

Reading Strategies for Middle and High School Students
A Review of the Literature

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Executive Summary

Proficient readers are those who read fluently, possess a depth and breadth of vocabulary and background knowledge, use a wide range of reading comprehension and meta-cognitive strategies, are self-directed and engaged. They think ‘literately,’ critically questioning and building on prior knowledge, though literate thinking differs by discipline.

According to 2007 data, 69 percent of the nation’s eighth graders scored below the proficient level. Compared to national averages, Virginia’s eighth graders fared slightly better in 2007, with 66 percent of eighth grades scoring below proficient, and 21 percent scoring below basic levels of literacy. But fewer of Virginia’s eighth graders are reading at or above proficiency than in 2002, and sub-groups of eighth graders (males, African Americans and Hispanics) score disproportionately below this average.

The U.S. Department of Education found that the following adolescent reading interventions were being used: (a) explicit vocabulary instruction; (b) direct and explicit comprehension strategy instruction; (c) extended discussion of text meaning and interpretation; (d) student motivation and engagement; (e) intensive and individualized interventions for struggling readers, provided by trained specialists.

Explicit vocabulary instruction. Children learn new vocabulary through extensive reading. However, they also need direct instruction (a) to learn new words (low-frequency, general words, and disciplinary/technical words) and (b) to learn how to learn new words independently (e.g., context clues, morphology). Word rich classrooms encourage word play and word consciousness. Words are best learned through multiple exposures in multiple contexts. Strategies such as semantic feature analysis help students learn the relationships and boundaries of words.

Direct instruction of comprehension strategies. Content-area reading strategies, such as the following, boost discipline learning and improve general reading skills: (a) active comprehension monitoring that leads to fix-up strategies; (b) graphic and semantic organizers, including story maps; (c) question generation; (d) summarization and paraphrasing; and (e) selective rereading. Explicit strategy instruction should include demonstrations (e.g., teacher think-alouds) and discussions to help students understand why the strategy can be useful, how to do it, and when it is appropriate to use. Content area teachers will require professional development support.

Extended discussion of text. Comprehension of difficult text is enhanced through discussions that engage students in predicting, questioning, clarifying, summarizing, interpreting, and connecting with prior learning. Discussions help students scaffold each other, build communities of practice, and model literate thinking. But they may require

major adjustments to the curriculum and a negotiated balance between depth and breadth of content covered.

Motivation and engagement. Adolescents are motivated by (a) having interesting and relevant content and learning goals that are tied to “big picture” issues and themes, and (b) being challenged (“academic press”). The following strategies may improve engagement: (a) a reasonable range of choice and autonomy; (b) hands-on learning experiences; (c) interesting and accessible tests; (d) collaboration through discussions and assignments. Adolescents are also engaged when academic literacy practices support their need to belong and form healthy identities. Non-academic literacies (e.g., digital, pop culture, vernacular, and other texts) may be viewed as resources that can bridge out-of-school and disciplinary learning.

Intensive interventions for struggling readers. Struggling readers can be triaged into those with and without word-level proficiency. Those with passable word-level skills may be better served through content area reading support for vocabulary, fluency, and comprehension. Those that require word-level instruction need specialized intensive help. Those significantly behind (e.g., 2+ years) require a system approach such as Response to Intervention. All learners, including ELLs, benefit from formative assessments and differentiated instruction, but content teachers need concrete, living examples.

Other findings. To effectively implement these strategies, the following are recommended: (a) integrate SOLs with instruction at deep, “essential knowledge” levels; (b) seek buy-in at all levels; (c) focus on no more than 2-4 comprehension strategies at a time; (d) create incentives and professional development support for content teachers and define what is and is not expected of them; (e) encourage each discipline to define its own essential literacy skills.

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Introduction: Adolescent Reading Proficiency

The challenge:

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).

