primary objective, then content goals should be clarified, simplified, and reduced in number. (Guthrie)

- Reconsider your expectations for content coverage. To make every teacher a teacher of reading is certainly a worthy goal. But turning this slogan into reality may require that the scope of states' content expectations be tailored to allow sufficient time for content-area teachers to engage in content-area literacy instruction. (Curtis)

- It is extremely important that the content students are being taught at school is not being diminished and that the range of classes they were once able to take as well as the range of after-school activities in which they were able to participate are not being narrowed. (Langer)

Build a system to assess student progress toward literacy goals and to enable schools to measure literacy progress to improve instruction.

- Careful consideration needs to be given to how the success of an adolescent literacy initiative is going to be measured. … It's important to decide how and when to measure effectiveness, and to then be totally honest about what the data say. (Curtis)

- Align state assessments with state literacy goals. If the state examination system does not reflect the values of the adolescent literacy initiative, the long-term result will be instruction that reflects the exams—not higher literacy. (Applebee)

- Measure progress in adolescent literacy at the school, district, and state levels. [Governors], along with other policymakers and educators, will need

better data sources and tools, including assessments and data systems that provide real-time and longitudinal student literacy performance information. (Deshler)

- [Schools need] readily and easily implemented screening to identify students with significant reading problems (more than two grade levels below). (Vaughn)

- Regard the statewide high-stakes test as only one data source needed to make decisions about students' literacy abilities and progress. … Literacy ability is not unidimensional. [Students'] abilities need to be judged across a wider swath of use. (Langer)

- Support the development of diagnostic assessments to be available to middle and high schools that provide sufficiently detailed data for diagnosing the range of needs of struggling readers. (Lee)

Provide mechanisms for schools to build personnel capacity to implement high-quality literacy instruction.

- Accountability systems should ensure that professional development offerings are closely tied to improving student outcomes. (Deshler)

- Build educators' capacity to provide effective adolescent literacy instruction. … Offer specialized certification or endorsements in adolescent literacy, schoolwide professional development in literacy instruction, or mentoring programs with a literacy component. Principals, too, can be offered incentives to become leaders of adolescent literacy initiatives in their schools. (Deshler)

- Provide for … resources to provide consistent and effective professional development to teachers that prepare them to implement two to four effective strategies to promote reading comprehension and vocabulary/concept learning in their content-area classes so that these effective practices are used with all learners. (Vaughn)

- Teachers need depth in their understanding about pedagogy for literacy. … Generate a three-year plan for teachers' growth as literacy experts. (Guthrie)

- Continued investment in professional development is to be preferred over an off-the-shelf approach to curriculum reform. Afford schools professional

development that is provided prominence over the purchase of programs. (Guthrie)*

• To improve adolescent literacy, [states can] require multiple courses in reading comprehension, reading in the content areas, [and] reading diagnosis for middle and secondary certification; continued professional development in these areas for continued certification; and courses in language acquisition, adolescent development, cognition, and cultural diversity as additional requirements for certification. (Lee)

• Provide incentives for teachers in historically underachieving schools to train for national board certification. (Lee)

• Teachers [must] get the preparation they need to teach reading. (Curtis)

• [Select a] professional development program that requires 40 hours of training prior to initial implementation and 80 hours of follow-up training, coaching, and discussion. (Grossen)*

• Approve professional development providers through a review of the professional development materials used by providers. The criteria for approval must be research based. (Grossen)*

* *These researchers' somewhat different approaches to personnel development could be seen as contradictory. In the absence of large-scale, long-term research on these issues, it is important to consider the potential utility and applicability of both approaches in different situations. One approach advocates a sustained and deep commitment to professional development with a view to helping all teachers become literacy experts able to provide high-quality literacy instruction on the basis of their personal knowledge of important literacy goals and instructional practices. Another approach emphasizes the selection of curriculum materials and instructional programs that can serve as a scaffold or guide for literacy instruction. As explained earlier, teachers still require extensive professional development to help them use these materials or programs with fidelity, and to adjust their use with specific children, but this professional development may not need to be as wide-ranging as that sought in the first alternative. A third alternative might combine some elements of both approaches.*

Provide resources to districts and schools to implement and sustain the plans to meet state literacy goals.

- Provide schools and teachers with the resources to initiate and sustain reform. … Slow gains in achievement do not mean the initiative is failing. They reflect the fact that significant gains require major changes in instruction, adapted to the local context of each classroom and school. Such capacity building takes time—there is no "quick fix." (Guthrie)

- Reading initiatives require ongoing support and funding. … Sustaining the reduced rate of reading problems requires ongoing resources and support. Reading initiatives require continual engagement if they are to be effective. (Vaughn)

- [Provide] direct, specific funding for the wide-scale [adolescent literacy] initiative. (Grossen)

- [Make] resources [available] to provide reading intervention for students with significant reading problems, classes for students with mild to moderate reading problems in which they can "catch up" with peers in reading in one to two years (approximately 50 minutes per day). … [and] resources to provide more intensive reading remediation for students with significant reading problems (moderate to severe reading problems) so that they can read and learn from grade-level text within two to three years (approximately 50–100 minutes per day). (Vaughn)

- Adopt … and fund the use of … research-based programs. (Grossen)

- Provide students with texts they can read. In every classroom, students should be capable of reading their texts and textbooks aloud proficiently. Unable to make the simplest sense of their texts, students are barricaded from knowledge. Schools should invest in a new storehouse of texts. (Guthrie)

- Work with individual schools and districts to develop data-rich cases … [to] focus on those misconceptions that interfere with effective adolescent literacy instruction. (Lee)

Experts' recommended reading: An annotated bibliography

Arthur N. Applebee

Allington, R. A., & Walmsley, S. A. (Eds.). (1995). *No quick fix: Rethinking literacy programs in America's elementary schools.* New York: Teachers College Press and the International Reading Association.

A resource for educators thinking of restructuring their literacy programs, this text summarizes the important issues in elementary school literacy reform. Allington and Walmsley argue that the particular instructional strategy implemented is not as important as a school's determination to provide for the long-term literacy needs of all students, particularly at-risk students. Chapter editors provide case studies that take a developmental approach in describing the evolution of various implemented literacy programs, giving evidence that schools can, and indeed must, change to enhance the literacy of all students.

Applebee, A. N. (1994). Toward thoughtful curriculum: Fostering discipline-based conversation. *English Journal, 83*(3), 45–52.

Applebee argues for a change in the English curriculum from the traditional, content-centered, "right answer" approach to one of reflective conversation about good books. He describes traditional curriculum as emphasizing learning that was memorized and inherited intact, rather than knowledge that was constructed through thoughtful interpretations by the learner. He envisions an effective literacy curriculum as an ongoing cultural and social conversation— both written and oral—shaped, but not limited, by a teacher's tacit sense of the curricular domain. Reconstructing curriculum as a domain for culturally significant conversation, Applebee contends, would require scaffolded instruction to ensure that students are both enabled and supported to participate in the learning process.

Applebee, A. N. (1996). *Curriculum as conversation: Transforming traditions of teaching and learning.* Chicago: University of Chicago Press.

Curriculum as Conversation makes a case for reconfiguring the present knowledge-out-of-context education process into one of knowledge in action that allows students to construct their own meaning and learning through curricular conversations. While Applebee acknowledges that educators do and should encompass past traditions, he believes we must leave the orderly but

"deadly" educational model behind and enter a new system that allows learning through doing. Through an integrated curriculum based on discourse and participation, Applebee writes, students will develop the necessary tools for living in the present and the future. *Also recommended by Judith A. Langer.*

Langer, J. A. (1995). *Envisioning literature: Literary understanding and literature instruction.* New York: Teachers College Press.

Langer asserts that critical thinking skills can be systematically developed through "envisioning," the reader's quest for meaning while reading. Using narratives of student-led classroom conversations from elementary through high school, in both rural and inner-city schools, Langer explores a new way to think about literature instruction and discusses practices that will build a community of self-edifying readers.

Mary E. Curtis

Chall, J. S., Jacobs, V. A., & Baldwin, L. E. (1990). *The reading crisis: Why poor children fall behind.* Cambridge, MA: Harvard University Press.

Chall and her colleagues investigate the disparity in literacy development between middle-class students and those from culturally disadvantaged backgrounds. They outline practical advice to encourage both families and communities to foster literacy growth in students from low-income households, offering suggestions that could significantly reduce the fourth-grade slump and the subsequent incremental deficit gap.