Search Method

This review targets “best practices” in adolescent reading instruction. While writing is inextricably related to reading, this review did not explicitly target studies of writing. However, where writing studies informed reading instruction, they were cited in this review. The first step in this search for empirical data was the U.S. Department of Education, Institute of Education Science’s What Works Clearinghouse. From the reports listed there, I followed major references to identify other key and current publications that targeted educators and stakeholders at the classroom, school, system, and State levels. Though its findings are still emerging and we are still learning how to apply them to the “real world” of practice, the field of adolescent literacy research has produced an impressive volume of empirical and theoretical scholarship over the past decade. Due to time constraints, rather than attempt to review primary sources, I relied on the following 17 syntheses of studies. Collectively they summarize the findings from 37 experimental and quasi experimental studies (Kamil et al., 2008) as well as hundreds of correlation studies and theoretical papers:

1. Boardman, A. G., Roberts, G., Vaughn, S., Wexler, J., Murray, C. S., & Kosanovich, M. (2008). *Effective instruction for adolescent struggling readers: A practice brief*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
2. Center on Instruction. (2007) *Adolescent literacy resources: An annotated bibliography*. RMC Research Corporation, Portsmouth, NH: Author.
3. Christenbury, L., Bomer, R. & Smagorinsky, P. (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press.
4. Duffy, H., (2007). *Meeting the needs of significantly struggling learners in high school: A look at approaches to tiered intervention*. National High School Center. Retrieved on March 1, 2009 from: <http://www.pathwaystocollege.net/PCNLibrary/ViewBiblio.aspx?aid=2807>
5. Gajria, M., Jitendra, A., Sood, S., & Sacks, G. (2007). Improving comprehension of expository text in students with LD: A research synthesis. *Journal of Learning Disabilities*, 40, 210-225.
6. Haynes, M. (2007). *From state policy to classroom practice: Improving literacy instruction for all students*. Alexandria VA: National Association of State Boards of Education.
7. Haynes, M., Dickson, S., Lee, P. & Kysilko, D. (2006). *Reading at risk. The report of the NASBE study group on middle and high school literacy. Revised edition. July 2006* Alexandria VA: National Association of State Boards of Education.
8. Heller, R., & Greenleaf, C. L. (2007). *Literacy instruction in the content areas: Getting to the core of middle and high school improvement*. Washington, DC: Alliance for Excellent Education.

9. Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., and Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A Practice Guide* (NCEE #2008-4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee/wwc>
10. McPeak, L., Trygg, L., Minadakis, A., & Diana, P. (2007). *The secondary literacy instruction and intervention guide. Helping school districts transform into systems that produce life-changing results for all children*. Mill Valley, CA: Stupski Foundation.
11. Meltzer, J. (2001). *Adolescent literacy resources: Linking research and practice*. Providence, RI: Northeast and Islands Regional Educational Laboratory at Brown University. Retrieved April 25, 2006, from http://www.alliance.brown.edu/pubs/adlit/alr_lrp.pdf
12. Murray, C. S., Wexler, J., Vaughn, S., Roberts, G., Tackett, K. K., & Kosanovich, M. (2008). *Effective instruction for adolescent struggling readers: Professional development module. Facilitator's guide*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
13. Phillips, M. (2005). *Creating a culture of literacy: a guide for middle and high school principals. Executive summary*. Reston VA: National Association of Secondary School Principals.
14. Scammacca, N., Roberts, G., Vaughn, S., Edmonds, M., Wexler, J., Reutebuch, C. K., & Torgesen, J. K. (2007). *Interventions for adolescent struggling readers: A meta-analysis with implications for practice*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
15. Torgesen, J., Houston, D., & Rissman, L. (2007a). *Improving literacy instruction in middle and high schools: A guide for principals*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
16. Torgesen, J. K., Houston, D. D., Rissman, L. M., Decker, S. M., Roberts, G., Vaughn, S., Wexler, J. Francis, D. J., Rivera, M. O., Lesaux, N. (2007b). *Academic literacy instruction for adolescents: A guidance document from the Center on Instruction*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
17. Torgesen, J. K., & Miller, D. H. (2009). *Assessments to guide adolescent literacy instruction. Portsmouth, NH: RMC Research Corporation, Center on Instruction*.

Background

Torgesen et al. (2007a) described six dimensions to proficient reading performance at the intermediate and secondary levels: (a) fluent reading of connected text; (b) depth and breadth of vocabulary knowledge; (c) sufficient prior knowledge of content (domain specific and general knowledge); (d) wide range of reading comprehension strategies; (e) higher-level thinking skills; and (f) motivation and engagement (p. 2). Proficient readers, compared to less proficient readers: monitor their comprehension more actively and effectively (Pressley, 2000), and use a variety of active cognitive strategies to enhance their comprehension and repair it when it breaks down (Nation, 2005).