Curtis, M. E., & Longo, A. M. (1999). *When adolescents can't read: Methods and materials that work.* Cambridge, MA: Brookline.

Part of the From Reading Research to Practice series, this book presents the Boys Town remedial reading curriculum. In this direct instruction program based on Jeanne Chall's six stages of reading development, adolescents behind as much as six grade levels in reading achieve two years of reading gains for every year of instruction. Curtis and Longo describe their reading program's theory, research, methods, and materials.

Curtis, M. E., & Longo, A. M. (2001, November). Teaching vocabulary to adolescents to improve comprehension. *Reading Online, 5*(4). Retrieved October 12, 2006, from http://www.reading online.org/articles/art_index.asp?HREF=curtis/index.html.

The authors describe an intervention program they developed for adolescents lacking the vocabulary skills necessary to comprehend grade-level material. This is the third of four 16-week courses that make up the remedial reading curriculum Reading Is FAME, implemented with middle and high school struggling readers at the Girls and Boys Town in Boys Town, Nebraska. Based on research linking vocabulary to reading achievement, the program uses Chall's stages of reading development as a theoretical framework. Data indicate an average gain of one grade level in reading achievement for the 16-week course.

McEwan, E. K. (2001). *Raising reading achievement in middle and high schools: 5 simple-to-follow strategies for principals.* Thousand Oaks, CA: Corwin.

McEwan offers research-based strategies for administrators interested in developing a plan to ensure reading success for their secondary students, challenging principals to create a school culture where all students read effectively, and detailing the skills and attitudes necessary for success. This guide to elevating schoolwide reading success includes easy-to-follow instructions, a glossary of reading terms, and a review of exemplary programs.

Strucker, J. (1997). What silent reading tests alone can't tell you. *Focus on Basics, 1,* 13–17.

Strucker discusses the use of more sensitive, multicomponent reading assessments for ABE (adult basic education) learners. He advocates the use of the Diagnostic Assessment of Reading (DAR) or other diagnostic reading tests because traditional silent reading tests used in adult education do not detect the remedial readers' uneven reading skills profiles.

Tuley, A. C. (1998). *Never too late to read: Language skills for the adolescents with dyslexia.* Baltimore: York.

Tuley offers a practical tool, based on the work of her mentor, the late Alice Ansara, for working with adolescents with dyslexia. Recognizing dyslexic students' need to receive both remediation for their specific language deficits and enabling strategies for their academic coursework simultaneously, Tuley provides techniques for both. Focusing on student evaluation and subsequent instruction, this is a sequential, detailed manual of reading therapy for adolescents with severe reading deficits. *Also recommended by Judith A. Langer.*

Donald D. Deshler

Deshler, D. D., & Hock, M. F. (In press). Adolescent literacy: Where we are—where we need to go. In M. Pressley, J. Billman, J. A. Perry, B. Refitt, and M. T. Reynolds (Eds.), *Shaping literacy achievement.* New York: Guilford.

After discussing the necessity of effective intervention for struggling adolescent readers, the authors review the existing research, describing how to use the theory of reading as two interdependent components, word recognition and language comprehension, to build a framework for guiding research and instruction. Using findings from a large descriptive study on struggling adolescent readers, Deshler and Hock propose a research agenda to address the gaps in the current literature on these struggling students.

Deshler, D. D., Hock, M. F., & Catts, H. (2006). Enhancing outcomes for struggling adolescent readers. *IDA Perspectives, 32*(3), 21–25.

Deshler, Hock, and Catts discuss the vital importance of early literacy preparedness for students entering high school. If raising educational standards and closing the achievement gap for struggling students are necessary to ensure that our adolescents will be able to compete in a global economy, the authors argue, then a strong literacy foundation must be built in the late-elementary and middle school years. The authors first present a conceptual view of the adolescent reading process, then define the features necessary for effective adolescent literacy programs. They recommend that such programs be based on established learning theory to ensure that as middle school students move up, they are able to face the rigorous demands of the high school curriculum.

Deshler, D. D., Schumaker, J. B., & Woodruff, S. K. (2004). Improving literacy skills of at-risk adolescents: A schoolwide response. In D. S. Strickland & D. E. Alvermann (Eds.), *Bridging the literacy achievement gap, grades 4–12.* New York: Teachers College Press.

The authors contend that improving the literacy skills of at-risk students is hampered by the conflicting content-area instructional goals in secondary schools that focus on acquiring increasingly complex content knowledge even though students continue to struggle with basic literacy skills. Stressing responsive, systematic, and intensive instruction, they outline a conceptual framework for educators and discuss the substantial literacy gains made in a

high school that implemented such a framework. If administrators will prioritize literacy improvement and all teachers take responsibility for coordinating the use of research-based instructional methods across the curriculum, Deshler and his colleagues assert, then at-risk secondary students will be able to earn standard diplomas and may even go on to postsecondary education.

Guthrie, J. T., Wigfield, A., & Perencevich, K. C. (2004). Scaffolding for motivation and engagement in reading. In J. T. Guthrie, A. Wigfield, & K. C. Perencevich (Eds.), *Motivating reading comprehension: Concept-Oriented Reading Instruction.* Mahwah, NJ: Lawrence Erlbaum.

The authors discuss the powerful motivational role that teachers play in developing independent learners. Believing that intrinsic motivation is the foundation for self-efficacy, they explain how educators should carefully scaffold their students' motivational development to ensure their reading engagement. Guthrie and his colleagues include several vignettes from CORI (Concept-Oriented Reading Instruction), a program that merges reading strategies, science knowledge, and motivational support in classrooms, to illustrate the scaffolding techniques.

Kamil, M. (2003). *Adolescents and literacy: Reading for the 21st century.* Washington, DC: Alliance for Excellent Education.

Kamil asserts that we now know enough about adolescent literacy to use the current body of research as a foundation for instructional change. We have learned that to be successful with adolescents, a literacy program must engage and motivate; integrate technology; and build fluency, word-analysis, and comprehension skills while continuing instruction for those who still struggle with decoding. A program of individual instruction, including the continuous assessment of reading skills, is needed by all middle and high school students, but especially English language learners, who have additional learning challenges. Since research has shown that enhancing teacher skills has a beneficial effect on student reading achievement, sustained, embedded professional development should be a cornerstone of this national effort.

Lenz, B. K., Deshler, D. D., & Kissam, B. (2004). *Teaching content to all: Evidenced-based inclusive practices in middle and secondary schools.* New York: Allyn & Bacon.

Lenz, Deshler, and Kissam address what all secondary teachers need to know about instructing students with different learning needs. They describe how to plan and implement instruction that meets the needs of every student. Explicit methods for course, unit, and individual lesson planning are included, along with detailed explanations of research-based teaching routines and effective learning strategies. Additional chapters address establishing communication between students and teachers and how to link with other professionals.

Lenz, B. K., Ehren, B. J., & Deshler, D. D. (2005). The content literacy continuum: A school reform framework for improving adolescent literacy for all students. *Teaching Exceptional Children, 37*(6), 60–64.

The Institute for Academic Success, a joint research project of the University of Kansas Center for Research on Learning and the University of Oregon, studied how to increase success for secondary students with disabilities who are enrolled in rigorous academic courses. The report outlines seven key factors that a school should consider when making literacy the central theme of its school improvement agenda. The authors describe the framework for the Content Literacy Continuum and the Strategic Instruction Model as a research-validated comprehensive program targeting both individual and systemic literacy improvement.

Levy, F., & Murnane, R. (2004). *The new division of labor: How computers are creating the next job market.* New Jersey: Princeton University Press.

This book focuses on the need for educational change as increasing workplace technology brings about inexorable changes in job distribution. As the blue-collar job market shrinks, demand is increasing for a workforce that is capable of expert thinking and complex communication. This new workforce must have the strategies and skills to bring both facts and their interrelationships to bear on problem solving. Levy and Murnane discuss the possibility that the ongoing revision of standards-based educational reforms may be the way to ensure students acquire these enabling skills.

Moje, E. B., Young, J. P., Readence, J. E., & Moore, D. W. (2000). Reinventing adolescent literacy for new times: Perennial and millennial issues. *Journal of Adolescent and Adult Literacies, 43*(5), 4–14.

The authors describe their responses to the public conversation they facilitated at the 1999 International Reading Association (IRA) convention in San Diego.