Across the U.S., reading proficiency is monitored by the U.S. Department of Education's National Assessment of Educational Progress (NAEP). Kamil, Borman, Dole, Kral, Salinger and Torgesen (2008) noted that:

The 2007 NAEP [found that] 69 percent of 8th grade students fall below the proficient level in their ability to comprehend the meaning of text at their grade level. Equally alarming, 26 percent of students read below the basic level, which

means that they do not have sufficient reading ability to understand and learn from text at their grade level. (p. 4)

Compared to the national averages, Virginia fared slightly better in 2007, with 66 percent of eighth grades scoring below proficient, and 21 percent scoring below basic levels of literacy (Figure 1).

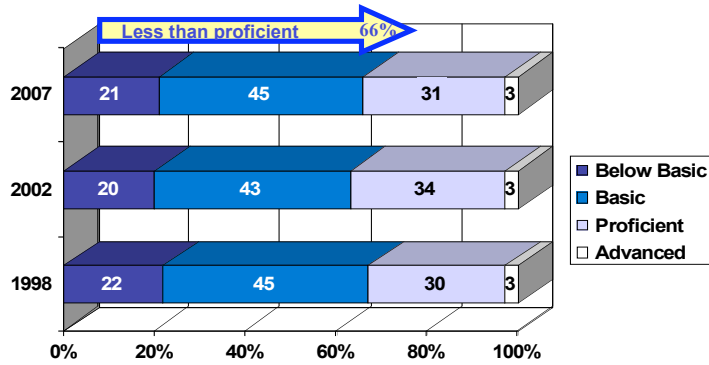


Figure 1 NAEP Virginia 8th grade

Of course this is not cause for celebration, since (a) fewer eighth grade readers (proportionally) were reading at or above proficiency in 2007 than in 2002 (Figure 1), and (b) sub-groups of eighth graders (males, African Americans and Hispanics) are disproportionately less proficient than others (Table 1).

Table 1. Performance of NAEP Reporting Groups in Virginia: 2007, 8th Grade Reading.

<i>Group</i>	<i>% Pop</i>	<i>Ave Score</i>	<i>Below Basic</i>	<i>Basic or Above</i>	<i>Proficient or Above</i>	<i>Advanced</i>
Male	49	262	26	74	28	2
Female	51	272	16	84	39	4
White	61	273	15	85	40	4
Black	26	252	36	64	16	--
Hispanic	6	258	33	67	25	3
Asian/Pacific	5	280	10	90	54	5

What is going on? Kamil et al. (2008) report that middle and high school teachers feel unprepared to help their students with reading and writing skills; other teachers “do not think that teaching reading skills in content area classes is their responsibility” (p. 4). The team identified structural barriers such as the following:

1. Some teachers circumvent the need for students to read texts by adjusting their assignments or methods of presenting content, rather than helping students learn the discipline specific strategies needed for content-area work.
2. Content-area teachers expressed resistance to the work of the high school reading specialists, whose job is to provide students with additional help outside their regular class structure.
3. Teachers who strive primarily to cover the content of their disciplines are unaware that by increasing students' ability to read their assignments they could actually increase the depth and breadth of content that could be covered efficiently.
4. When schools actually institute programs to help struggling adolescent readers, they are housed within special education programs and thus serve only a small proportion of the students whom they could benefit. (p. 5)

Kamil et al. (2008) summarized findings from the U.S. Department of Education's What Works Clearinghouse based on evidence from recent adolescent reading intervention studies.

For questions about what works best, high-quality experimental and quasi-experimental studies—such as those meeting the criteria of the What Works Clearinghouse (<http://www.whatworks.ed.gov>)—have a privileged position. In all cases we pay particular attention to findings that are replicated across studies.

Based on the Clearinghouse's criteria, Kamil et al. found strong or moderate evidence for the following five interventions:

1. Explicit vocabulary instruction (Strong evidence)
2. Direct and explicit comprehension strategy instruction (Strong)
3. Extended discussion of text meaning and interpretation (Moderate)
4. Increased student motivation and engagement (Moderate)
5. Intensive and individualized interventions for struggling readers that can be provided by trained specialists (Strong)

These interventions are addressed throughout the four sections of this review of literature. Section one—academic literacy instruction—addresses the first four interventions, particularly as they apply to middle and high school content teachers. Section Two addresses differentiation and assessment—particularly formative assessment—as they apply to content teachers and reading specialists alike. The third section builds on section two as it focuses on struggling readers (intervention five) and identifies ways to triage the reading support needs of adolescents with approaches such as Response to Intervention (RTI). The fourth section presents social cultural perspectives on adolescent literacy; it addresses issues of engagement, identity, and social learning (interventions three and four).

Section One: Academic Literacy Instruction

Torgesen et al. (2007b) studied interventions of academic literacy, which they defined as “the kinds of reading skills students need to be successful both in school and on State level accountability measures” (p. 3). The Torgesen team argued that the challenge to support adolescent academic literacy development belongs to all teachers and requires a systems approach:

All teachers in every elementary, middle, and high school must be involved, and we must also have efficient school-level systems...[Content] teachers 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. However, 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. (p. 12)

Consistent with the intervention findings of Kamil et al. (2008), the Torgesen team noted five reading instructional foci for academic literacy instruction located within the disciplines and taught (primarily) by content teachers: (a) explicit instruction in the use of comprehension strategies; (b) open, sustained discussion of reading content; (c) high standards for text, conversation, questions, and vocabulary; (d) practices to increase motivation and engagement with reading; and (e) strategies that lead to greater learning of vocabulary and essential content knowledge. Each of these foci will be addressed.

Focus One: Increasing Explicit Instruction in the Use of Comprehension Strategies Throughout the School Day

Recent findings suggest a shift from comprehension practice to explicit instruction in comprehension strategies. Torgesen et al. (2007b) classified these strategies into five areas:

1. active comprehension monitoring that leads to fix-up strategies;
2. graphic and semantic organizers, including story maps;
3. question generation;
4. summarization and paraphrasing; and
5. selective rereading (p. 18)

Langer (2001) found that only 17% of less successful teachers taught these strategies, despite strong evidence (Rosenshine & Meister, 1994; Rosenshine, Meister, & Chapman, 1996) for their importance in learning to comprehend text. She also found that effective middle and high school teachers were much more likely than less effective teachers to explicitly teach strategies for organizing thoughts and completing tasks. Torgesen et al. noted, “explicit instruction along with supported, scaffolded practice in the use of multiple comprehension strategies produce consistent improvements in students’ reading comprehension” (Torgesen et al, 2007b, p. 17). The Torgesen team made these recommendations about strategy instruction:

1. Initial discussions help students become aware of their own cognitive processes, learn about strategies and establish purposes for learning strategies.
2. Explicit instruction with frequent think-aloud demonstrations by the teacher help students understand why the strategy can be useful, how to do it, and when it is appropriate to use.
3. The essential steps include: (a) teacher modeling of strategy use; (b) opportunities for students to practice strategies in meaningful literacy activities; (c) small group activities that encourage student discussion of both the text's meaning and how they are using the strategy to help them understand; and (d) gradual transfer of responsibility for selecting and using strategies from the teacher to the students.
4. Implementation should also consider issues such as; (a) balancing content and strategy instruction; (b) limiting the number of strategies (more than one, but this will vary depending on teacher skill, student abilities, instructional group size, and the time available for instruction).

Torgesen et al. (2007b) also cautioned that a long-term commitment to professional development was required, as it takes time for teachers to become skilled in providing this type of instruction. For example, Brown, Pressley, Van Meter and Schuder (1996) found it took several years for teachers to become skilled at teaching students to use multiple comprehension strategies flexibly and adaptively.

Focus Two: Increasing Open, Sustained Discussion of Reading Content

Literacy may be considered a braid of oral and written text. Thus, recent studies have illuminated the legitimacy of discussion in content area classrooms. Meaningful discussion improves students' meta-cognitive awareness of strategies they can use on their own (Beck & McKeown, 2006). Further, high-quality discussion of reading content increases student engagement in reading (Guthrie & Humenick, 2004). Applebee, Langer, Nystrand, & Gamoran (2003) argued 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)

Key discussion strategies, such as Questioning the Author (Sandora, Beck & McKeown, 1999) and Anticipation Guides (Richardson, Morgan & Fleener, 2006), are ideal for content area learning, as they tap students' prior knowledge, set purposes for reading, and support all five areas of comprehension strategies (see above). However, Torgeseon et al. (2007b) caution that implementing more discussion in secondary classrooms may require system endorsement:

...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. (p. 39)

Thus, changes in adolescent literacy instruction involve many levels. They are pedagogical and political in nature, and require the collective will to reassess real world demands and raise the standards of literacy learning across all grades. This issue will be addressed next.