Sponsored by the IRA's Commission on Adolescent Literacy, their conversation addressed the instructional, political, and research issues in adolescent literacy. The discussion includes the historical context of the term *adolescent literacy* and cautions educators to be critical consumers of so-called best practices. It concludes with suggestions for meeting the needs of marginalized readers and for developing critical literacy and higher-order thinking in our students.

National Academies Committee on Prospering in the Global Economy of the 21st Century (2006). *Rising above the gathering storm: Energizing and employing America for a brighter future.* Washington, DC: National Academies Press.

This book discusses the erosion of U.S. advantages in science and technology due to widespread advanced knowledge and readily available low-cost labor. Scientists urgently call for a comprehensive coordinated effort to counteract our students' lack of preparation to compete in a global marketplace. The committee's four recommendations include increasing America's talent pool by vastly improving K–12 mathematics and science education; sustaining and strengthening the nation's commitment to long-term research; developing, recruiting, and retaining top students, scientists, and engineers; and ensuring that the United States is the premier place in the world for innovation.

Sprick, R. S. (2006). *Discipline in the secondary classroom: A positive behavioral approach to behavior modification.* San Francisco: Jossey-Bass.

Discipline in the Secondary Classroom is a step-by-step guide to eliminating classroom misbehavior and stimulating student motivation. The effective research-based strategies suggested in this book are both positive and proactive and offer secondary teachers techniques that will enable them to respond to misbehavior in a calm and consistent manner. Sprick also includes sample forms and evaluation tools to assist teachers in designing and implementing a classroom behavior management plan.

Bonnie Grossen

Deshler, D. D., & Schumaker, J. B. (Eds.). (2006). *Teaching adolescents with disabilities: Accessing the general education curriculum.* Thousand Oaks, CA: Corwin.

This collection of articles describes specific research-based educational practices to help teachers and administrators bridge the gap between the academic performance of the typical student and the adolescent with disabilities. A comprehensive resource, it details a long-term, cooperative instructional program that involves students, educators, parents, and community agencies to ensure that adolescents with disabilities maximize their mastery of the complex secondary school curriculum, opening the door to life success.

Grossen, B. (1996). Making research serve the profession. *American Educator, 20*(3), 7–8, 22–27.

Grossen discusses why scientific research is the best method for predicting which educational materials and practices will produce consistent results for a large and diverse population of students and teachers. She argues that educational research needs to move to higher levels of scientific inquiry and that educators need to identify and catalog the effective instructional practices of high-performing schools so that they can be studied and replicated. Grossen cautions educators to thoroughly investigate the quality of the supporting research before they adopt any new practices.

Grossen, B. (2002). The BIG accommodation model: The direct instruction model for secondary schools. *Journal for the Education of Students Placed At-Risk, 7*(2), 241–263.

Twenty years of research on the BIG accommodation model reports record gains for at-risk secondary students. The professional development model allows for cost-efficient replication to achieve high-quality implementation. This program's success depends on including "big idea" curricula, electronic progress monitoring, and classroom coaching.

Grossen, B. (2004). Success of the direct instruction model at a secondary level school with high-risk students. *Reading and Writing Quarterly, 20,* 161–178.

This is a study of a schoolwide comprehensive direct instruction model, Corrective Reading, which was implemented in a very low-achieving middle

school in California. After the program was implemented, students' rate of progress quadrupled. Similar success has since been duplicated in other California middle schools. Corrective Reading requires a school commitment to instructional change and teacher buy-in for successful implementation. Other factors for success include program-specific teacher training, continuous progress monitoring of standards, and in-class coaching for teachers. This research project and its programs have been collated in the REACH System.

Shinn, M., Walker, H., & Stoner, G. (Eds.). (2002). *Interventions for academic and behavior problems II: Preventive and remedial approaches.* Bethesda, MD: National Association of School Psychologists.

The editors collected 38 chapters by leading experts in school psychology on research-based intervention practices. This how-to book for implementing effective strategies to ensure students' academic and behavioral success emphasizes individual, small-group, and whole-school interventions to support adolescents' critical social-emotional development. Of particular interest for adolescent literacy is the chapter on using curriculum-based measurement in general education classrooms to promote reading success and the chapter on interventions for students with reading comprehension problems.

John T. Guthrie

Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviors predicting students' engagement in schoolwork. *British Journal of Educational Psychology, 72,* 261–278.

Assor and Kaplan study the importance of various types of teacher behaviors that effect student autonomy. The sample included 862 Israeli-Jewish middle- to lower-class elementary students in grades three through eight. The research results indicate that to encourage positive feelings and learning engagement in students, the two most important types of teacher behaviors are fostering relevance and suppressing criticism.

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

Guthrie and Davis discuss the many factors that lead to struggling readers' disengagement with literacy as they transition from elementary to middle school. They outline for teachers the six classroom practices of their reading engagement model, designed to provide support for student-engaged reading, and give classroom examples to illustrate this instructional framework.

National Research Council and the Institute of Medicine. (2004). *Engaging schools: Fostering high school students' motivation to learn.* Washington, DC: National Academies Press.

To address the problem of pervasive disengagement, leading to a high drop-out rate in urban high school students, the National Research Council and the Institute of Medicine examined high schools' curricula, instruction, and organization. Their conclusions led them to 10 recommendations for high schools seeking meaningful engagement leading to genuine academic improvements. The report outlines some directions for future research and urges reform, lest we fail to give our youth the educational tools necessary to function in adult society.

Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. *Educational Psychologist, 41,* 19–32.

The authors study field experiment results in terms of the self-determination theory's concept of the psychological needs for autonomy, competence, and relatedness. Results did not vary in educational settings from elementary schools to medical schools. The research shows that for both intrinsically and extrinsically motivated individuals, intrinsic goal framing produces deeper engagement in learning activities, better conceptual learning, and higher persistence at those learning activities. When teachers explain the intrinsic goal utility of learning activities, they support students' deeper processing, continued interest, and persistence for learning.

Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., & Matos, L. (2005). Examining the motivational impact of intrinsic versus extrinsic goal framing and autonomy-supportive versus internally controlling communication style on early adolescents' academic achievement. *Child Development, 76,* 483–501.

Three experimental field studies on goal framing with early adolescents confirm that intrinsic rather than extrinsic goals promote a greater integrated and

conceptual processing of learning material and more committed task engagement. Further, conceptual learning was enhanced when adolescents experienced autonomy (self-determined) support rather than outside pressure to work toward goals. The same results did not apply to rote learning of educational materials.

Judith A. Langer

Adler, M., & Rougle, E. (2005). *Building literacy through classroom discussion: Research-based strategies for developing critical readers and thoughtful writers in middle school.* New York: Scholastic.

This book is a practical teacher's guide for using dynamic classroom discussion as an engine for learning. Capitalizing on adolescents' need for peer interaction, Adler and Rougle build a curriculum that bridges the gap between theory and practice with activities that support their dialogue-based approach. Scaffolding teacher knowledge with step-by-step guidance, each chapter describes the research base for the teaching techniques and offers problem-solving advice based on teacher experience.

Close, E., Hull, M., & Langer, J. A. (2005). Writing and reading relationships in literacy learning. In R. Indrisano & J. R. Paratore (Eds.), *Learning to write/writing to learn: Theory and research in practice* (pp. 176–194). Newark, DE: International Reading Association.

A discussion of a two-year research study by the Center on English Learning & Achievement (CELA), this chapter focuses on the interdependence of the reading and writing processes. Hull, a language arts teacher, describes some yearlong interdependent literacy activities implemented with her seventh-grade students. Close, director of educational outreach at CELA, provides a running commentary on how reading and writing relationship-focused instructional activities support students' understanding of both content and higher-level literacy learning. Langer gives a historical perspective of the research and concludes that when students are encouraged to view reading and writing as interdependent, knowledge in one domain informs performance in the other. Higher student literacy is the result.

Langer, J. A. (2002). *Effective literacy instruction: Building successful reading and writing programs.* Urbana, IL: National Council of Teachers of English.

Drawing on her five-year study of classes in 25 secondary schools, Langer offers a programmatic vision, a set of principles, and real-life examples to guide educators wishing to improve their literacy practices with research-based methodology. She discusses the essential features of professional development for teachers and the curricula and instruction that mark the more effective middle and high school literacy programs.

Langer, J. A. (2004). *Getting to excellent: How to create better schools.* New York: Teachers College Press.

This five-year, nested multiple-case design study involving 25 diverse schools in four states suggests broad implications for instructional improvements. Langer identifies the differences between high- and low-performing secondary schools and provides educators, parents, and community members with models for change in the context of professional, programmatic, classroom, and community growth.