Focus Three: Setting and Maintaining High Standards for the Level of Text, Conversation, Questions, and Vocabulary Used in Discussions and Assignments

An important area of agreement in recent scholarship concerns the benefits of higher-level standards for all learners—including those who struggle as well as those who excel academically. In a study involving nine high-poverty schools, Taylor, Pearson, Peterson & Rodriguez (2003) found that higher-level questioning mattered. The more a teacher asked higher-level questions, the more growth the nine target students in her class experienced on a variety of measures. Applebee, Langer, Nystrand & Gamoran, (2003) in a study of 64 classrooms and 1,111 middle and high school students also found that higher-level questioning improved comprehension of higher and lower-achieving learners. Despite this, Taylor et al. (2003) found the actual rate of higher-level questioning among teachers was low. For example, in grades three to five, only about 25 percent of observed questions required higher-level thinking.

Ironically, some narrow-focused high stakes test—designed to hold school systems accountable for higher-level learning—may create a pressure that adversely affects academic rigor and deep learning. Langer (2001) discussed the implications of higher-level questioning and high stakes testing. She described two fundamentally different ways teachers approach test preparation:

...as separated activity, involving test practice and test-taking hints, [and as] 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... Teachers in the higher performing schools used the tests as an opportunity to revise and reformulate their literacy curriculum, [not as a separate activity, or an “additional hurdle”].

For teachers in higher performing schools 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)

In addition to the challenge of high stakes tests to higher-level questioning, another challenge to quality learning is peer pressure. Increasing rigor and academic demand—sometimes referred to as academic press—has been found to improve learning for all students. However, the quality of peer support may make the difference between those students who rise to the challenge and those that resist. Although negative peer pressure is sometimes attributed as the reason why students will not engage in academics, Lee and Smith (1999) found that the reverse is also true:

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. (p. 932-934)

Thus, the research not only confirms the value of higher-level thinking and learning and academic press for all learners; it points to two major challenges—high stakes testing and peer pressure—and suggests strategies to address them.

Focus Four: Increasing the Variety of Practices to Increase Motivation and Engagement with Reading

Motivation and engagement embody a fourth focus of academic literacy instruction (Torgesen et al., 2007b). They noted in their review that deep comprehension of complex text is effortful and cannot be accomplished without engagement. To this end, Guthrie and Humenick (2004) found four characteristics of engaging instruction: (a) interesting, real content learning goals; (b) a reasonable range of choice and autonomy; (c) hands-on learning experiences; (d) interesting and accessible texts; and (d) collaboration through discussions and assignments. The Guthrie team found that strategy instruction combined with Concept-Oriented Reading Instruction (which focused on rich, interesting content) was much more effective than strategy instruction alone.

Increasing Strategies That Lead to Greater Learning of Vocabulary and Essential Content Knowledge

In the highly standardized secondary curricula, where scope and sequence charts parse every detail and sequence all content, and high stakes tests attend to decontextualized knowledge and skills, essential learning may be lost in analysis. Therefore, teachers and students may have to spend time identifying the “big ideas” in the preparation stage of instruction, in order to maximize their chances of connecting new learning with students' prior experiences. Without these connections, learning may be

confined to surface levels, as schema theory teaches us that prior knowledge is the foundation for new learning (Anderson, 1994).

Torgesen et al. (2007a) noted that vocabulary learning is organic. In grades three through twelve, students are likely to learn at about 3,000 words per year if they read between a half million and a million words of text (Anderson & Nagy, 1992). Beck, McKeown and Kucan (2002) and others (see Graves, 2000; Johnson, 1999) found that strong vocabulary development is best supported through a combination of (a) wide reading; (b) direct teaching of individual, high-utility words; (c) instruction in how to learn words independently during reading; and (d) instruction and activities that increase word consciousness. In addition, in a study of middle school social studies students, Bulgren, Schumaker and Deshler (1994) found that “recall enhancement routines” (such as the use of images, acronyms, or key words to review the essential learnings) significantly improved recall on multiple-choice tests of students with and without learning disabilities.