Carol D. Lee

Alexander, P. A. (2003). *The path to competence: A lifetime developmental perspective on reading.* Retrieved October 12, 2006, from http://nrconline.org/publications.

Alexander discusses the need to view reading from a lifelong ("womb to tomb") developmental perspective. Focusing on the model of domain learning, Alexander reviews the stages of reading development (acclimation, competence, and proficiency) and the configurations of knowledge, interest, and strategic processing unique to each phase. She also offers recommendations for educational professional development that would enable all teachers, preschool through high school, to assist their students along this lifespan literacy continuum.

Applebee, A. N., Burroughs, R., & Stevens, A. S. (2000). Creating continuity and coherence in high school literature curricula. *Research in the Teaching of English, 34*(3), 396–429.

This study finds that over a long period of time, an experienced literacy teacher develops a feeling for both continuity and coherence in a curriculum. The study also finds that although a school's classrooms may have an accepted set of curricular conventions, conformity in broad topics and goals within the instructional guidelines hide a great deal of variation at the classroom level.

Ball, A., & Lardner, T. (2006). *African American literacies unleashed: Vernacular English and the composition classroom.* Carbondale, IL: Southern Illinois University Press.

This work provides culturally inclusive literacy instruction strategies for educators working with linguistically diverse students. In an attempt to break the cycle of underachievement for African American Vernacular English (AAVE)–speaking students, Ball and Lardner address the issues of unlearning racism and changing the prevailing pedagogical approach to composition, which they assert stifles the literacy growth in AAVE-speaking students. Advocating the growth of teacher efficacy and reflective optimism (the expectation that all students can succeed), this study offers relevant information for all teachers with linguistically diverse students.

Greenleaf, C. L., Schoenbach, R., & Cziko, C. (2001). Apprenticing adolescent readers to academic literacy. *Harvard Educational Review, 71*(1), 79–129.

Greenleaf, Schoenback, and Cziko offer an alternative to skill-based remedial reading instruction for adolescents. Believing that traditional remedial reading instruction may actually perpetuate low literacy rather than accelerate literacy growth for most secondary students, the authors designed and implemented Reading Apprenticeship, an instructional framework based on curriculum needs. They report ninth-grade student reading gains of two years' growth for seven months of classroom instruction focused on demystifying the academic literacy process across content-area reading.

Gutierrez, K., Baquedano-Lopez, P., & Tejeda, C. (1999). Rethinking diversity: Hybridity and hybrid language practices in the third space. *Mind, Culture, and Activity, 6*(4), 286–303.

The authors describe an ethnographic study of literacy practices conducted in a Spanish-immersion elementary school classroom in an urban setting. Analyzing language, activity, and relationship systems in the classroom, the authors illustrate a theoretical model for thinking about the classroom use of diversity and heterogeneity to enhance learning.

Gutierrez, K., & Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice. *Educational Researcher, 32*(5), 19–25.

This article cautions against overgeneralizing instructional practices based on membership in a minority group with perceived traits and learning styles. The

authors remind us that all group members remain individuals, with different experiences, skills, interests, and cultural practices. They argue that membership in an ethnic group is different from active participation and that, therefore, race and culture cannot be equated. Although the trait approach has the benefit of familiarity and simplicity, Gutierrez and Rogoff encourage researchers to take into account students' linguistic and cultural-historical repertoires in developing educational practices.

Lee, C. D. (1993). *Signifying as a scaffold for literary interpretation: The pedagogical implications of an African American discourse genre.* (NCTE Research Report No. 26). New York: Teachers College Press.

This report describes a small research study involving African American secondary students using ethnically rich texts. The statistically significant results led Lee to recommend integrating multiethnic literature into the curriculum of secondary schools. Such practice would draw on students' cultural and linguistic strengths and their prior cultural and social knowledge.

Lee, C. D. (2001). Is October Brown Chinese? A cultural modeling activity system for underachieving students. *American Educational Research Journal, 38*(1), 97–142.

Describing a day in her English classroom, Lee outlines a curricular design implemented with African American high school freshmen scoring in the bottom quartile of standardized reading scores. Part of the Cultural Modeling Project, this curriculum draws upon the students' rich sociocultural background to help them acquire the strategic knowledge necessary to respond to literature-rich text. Using students' implicit understanding of AAVE's rich oral language genre of signifying, Lee taught her students to analyze the strategies they used to infer meaning while signifying and use those strategies as both a foundation and a scaffold for understanding literate texts, stimulating their intellectual growth and building an interactive community of analytic readers.

Mahiri, J. (2000). Pop culture pedagogy and the end(s) of school. *Journal of Adolescent & Adult Literacy, 44*(4), 382–386.

Mahiri contends that because of what he terms "pop culture pedagogy" (the use of TV, the Internet, video games, music CDs, movies, and so on), schooling as we know it could become obsolete. Although acknowledging some problems with inequitable access, which he feels are quickly declining, Mahiri

believes an added benefit of this new educational technology is that it eliminates "targeted racist indignities" for students of color. With hip-hop and other pop cultural pedagogy creating a myriad of dynamic ways to engage students in literacy practices more closely tied to their own personal identity, Mahiri argues, our traditional school-based pedagogy must transform if it is to survive.

Morrell, E., & D'Andrade, J. (2002). Promoting academic literacy with urban youth through engaging hip-hop culture. *English Journal, 91*(6), 88–93.

The authors discuss the use of culturally relevant hip-hop songs to stimulate urban adolescents' engagement in literacy study. Arguing that hip-hop lyrics can be used as a bridge to learning traditional canonical texts while increasing students' critical and analytical skills in literacy interpretation, Morrell and D'Andrade give a practical example by describing a unit of poetry study implemented in a high school senior English classroom using the outlined scaffolding techniques.

Sharon Vaughn

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

This book is about the importance of vocabulary in improving reading comprehension and knowledge. Packed with useful facts about practices for improving vocabulary instruction, it focuses on the need to integrate knowledge of words and concepts into all aspects of teaching.

Carlisle, J. F., & Rice, M. S. (2002). *Improving reading comprehension: Research-based principles and practices.* Baltimore: York.

Comprehensively blending research-based reading principles and specific instructional practices designed to enhance all students' comprehension, the authors dissect the components of the complex comprehension process and provide classroom tools for addressing deficit areas for elementary through high school students.

Chall, J. S. (2000). *The academic achievement challenge: What really works in the classroom?* New York: Guilford.

Before her death in 1999, Jeanne Chall completed this book on the fundamental elements schools would be wise to consider before initiating

"change practices." Describing educational "fads" and why they are so attractive, Chall discusses "student-centered" and "teacher-centered" instruction and offers decision-makers guidelines for telling the difference. Chall's book provides background to key decision-makers about evaluating educational practices and will assist them in making better decisions about adolescent literacy initiatives. Chall's understanding of how to initiate and sustain educational change is extensive, and she writes about it in an easy-to-understand way.

Graves, M. F. (2005). *The vocabulary book: Learning & instruction.* New York: Teachers College Press.

Graves uses a summary of the vocabulary development and instruction research along with practical examples and classroom descriptions to present a plan for effective vocabulary instruction for all students. The plan provides powerful language experiences, teaches individual words, teaches students to use word-learning strategies, and promotes word consciousness.

McCray, A. D., Vaughn, S., & Neal, L. I. (2001). Not all students learn to read by third grade: Middle school students speak out about their reading disabilities. *The Journal of Special Education, 35*(1), 17–30.

This article describes the perceptions of 20 middle school students with reading-related learning disabilities. Middle school students speak in their own voices about why they think they have reading problems and what might assist them.

Torgesen, J., Rashotte, C., Alexander, A., Alexander, J., & MacPhee, K. (2003). Progress toward understanding the instructional conditions necessary for remediating reading difficulties in older children. In B. F. Foorman (Ed.), *Preventing and remediating reading difficulties: Bringing science to scale* (pp. 275–298). Baltimore: York.

This chapter summarizes several key research studies designed to address intervention practices that accelerate the reading growth of students with significant reading difficulties. The findings from these studies and the methods used to address reading difficulties in older students provide useful guidance to key decision-makers as they consider interventions for their adolescent literacy initiatives. The studies described provide some of the best experimental evidence available on effective interventions for older readers.

BIOGRAPHICAL INFORMATION ON CONTRIBUTORS TO "ADVICE FROM EXPERTS"

Arthur N. Applebee, Ph.D.