Discipline-Specific Approaches to Academic Literacy

In addition to the generic strategies presented above, consideration must be made for ways that literacy differs across disciplines. Meltzer (2001) observed, “there are two types of content-based literacy instruction: (a) generic literacy strategies that can be applied in similar ways across the content areas, and (b) literacy strategies that differ greatly depending upon the particular subject” (p. 62). The disciplinary rigors of thinking like an historian, constructing a mathematical argument, and critiquing literature, for example, demand different literacy skills and strategies. Meltzer highlights literacy strategies that differ substantially across disciplines:

1. *vocabulary development*. For example, in math it may be advantageous to wait until learners have a firm understanding of the concept before ascribing a label to it, whereas in science, certain key terms may need to be defined and discussed in advance of the lesson.
2. *text structures*. For example, students need to become adept at “decoding” (p. 63) differences between genres such as screenplays, technical manuals, and journal abstracts.
3. *text features*. Students need to develop discipline-specific schema for features such as glossaries, points of view and hyperlinks, and learn how to demystify expository and narrative text structures.
4. *discourse features*. Students need to recognize and analyze discipline-specific discursive features, such as the way each discipline validates arguments and impose warrants based on particular rules of evidence, method, argument, and rhetorical style.

Heller and Greenleaf (2007) acknowledge that some reading skills and strategies are generic—such as pre-reading (reviewing, making predictions, identifying text features), during reading (drawing a visual representation of the unfolding argument, asking questions about the main idea, making note of unfamiliar vocabulary words), and

post-reading (summarizing, restating, comparing notes) activities. However, Heller and Greenleaf point to a growing body of evidence that suggests that not all literacy skills transfer from one discipline to another (Alvermann & Moore, 1991; Hynd, 1998; Moje, 2006). They note, for example, that students have to learn to distinguish surface features of discipline-specific texts, such as: vocabulary, style, arrangement of ideas, text format, sentence structure, grammar and punctuation, logical connectors (e.g., but, since, therefore), symbols, and integration of text and graphics.

Heller and Greenleaf argue that students need to read, write and talk about academic content, but note that the “vast majority of middle and high school students engage in very little sustained reading” (p. 16). They go on to report that these students do little reading from primary sources, are not exposed to teachers reading aloud to model fluent reading. Further, they engage in little discussion to build background knowledge or set purposes for reading. They note these barriers to discipline-specific literacy instruction: (a) teachers are under enormous pressure to cover content; (b) “content” isn’t often thought to include reading and writing; (c) State standards are silent on content-area reading & writing (outside of English/language arts); (d) teachers are understandably hesitant to take on roles and responsibilities; (e) teachers have “blind spots” when it comes to their own literacy; and (f) scarcity of high quality professional development.

Conclusion Section One: Academic Literacy Instruction

This section presented findings related to adolescent literacy strategies that can be implemented in the content areas. Content literacy instruction—as a means to strengthen academic and generic literacy—presents great potential and challenge. Numerous issues must be resolved for effective content-area literacy instruction to succeed. The responsibilities of content area teachers will need to be clear and consistent; for example, it should not be their job to teach basic literacy skills. Rather, through positive incentives, rigorous professional development, and concrete examples and support, content teachers should be made aware of their role in teaching the reading and writing skills essential to their own content area. Every academic discipline should define its own essential literacy skills, and all secondary school teachers should receive initial and ongoing professional development in literacy instruction related to their own content areas.

Section Two: Differentiation and Formative Assessment

Torgesen and Miller (2009) reviewed approaches to assessment related to academic literacy. One of the most potent was formative assessment, which they defined as “assessments *for* learning... as distinct from assessments *of* learning” (p. 3). Formative assessment is used almost exclusively at the classroom level. Unlike outcome measures used to communicate individual and program-level progress to various stakeholder groups, “there is little interest or sense in trying to aggregate formative assessment information beyond the specific classroom” (p. 20).

McMillan (2007) suggested (p. 4) that “true” formative assessment involved three essential criteria: (a) assessments embedded within instruction; (b) additional

instructional strategies; and (c) student engagement and learning. Abrams (2007) further explained that formative assessment does not simply ascertain a student's score; it should be used to "uncover the students' thought processes" (p. 20) used, for example, to answer multiple choice or narrative questions.

Stiggins (2007) provided an example of formative assessment in which students contrasted a strong paper with a weak one and constructed their own rubric for the assignment. Then they drafted papers and critiqued each others draft using the rubric, seeking teachers' guidance when they chose. He noted:

The most unique feature of the assessment for learning process is that it acknowledges the critical importance of the instructional decisions made by pupils and their teachers while working as a team—it provides the information they need when they need it. In this context, pupils become consumers of assessment information, too, using evidence of their own progress to understand what comes next for them. (p.17)

Wiliam, Lee, Harrison and Black (2004) found that the five most common formative assessment strategies teachers implemented in their classrooms were:

1. Rich questioning and discussion to discover student thinking and knowledge
2. Comment-only marking
3. Sharing scoring and grading criteria with students
4. Providing many opportunities for peer- and self-assessment
5. Group review of outcomes from tests

In the sometimes heated arena of adolescent literacy, there is a need to sort through the uses of assessment data at the various levels of school systems, and to examine the ways these data are appropriated or misappropriated from one level to another. For example, Wiliam et al. (2004) argue that all outcome data do not inform data-driven instructional decisions. They illuminate the problems with broadly applied assessments such as the NAEP. They note that academic literacy is embedded in content areas, yet NAEP assesses literacy as though it is a generalizable skill, not dependent on context¹.

Assessment and Differentiation

Given the great diversity in the rate of learning and level of literacy skills among adolescents, Torgesen and Miller (2009) argue that successful differentiation of instruction starts with accurate assessment of reading growth. While State, district and school-level educators need outcome data to determine which programs are most

¹ Wiliam et al. (2004) further argue that NAEP is concerned with comprehension; it does not measure component level reading skill gains and is "insensitive to the instructional needs of many struggling readers who continue to have difficulties with word-level skills in middle and high school" (p. 9).

successful in helping all students succeed, teachers and students need ongoing formative data to inform differentiation:

Ongoing, classroom-based formative assessment is the most relevant to guiding and improving classroom-level instruction. Improved use of this type of assessment may be the most cost-effective way to improve student learning performance in middle and high school (Black & Wiliam, 1998; Fuchs & Fuchs, 1986). Classroom-based formative assessment is tailored to each student's reading proficiency: It is quite different for students in a content-area classroom working on grade-level reading comprehension standards than it is for struggling readers in intervention classrooms working on a broader range of reading skills. (p. 14)

Although district or school-level benchmark tests and classroom-based formative assessments provide information that can aid instructional decisions, Stiggins (2007, p. 15) notes that "teachers and pupils will use continuous day-to-day formative classroom assessments in ways that differ fundamentally from how policy makers and instructional support personnel use their periodic assessments."

Differentiation is supported by other forms of assessment as well. For example, at the placement level, Torgesen and Miller (2009) advocate for a comprehensive assessment plan that contains screening assessments to triage (differentiate) between two groups of struggling readers:

Although adolescent struggling readers are very diverse (Buly & Valencia, 2002; Hock, Brasseur, Deshler, Catts, Marques, et al., in press),...it may be useful to think of them as falling into two groups. One group has primary instructional needs in reading comprehension and cannot meet grade-level standards on the end-of-year accountability measure, primarily because of weak vocabulary and comprehension skills. These students can read grade-level text with reasonable fluency and accuracy (not too far below average) but may not be skilled in using reading comprehension strategies or in performing certain kinds of inferential reasoning processes, or they may lack specific vocabulary required for understanding grade-level text.

The second, usually smaller, group contains students with severe and pervasive reading difficulties. Their challenges extend to basic problems with reading accuracy (usually caused by weak phonics/word analysis skills); they are almost always dysfluent readers and frequently have all of the other more complex reading problems involving weaknesses in content knowledge, thinking/reasoning skills, reading strategies, and vocabulary. Of course, there will be substantial variability in the instructional needs of students in each of these groups. However, for purposes of initial assignment to either very intensive interventions encompassing both word-level and comprehension instruction or less intensive interventions focusing primarily on vocabulary and comprehension skills, this two-group division is a good place to start. (p. 15)

Assessment and Performance on SOLs

Torgesen and Miller (2009) suggest that the curriculum needs to be better aligned with State standards, and that teachers should “systematically unpack them in order to identify the most important targets for instruction” (p. 27). (For example, Ainsworth and Viegut (2006) reported that middle school math teachers had covered the discrete content of the SOLs, but upon close examination of the assessment items, realized that the tests required a synthesis of numerous concepts rather than concepts in isolation.) Once the SOL knowledge and skills are integrated with instruction, formative assessment is used to inform what needs to be learned and how learning is taking place.