Arthur N. Applebee is leading professor in the School of Education, University at Albany, State University of New York; chair of the Department of Educational Theory & Practice; and director of the Center on English Learning & Achievement. An internationally known scholar, Applebee has worked as a researcher at the Microteaching Laboratory in the United Kingdom, in the Child Development Laboratory at Massachusetts General Hospital, as associate director of the federal Educational Resources Information Center on Reading and Communication Skills, and at Stanford University. He joined the faculty at the University at Albany in 1987, as part of an SUNY-wide graduate research initiative designed to place the University at Albany at the forefront of literacy research in the United States.

With degrees from Yale, Harvard, and the University of London, Applebee focuses on how children and adults learn the many specialized forms of language required for success in school subjects, life, and work. In particular, his research has reframed the ways in which both scholars and practitioners think about critical issues in literacy learning. Since the early 1970s, he has also worked as an adviser to the National Assessment of Educational Progress, helping to design, implement, interpret, and report a continuing series of evaluations of the educational attainment of U.S. students. Most recently he was asked by the National Assessment Governing Board to prepare an issues paper to guide the development of the framework for the 2011 national writing assessment.

His first book, *Tradition and Reform in the Teaching of English* (1974), became a classic in its field, and the many other books, National Assessment monographs, and reports, articles, and book chapters that have followed have been equally influential in the U.S. and across the world. *The Child's Concept of Story* (1978); *Writing in the Secondary School* (1981); *How Writing Shapes Thinking (with J. Langer,* 1987); *Literature in the Secondary School* (1993); and *Curriculum as Conversation* (1996) in particular have been widely cited.

Applebee advises at international, national, state, and local levels on

effective approaches to literacy education. For eight years he was editor of *Research in the Teaching of English* and has served on the editorial board or as a reviewer for another 15 national and international scholarly journals. He is a past president of the National Conference on Research in Language and Literacy and has been recognized for his work by election to the International Reading Hall of Fame and by the David H. Russell Award for Distinguished Research in the Teaching of English as well as the SUNY Chancellor's Award for Research Excellence. Applebee has also been a fellow of the Rockefeller Foundation Center at Bellagio, Italy.

Mary Beth Curtis, Ph.D.

Mary Beth Curtis is professor of education and founding director of the Center for Special Education at Lesley University in Cambridge, Massachusetts, a center dedicated to understanding and promoting the knowledge and skills educators need to improve the teaching of students with disabilities.

Curtis is the author of numerous articles on reading diagnosis and remediation, the role of vocabulary in comprehension, and the reading skills of at-risk teens. She is a member of the Adult Literacy Research Working Group and has provided technical assistance to the Division of Adult Education and Literacy, Office of Vocational and Adult Education, for its Student Achievement in Reading (STAR) Pilot Program. Curtis is also Lesley's principal investigator on a research project for improving the instruction of adult basic education intermediate readers, conducted in collaboration with Harvard University and Soliloquy Learning and funded by the Institute of Education Sciences, U.S. Department of Education. Curtis has been an adviser to the National Institute for Literacy, the National Center for Family Literacy, and the Massachusetts Department of Education.

Before going to Lesley in 1999, Curtis directed the Boys Town Reading Center, where she oversaw research and development on Reading Is FAME, a remedial reading curriculum shown to reverse reading failure in older adolescents. She earned her Ph.D. in psychology at the University of Pittsburgh, and she has been an associate professor of education at Harvard University, associate director of the Harvard Reading Laboratory, and a postdoctoral fellow at the Learning Research and Development Center (Pittsburgh).

Donald D. Deshler, Ph.D.

Don Deshler is director of the Center for Research on Learning (CRL) and a professor in the School of Education and at the University of Kansas. The work of the CRL focuses on validating academic strategies for adolescents who struggle with becoming good readers, writers, and learners. Deshler's work addresses ways to close the large achievement gap and to reduce the escalating drop-out rate for struggling adolescent learners. His work also includes designing instructional routines that secondary teachers can use to more effectively teach subject matter content to academically diverse classes in secondary schools. The more than $80 million of contracted research and development Deshler and his colleagues have completed has validated the Strategic Instruction Model (SIM), a comprehensive instructional model for improving outcomes for at-risk adolescents.

Through the CRL's International Professional Development Network, more than 400,000 educators have been trained to use different components of SIM. Deshler's most recent text, *Teaching Content to All: Evidence-Based Inclusive Practices in Middle and Secondary Schools* (2004), details several instructional practices validated through CRL research. CRL researchers have also produced more than 50 teacher-use curriculum materials for teaching struggling adolescent learners. Deshler serves as an adviser on adolescent achievement to several organizations, including the Carnegie Foundation, the National Governors Association, the Alliance for Excellent Education, the Council on Families and Literacy, and the U.S. State Department. His numerous awards include the J. E. Wallace Wallin Award from the Council for Exceptional Children and the Learning Disabilities Association Award from the Learning Disabilities Association of America for outstanding research and service for at-risk populations.

Bonnie Grossen, Ph.D.

Bonnie Grossen is executive director of the Center for Applied Research in Education (CARE), a California state-approved provider for professional development in reading intervention. As executive director, Grossen guides middle and high school implementations of best practices for serving high-need schools in California and other states.

Her more than 50 scholarly publications include more than 30 reports of original research studies published in peer-reviewed journals such as

International Review of Education, South African Journal of Education, Journal of Learning Disabilities, School Psychology Review, and *Journal of Research in Science Teaching,* more than 10 book chapters, and 20 reviews and syntheses of research. The thrust of her research work is on improving higher-level thinking and problem solving for all students, including students with disabilities. Most recently her work has focused on turning low-performing middle and high schools around.

Grossen has presented at more than 50 national conferences and been keynote presenter at more than 20 conferences. She has also presented to the state board and education legislative committees of Arizona, Michigan, North Carolina, Oregon, and Washington.

John T. Guthrie, Ph.D.

John T. Guthrie is a professor of human development and director of the Maryland Literacy Research Center at the University of Maryland at College Park. A member of the national advisory panels for the Evaluation of Title I, Evaluation of Early Reading First, and the New Standards Project Grades 4–5, he currently he serves on the editorial advisory boards of *Contemporary Educational Psychology, Journal of Educational Psychology, Journal of Experimental Education, and Reading Research Quarterly.*

From 1992 to 1997, as codirector of the National Reading Research Center, Guthrie focused the center's work on classroom research in motivation and contexts for developing reading engagement. Much of that work was summarized in the 1999 book *Engaged Reading: Processes, Practices, and Policy Implications.* His continued research on engaged reading was published in 2000 in *Engaging Young Readers: Promoting Achievement and Motivation,* which he coedited with Linda Baker and Mariam Jean Dreher. Currently, he is the principal investigator of a five-year federally funded grant to examine Concept-Oriented Reading Instruction as a districtwide intervention. His early findings on this project are published in articles and in *Motivating Reading Comprehension: Concept-Oriented Reading Instruction,* coedited with Allan Wigfield and Kathleen C. Perencevich (2004).

Guthrie has contributed to the *Handbook of Reading Research* (Pearson, 2000), *Comprehension Instruction: Research-Based Best Practices* (Block & Pressley, 2002), *What Research Has to Say About Reading Instruction* (Farstrup & Samuels, 2002), *Successful Reading Instruction* (Kamil, Manning, & Walberg,

2002), *Rethinking Reading Comprehension: Implications of the RAND Report for Education* (2003), and *Current Issues in Reading Comprehension and Assessment* (Paris & Stahl, 2004), among other works. He is a frequent contributor to the peer-reviewed journals *Reading Research Quarterly, Journal of Educational Psychology,* and *The Reading Teacher.*

Before going to Maryland, Guthrie served as research director for the International Reading Association and founded the Kennedy School, an institution for children with reading disabilities associated with Johns Hopkins University. Guthrie received the Oscar Causey Award for Outstanding Reading Research and is a member of the International Reading Association Hall of Fame.

Judith A. Langer, Ph.D.

Judith A. Langer, internationally known scholar in literacy learning, is distinguished professor at the University at Albany, State University of New York, where she is founder and director of the Albany Institute for Research in Education and director of the Center on English Learning and Achievement. Her studies of language, literacy, and education have had a worldwide impact on literacy theory, teaching, and assessment.

Her research focuses on the literate mind: how people become highly literate, how they use reading and writing to learn, and how education can help them become more effectively literate for school and life. Her major works examine the development of reading, writing, and thinking abilities, the effects of literacy instruction on academic learning, the ways in which learning is affected by classroom interactions, the role literature plays in intelligent thought, and the professional and classroom features that help students and schools "beat the odds." Her most recent studies focus on the kinds of professional and instructional components necessary to improve student learning.

Langer's work has had a strong impact on national policy and practice as well as theory. For example, her groundbreaking work identifying and describing the different processes used to understand literary versus informational texts formed the theoretical framework underlying international, national, and state assessments and has been incorporated into many standards, curricula, and materials. The Annenberg Foundation recently produced three eight-hour television series and accompanying video workshops based on Langer's research on literature. Her present work on schools that beat the odds is

informing school improvement efforts across the country. A consultant to the National Assessment of Educational Progress in reading since 1980, Langer serves on many advisory boards and national reform groups involved in reconceptualizing literacy education to improve student learning.

Among notable awards Langer has received are statewide university appointment as Distinguished Professor and Honorary Doctorate from Uppsala University (Sweden); the SUNY Chancellor's Award for Exemplary Contributions to Research; Distinguished Benton Fellow, University of Chicago; Fellow and Scholar-in-Residence, Rockefeller Foundation, Bellagio, Italy; Distinguished Visiting Scholar, Universities of Turku (Finland) and Trondheim (Norway); and Presidential Award for Lifetime Achievement, Hofstra University. She also received the Albert J. Harris award for research on teaching students with learning difficulties and has been inducted into the International Reading Association Hall of Fame.

Author of numerous research articles, chapters, and monographs, Langer's 10 books include *Children Reading and Writing: Structures and Strategies* (1986); *Language, Literacy, and Culture: Issues of Society and Schooling* (1987); *How Writing Shapes Thinking* (1987); *Envisioning Literature: Literary Understanding and Literature Instruction* (1995); *Effective Literacy Instruction: Building Successful Reading and Writing Programs* (2002); and *Getting to Excellent: How to Create Better Schools* (2004). Editor of *Research in the Teaching of English* for nine years, Langer sits on six editorial boards and has reviewed for 17 journals and many research agencies, internationally and in the United States.

Carol D. Lee, Ph.D.

Carol D. Lee is a professor of education and social policy in the Learning Sciences Program of the School of Education and Social Policy at Northwestern University. With research interests in urban education, cultural supports for literacy, classroom discourse, and instructional design, she focuses her research on curriculum designs that support literate problem solving in response to literature, particularly by drawing on forms of cultural capital, especially community language practices, of African American adolescent speakers of African American Vernacular English. Her work also incorporates uses of technology to support literate problem solving. Lee has developed a theory of cultural modeling that provides a framework for the design and

enactment of curriculum that draws on forms of prior knowledge that traditionally underserved students bring to classrooms.

Lee's research projects are or have been funded by the McDonnell Foundation's Cognitive Studies in Educational Practice, by the Spencer Foundation, and by the National Center for the Study of At-Risk Children, cosponsored by Howard University and John Hopkins University, and by the National Council of Teachers of English. A teacher in both public and private schools before assuming a university career, Lee is active in the Chicago Public Schools school reform movement and in both local and national professional development activities. The founder (in 1975) and former director of New Concept School, an African-centered independent school in Chicago, Lee also founded and established an African-centered charter school, the Betty Shabazz International Charter School, with three campuses.

The author of two books, *Signifying as a Scaffold for Literary Interpretation: The Pedagogical Implications of an African American Discourse Genre* (1993) and *The Role of Culture in Academic Literacies: Conducting Our Blooming in the Midst of the Whirlwind* (in press), Lee is coeditor, with Peter Smagorinsky, of *Vygotskian Perspectives on Literacy Research* (2000). She has published in numerous journals, including *Reading Research Quarterly, American Educational Research Journal, Research in the Teaching of English, The Journal of Black Psychology,* and *Journal of Negro Education,* among others.

Lee is the past president of the National Conference on Research in Language and Literacy, past chair of the Standing Committee on Research of the National Council of Teachers of English, a former trustee of the Research Foundation of the National Council of Teachers of English, and a former cochair of the NCTE Assembly on Research. An active member of the American Educational Research Association (AERA), Lee is vice president of Division G (Social Contexts of Education) of AERA and has served as a member of the AERA Book Award Committee, among other roles. She co-coordinates the Spencer Research Training Program in Northwestern University's School of Education and Social Policy and was a fellow at the Center for Advanced Study in the Behavioral Sciences in Stanford, California. Lee received her undergraduate degree in English education from the University of Illinois at Urbana, a master's degree in English from the University of Chicago, and a Ph.D. in curriculum and instruction from the University of Chicago.

Sharon Vaughn, Ph.D.

Sharon Vaughn is the H. E. Hartfelder/Southland Corporation Regents' chair and professor at the University of Texas. She was the coeditor of *Learning Disabilities Research and Practice* and the editor in chief of the *Journal of Learning Disabilities.* She has served as the president of the Division for Learning Disabilities of the Council for Exceptional Children and was awarded the Special Education SIG award by the American Educational Research Association for her contributions to research. The author of several textbooks on instructional methods for teaching students with learning difficulties and disabilities, she is also the editor or author of several books that summarize research on specific topics related to reading difficulties and disabilities, including a book with Sylvia Linan Thompson on research-based instructional methods for teaching reading and one with Janette Klingner on reading comprehension. Vaughn has published more than 70 research articles on instructional practices for students with reading difficulties and disabilities.

The principal investigator or coprincipal investigator on several research projects funded by the National Institute of Child Health and Human Development, the Institute for Education Sciences, and the Office of Special Education Programs, Vaughn's current research projects address (1) the effectiveness of a three-tiered intervention framework (with S. Linan-Thompson and B. Elbaum), (2) the effectiveness of vocabulary and comprehension practices on improving teacher quality and student outcomes in fourth and fifth grade (with D. Simmons), (3) the effectiveness of several comprehension practices with expository text with fifth-grade students (with R. Gersten and J. Dole), (4) response to intervention with adolescents with reading difficulties and disabilities (with J. Fletcher, C. Denton, and D. Francis), and (5) two ongoing studies with English language learners—one evaluating an ELL program (with D. August, D. Francis, and S. Linan-Thompson) and one examining the effectiveness of comprehension practices for adolescents (with S. Linan-Thompson).

A former public school teacher in Hannibal, Missouri, and Tucson, Arizona, Vaughn has worked closely with practicing teachers and educational leaders to assist in implementing research-based practices in classrooms and schools. She conducts research in school settings, working cooperatively with educational leaders and teachers to ensure effective implementation and gain information about the feasibility and sustainability of research-based practices.

PART THREE: EXAMPLES OF STATE ACTIVITIES IN SUPPORT OF IMPROVED ADOLESCENT LITERACY INSTRUCTION

The following examples describe a range of state-level actions or programs designed to improve student reading performance in grades 4–12. Each example offers a brief overview of a targeted activity in a state's initiative. The examples do not reflect every component of a state initiative, but are intended to give a sense of the context or infrastructure that supports the targeted activity.

California

Targeted activities: Secondary literacy demonstration sites; math and reading professional development; secondary literacy summit

1995—Reading Task Force

- State superintendent of public instruction convened a task force with representatives from a broad cross-section of citizens.

- Reading Task Force reviewed research materials and took expert testimony about effective, comprehensive beginning reading programs.

- Task force developed 10 recommendations for immediate and long-range action.

1996—California Department of Education Policy Statement

- California Department of Education issued policy statement to define components of reading program and describe instructional guidance and support to be provided.

- Instructional guidance and support included establishing standards, providing yearly effective professional development in literacy, and developing methods to support districts and schools in evaluating programs to improve reading instruction.

1997—California established state content-area standards
1999—California Special Education Reading Task Force

- California Department of Education convened Special Education Reading Task Force to address the relationship between the state reading initiative and reading instruction for struggling readers or students with reading disabilities.
- Task force produced a report that described effective reading instruction, early intervention, assessment, access to curriculum standards, and research-based strategies for struggling readers or students with reading disabilities.

2002—California State Board of Education approved English/language arts K–8 instructional materials

- Local school boards adopted instructional materials for grades 9–12 that were aligned with state academic content standards.

Targeted activity: Secondary literacy demonstration sites

2000—Established schoolwide literacy model and identified demonstration sites

- California Department of Education disseminated *Strategic Teaching and Learning* document as guidance to schools and districts in developing a schoolwide literacy model.
- A design template for the schoolwide literacy model, with a checklist of model components, was made available to schools.
- One school district and a mix of middle and high schools were identified as demonstration sites containing many components of the model.
- Sites were showcased for regional networks in 2000–2001 and 2001–2002 to emphasize reading and writing across the curriculum, quality reading interventions, library media services, and evidence of success.

Targeted activity: Math and reading professional development

2002—Established Mathematics and Reading Professional Development Program for Teachers

- State legislation was passed to establish the Mathematics and Reading Professional Development Program.
- Purpose of the program was to enable teachers to participate in high-quality professional development activities in reading and mathematics that coordinated with adopted instructional materials used in the schools.

- Program for teachers was designed to complement the Administrator Training Program (described below).

- Professional development was provided by state board of education–approved trainers and incorporated approved core content.

- Forty hours of content-intensive professional development and 80 hours of follow-up constituted the 120-hour professional development sequence.

- Content-area adopted instructional materials used in the professional development had to be available in the schools.

- Districts received reimbursement funding for K–12 teachers who participated in the professional development ($2,500 per teacher with no more than $1,000 as a stipend).

- Policies defined teachers who were prioritized for participation and for reimbursement funds.

- State legislative process budgeted reimbursement allocations.

- State legislature continued program reauthorization.

2002—Established Administrator Training Program (formerly Principal Training Program)

- State legislation was passed to establish the Administrator Training Program.

- Purpose of the program was to enable administrators to participate in high-quality professional development activities in human resources, technology, curriculum (complementary to content in Mathematics and Reading Professional Development Program for Teachers), and issues to address individual schools' needs.

- Program for administrators was designed to complement the Mathematics and Reading Professional Development Program for Teachers.

- Professional development was provided by state board of education–approved trainers and incorporated approved core content.

- Forty hours of content-intensive professional development and 80 hours of follow-up constituted the 120-hour professional development sequence.

- Content-area adopted instructional materials used in the professional development had to be available in the schools.

- Districts received reimbursement funding for administrators who participated in the professional development ($2,500 per administrator).

- Policies defined administrators who were prioritized for participation and for reimbursement funds.

- State legislative process budgeted reimbursement allocations.

- State legislature reauthorized program.

2005—Mathematics and Reading Professional Development Program final report

- As required by the state legislature, a report on the impact of three years of implementation of the Mathematics and Reading Professional Development Program was submitted in July 2005.

- Data were collected from a sample of 28 of the 375 participating schools.

- In three years, 75,109 teachers participated in the professional development; approximately 86% participated in reading and 14% in math.

- Majority of teachers rated the professional development positively (46% "very effective," 40% "somewhat effective").

- Teacher retention data indicated that 95.8% of teachers who received training continued careers in teaching.

- Majority of principals indicated the professional development met teachers' needs at their site (59% "very much," 38% "somewhat") and increased teacher effectiveness (48% "very much," 48% "somewhat").

2005—Principal Training Program reauthorized and funded
2006—Mathematics and Reading Professional Development Program for Teachers reauthorized and funded

Targeted activity: Secondary Literacy Summit

- Established in 2000, the conference is designed for middle and high school teachers, administrators, school teams, and others interested in adolescent literacy.

- Keynote presenters, seminars, and workshops focus on topics related to reading, academic vocabulary, comprehension, writing, and instructional strategies.

- School presentations showcase secondary school personnel who are successful in improving student literacy.

- Multiple sponsors include the California Department of Education, state-level associations, and technical assistance organizations.

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Florida

Targeted activity: District K–12 comprehensive research-based reading plans

2002

- Created a state-level office to direct a comprehensive coordinated reading plan for entire state.

- Established a reading endorsement on the Florida teaching certificate to designate special expertise in reading.

- Facilitated the Just Read! Florida Leadership Conference as a yearly intensive training opportunity for principals and reading coaches to support making reading a priority for their schools. This yearly conference continues through 2007.

2003

- Created the Reading Coaches Initiative, which provides funding for hiring K–12 reading coaches to work in schools.

- Instituted Just Read! Florida Reading Academies to provide intensive teacher training each summer with targeted follow-up by reading coaches for grades K–3, expanding to K–12 in summer 2007.

- Designed the Progress Monitoring and Reporting Network (PMRN), a Web-based tool to report student data required for Reading First assessments. Made available to middle schools in 2005 and to high schools in 2007.

- Arranged for K–12 reading diagnostic assessments to be available to schools at no charge.

2004

- Launched the Florida Middle School Reading Coach Initiative to provide reading coaches trained to provide on-site professional development and serve as a resource to teachers in the lowest-performing half of all middle schools.

2005

- Enacted a state statute that requires school districts to provide reading intervention for every student with reading scores below grade level (Levels 1 and 2) on the state assessment.

- Started the Florida Reading Coaches Association to establish a network of reading practitioners and support ongoing reading professional development statewide.

- Developed LEARN, a computer-based tool for school personnel to provide instructional strategies and knowledge on the five components of reading. Initially addressed grades K–3; expanded to 4–12 in 2006.

- Created Florida Oral Reading Fluency Probes for middle schools (grades 6–8) that are used for progress monitoring on the PMRN; expanded to grades 9–12 in 2006.

2006

- Created a professional development package in reading specifically designed for content-area teachers.

- Designated a permanent reading allocation as part of the state education finance program to support district implementation of K–12 comprehensive research-based reading plan.

Targeted activity: District K–12 comprehensive research-based reading plan requirement

- Established requirement for school districts to submit a K–12 comprehensive research-based reading plan to access reading funds in state school finance plan (2004).

- Included district requirements to ensure that
  - district and school leaders would guide and support the plan using data-driven decision–making;
  - professional development would be systemic in the district, yet targeted to individual teachers' needs based on student performance data; and
  - student achievement goals would be established to address specific needs, would be measurable, and would be supported using appropriate research-based instructional materials.

- Instituted three major components of the plan:
  - Leadership and monitoring
    + District establishes expectations and monitors services and performance at school level.

+ School leadership monitors teacher classroom instruction and interventions related to reading.
+ Defines roles, support, and activities of principal, reading coach, and teachers.

- Professional development
  + All activities must align with scientifically based reading research and national and state professional development standards.
  + Districts ensure that professional development, available at the basic, foundation, and mentor levels, is delivered by qualified providers and based on identified student needs.
  + Coaches and mentor teachers are an integral part of professional development.
  + State funding allocation can be used to provide coaches and other professional development (including participation in state-sponsored activities such as summer reading academies).

- Achievement and instruction
  + Instructional program aligns to scientifically based reading research and includes an assessment/curriculum decision tree to guide student interventions.
  + The range of interventions available to students to address reading needs includes intensive reading instruction, reading in content areas, before- and after-school programs, and summer reading programs at the elementary, middle, and high school levels.

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Rhode Island

Targeted activity: Rhode Island high school reading initiative

November 2000—First High School Summit

- Summit cosponsored by Rhode Island Department of Education (RIDE) and Northeast Regional Educational Laboratory at Brown University.

- Focus group formed with nearly 100 key stakeholders from broad constituency groups.

- Summit organized around five main goals:

  - Confirm which skills and knowledge students should possess upon graduation.

  - Develop new strategies to achieve results.

  - Identify the obstacles to achieving such results.

  - Identify steps for post-summit activities.

  - Propose recommendations to regents concerning Rhode Island high schools.

March 2002—Second High School Summit

- Cosponsored by RIDE, Rhode Island Office of Higher Education, Rhode Island Department of Labor and Training, and the state school-to-career office.

- Second summit served as both progress report on the outcomes of the first summit and forum for additional ideas about improving the state's high schools.

- Summit organized around the priorities that emerged from the regents' subcommittee—literacy, graduation requirements, and personalization.

June 2002—Draft regulations regarding high schools

- Following second summit, the high school subcommittee of the board of regents met and developed draft regulations that emphasized literacy, graduation requirements, and restructuring and personalization.

- Draft regulations were approved by the board of regents in June 2002.

Fall 2002—Public hearings

- Public meetings, regional meetings, and numerous meetings with

superintendents, principals, school committees, and other interested parties were held.

- Following intensive dialogue, subcommittee of regents met to revise draft regulations based on feedback received.

January 2003—Regulations approved

- Rhode Island Board of Regents for Elementary and Secondary Education approved *Regulations Regarding Public High Schools and Ensuring Literacy for All Students Entering High School, Version 1.12* on January 9, 2003. The final regulations were designed to

  - provide an organizational structure for redesigning elementary, middle, and secondary schools to help all students achieve at high levels

  - provide schools, districts, and the state with a concrete plan of action focused on literacy

  - establish more student-centered, performance-based, personalized learning communities that ensure students are known well and taught and assessed using multiple measures

  - approach K–12 changes systematically to ensure students are provided with the requisite foundation prior to entering high school

  - create secondary schools designed to meet the needs of currently enrolled students and those who will be entering with the benefit of this comprehensive K–12 focus on their learning

Targeted area: Assessing students' reading levels before and during high school

Assessment

- Students are screened using state assessment data and/or a local screening process to identify which students are reading below grade level.

- Students who are identified as reading below grade level are diagnostically assessed to determine strengths and weaknesses.

Intervention

- Diagnostic assessment results inform student-by-student decisions about additional reading instruction and intervention(s).

- The intervention component offers the widest range of targeted instructional supports and services as a child progresses from elementary, to middle, to high school.

Progress monitoring

- A record of each student's literacy progress is maintained.

- The record is used to determine the success of the intervention(s) to date and to help determine the future course of action for the student.

Targeted area: A scaffolded framework for secondary literacy

Schoolwide discipline-specific literacy instruction

- For all students above and below grade level.

- Instruction and assessment in every class that focus on the discipline-specific literacy skills that students need to read and acquire information in that subject.

- Assessment-guided instruction provides ongoing assistance in navigating the increasingly complex content, concepts, text structure, and vocabulary that students encounter in text.

Targeted literacy instruction

- For students reading one to two years below grade level or who are identified by local criteria as having learning needs appropriately addressed through targeted literacy programs.

- Specially trained (not necessarily reading-certified) teachers provide targeted instruction in ramp-up programs, extended literacy periods, and study skills classes.

- A record of screening, intervention, and progress monitoring results must be maintained.

Intensive literacy instruction

- For students reading three or more years below grade level or who are identified by local criteria as having learning needs significant enough to require direct reading instruction provided by a certified reading specialist.

- A personal literacy plan (PLP), required for each of these students, provides a problem-solving approach for improved student reading that is

cyclical, is inclusive (involving teachers, parents, administrators, etc.), and connects to the process of school improvement.

- Students identified as needing intensive literacy instruction will also receive schoolwide discipline-specific literacy instruction; they may also receive targeted literacy instruction or, based on their progress monitoring, may move between interventions.

Targeted area: Planning, budgetary implications, and RIDE supports

School improvement planning and school articulation

- District strategic plans and school improvement plans must include specific information about the methods and means by which students who are reading below grade level will attain at least grade-level abilities.

- Students must be provided with "specialized assistance" until they attain grade-level proficiency.

- Districts are expected to ensure articulation between school levels and to support the implementation of the Scaffolded Framework for Secondary Literacy.

Budgetary implications for secondary literacy districts

- professional development needed to foster schoolwide literacy services

- staffing to provide targeted literacy instruction in additional or extended periods of time

- professional development for teachers providing the targeted literacy instruction

- instructional materials needed to support the increased focus on literacy

- specially trained reading personnel to implement the PLPs for students who require intensive literacy instruction

- diagnostic assessments to determine students' literacy needs

- reading specialists and/or literacy coaches needed to provide direct in-class modeling, coaching, and support to content-area teachers

Rhode Island Department of Education supports

- DOE provides professional development that teachers need to effectively teach and assess the discipline-specific literacy skills.

- DOE creates training materials that can be used at the network level and by local districts and schools to provide research-based, job-embedded professional development focused on adolescent literacy.

- DOE works in conjunction with districts to establish school structures that support the deep implementation of reading practices.

- DOE develops protocol for schools and districts to evaluate how well the learning, teaching, and school structures are working to ensure that all students are achieving high levels of literacy.

- DOE supports district efforts to create and sustain the capacity needed to continue developing students' literacy proficiency, thereby reducing future literacy difficulties.

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Washington

Targeted activities: Instructional materials reviews for reading; Washington State K–12 Reading Model Implementation Guide; Literacy Leadership Cadre—statewide regional professional development delivery model for reading

2003—Washington State Reading Initiative (WSRI)

- Initiative established to address a four-year lack of growth in student reading gains, concerns that students of culturally and linguistically diverse groups were at risk of reading failure, and possible misidentification of students as dyslexic or learning disabled.

- Established the temporary position of executive director for the WSRI.

- Developed broad K–12 plan that outlined how to improve reading achievement for all students.

- Executive summary stated the WSRI purpose, goals, and measurable outcomes and detailed the five principles for sustaining reading success:

  - research-based practice and continuous evaluation

  - strategic professional development for all participants

  - systemic and strategic collaboration among all groups

  - voluntary participation

  - improved and expanded state and district literacy policies

- Five-year implementation plan (2003–2008) with specific activities and evaluation measures for each year and each level (pre-K–3, 4–8, and 9–12).

Targeted activity: Instructional materials reviews for reading

2004—Grades 4–12 reading intervention materials review

- State-mandated study of current reading research was conducted by a panel of educational representatives.

- Panel reviewed published reading intervention materials available for students in grades 4–12.

- Review results were published in an evaluation report to assist schools in selecting the most promising intervention material for students in grades 4–12.

- Report contained a full list of materials reviewed, whether or not they met the Washington state standards, and evaluation criteria rubrics.

2005–2006—K–12 reading core/comprehensive instructional materials reviews

- A full review of programs K–10 was completed in the fall of 2004, with the report published in January 2005.

- State convened a panel of educators to review comprehensive/core reading programs for grades K–3.

- Panel assessed submitted instructional materials and the extent to which they aligned to quality standards for reading achievement and research-based instructional scope and sequence.

- Publishers were required to provide citations as evidence of alignment of instructional materials to the K–3 reading grade-level expectations; those who did not were disqualified from review.

- Results published in April 2006: *Washington State Instructional Materials Review: K–3 Reading Core/Comprehensive Instructional Materials* (in English and Spanish).

- A menu of programs qualifying for Reading First schools was created from the overall programs reviewed, to be adopted for Cohort 3 Reading First schools.

- A review of reading core/comprehensive instructional materials for grades 4–10 was scheduled for October 22–27, 2006, with a report to be released at the January 2007 conference sponsored by the Office of Superintendent of Public Instruction (OSPI).

Targeted activity: Washington State K–12 Reading Model Implementation Guide

- The state published a comprehensive guide that outlines the parameters of the K–12 reading model action plan at both district and school levels.

- Guide includes detailed plans for each implementation phase and an abridged action plan for immediate, short-term impact.

- Document is organized around five major components: standards, assessment, instruction and intervention, leadership, and systemwide commitment (SAILS).

- Built on a three-tiered intervention model, guide includes information for implementing this approach at elementary, middle, and high school levels.

- Document aligns with Washington State Response to Intervention (RTI) manual (published in 2006), a key component of the reauthorization of the Individuals with Disabilities Educatin Act (IDEA).

- Guide outlines the four types of assessments used in the Washington K–12 reading model: screening, progress monitoring, diagnostic, and outcome.

- Document uses the five essential components of reading to build a foundation of literacy for all students and addresses how to bridge the achievement gap for special education and ELL students.

- Guide details leadership roles for the district reading coordinator, principal, reading coach, and both core and content-area teachers.

- K–12 reading model is used as an anchor document when awarding grant funding to implement a systemic approach to reading reform in schools; it is used to gauge the level of a district's understanding of the research and commitment to implement research-based practices in schools identified by the school district.

Targeted activity: Literacy Leadership Cadre—statewide regional professional development delivery model for reading

- Group comprises 80 educators from around the state, including administrators, curriculum directors, literacy coaches, classroom teachers, and district literacy coordinators.

- Includes personnel from each of the nine regional educational service districts in Washington, including special education and general education staff.

- Cadre members act as regional resources for training on scientifically based reading research in their school and regionally.

- All cadre members received three days of literacy coaching training at summer institutes sponsored by the OSPI to ensure initial foundation knowledge.

- Training in Language Essentials for Teachers of Reading and Spelling (LETRS) is ongoing throughout the 2006–2007 school year for entire cadre.

- There is a proposal to the governor to fund this cadre work for the next two years to build capacity and coherence in reading research and instruction and to assist in full implementation of the K–12 reading model statewide.

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