Implementing Formative Assessment Strategies

Ultimately, formative assessments may help meet the outcome-based needs of the school district as well as the differentiated learning needs of students. But, just as administrators may need to accept new curriculum-embedded approaches to test preparation (as opposed to an over-reliance on decontextualized test-review sessions that cut into curricular time), so teachers may have to buy in to SOLs as valuable instructional goals. And content teachers will need to endorse State standards for literacy as well. Like the implementation of cognitive strategies, Torgesen and Miller (2009) identify three implementation challenges educators must address in order for formative assessments to have their full effect on differentiating instruction and improving student outcomes:

1. The need for fundamental change in attitudes and instructional practices
2. The need to resolve tensions between teachers and administrators about the types of formative assessments each prefer
3. The need to change educators’ attitudes and beliefs about indicators of student success

The Torgesen team argued that teachers need concrete, living examples of formative assessments, such as assessment exemplars, specific discussion questions, think aloud strategies, text sets, and student-constructed rubrics. Stiggins (2007) has suggested, “Changing schools from places that merely sort pupils based on achievement into places that assure that all pupils will meet standards brings with it the challenge of rethinking the dynamics of assessment” (p. 11).

Conclusion Section Two: Formative Assessment and Differentiation in Adolescent Literacy Classrooms

Torgesen et al. (2009) summarized the following findings about formative assessment and differentiation, as they related to adolescent literacy instruction:

Classroom-based formative assessments take a variety of forms. They are defined by their purpose, not form, and often involve short-cycle, frequent assessments that motivate students by helping them monitor their learning and progress toward shared

goals. These are not characteristics of most current assessments. Effective formative assessments in the classroom can be administered through a variety of activities:

1. *Rich performance tasks.* Tasks that work toward goals, are open to varied displays of evidence, and maximize opportunities for students to think through and develop their ideas as an aid to understanding and writing.
2. *Classroom and peer-to-peer discussions.* Classroom discussions that determine the level of student understanding, while at the same time deepen it. A good interpretive discussion of text is an excellent vehicle to uncover the “thought process, logic, and understandings students use to arrive at selected answers or narrative responses” (Abrams, 2007, p. 91).
3. *Questioning.* Improved quality of questions that teachers ask to directly assess student understanding; or, higher-level questioning activities that students engage in to reveal their understanding.
4. *Classroom tests and quizzes.* Scoring extended responses using rubrics developed in consultation with students. These assessments involve students in the formative assessment process, provide a clear vision of the learning target, and facilitate self- and peer-assessment.

Classroom-based formative assessments have clear, well-defined targets. In standards-based instruction, the targets of formative assessment for students working at grade level should be closely aligned to the State grade-level standards. As Stiggins (2007) points out:

Target definitions begin with State standards. While the learning is unfolding, pupils progress through the levels of proficiency that lead up to each standard. To make this possible, each standard must be deconstructed into a scaffolding that pupils must climb on their journey up to that standard. These continuously unfolding classroom targets (foundations of ultimate competence), then, become the focus of day-to-day formative assessments. For this deconstruction to be accomplished, each teacher must be a confident competent master of the standards his or her pupils are expected to master. (pp. 15-16)

The value of aligning formative assessments with State level standards applies primarily to students whose reading skills are reasonably close to grade-level standards. Other students, such as those receiving intensive intervention because of difficulties with basic reading skills, may have immediate instructional goals and assessment targets for a broader range of reading skills (e.g., reading accuracy and fluency) and for comprehension standards that are closer to their actual level of performance than the grade-level standards.

Classroom-based formative assessments provide enough detail about student understanding, knowledge, and skill to suggest next instructional steps. Some sense of the learning progression required for attaining grade-level standards must underlie effective classroom-based formative assessments. However, State literacy standards often point to specific competencies within comprehension for which there is a less well

developed “theory of the task” to guide formative assessment. For example, we have little theoretical research on the component skills required to meet such standards as being able to describe the relationship between theme, setting, and character, or the ability to judge the logic, coherence, and credibility of an argument, and almost no instructional research focused on such specific standards.

Broad instructional recommendations for improving adolescent literacy (Biancarosa & Snow, 2006; Torgesen, Houston, Rissman, et al., 2007b) focus on general methods to improve word-level reading skills or reading comprehension, and do not address steps to achieve more specific state- or national-level literacy standards. It remains an empirical question whether specific “learning progressions” need to be developed for each end-of-year literacy standard or whether a more general approach to teaching reading comprehension (such as focusing on the ability to identify the main idea and supporting details, or the ability to make inferences) will suffice for helping students meet the most essential standards.

Effective formative assessments are followed by appropriate types of feedback and instructional adjustments. A recent review of formative feedback by Valerie Shute (2007) produced a set of 31 guidelines for providing effective feedback that take into account learner characteristics and the timing of the feedback. Further, classroom-based formative assessments involve students in self-reflection and peer-evaluations and feedback.

Section Three: Adolescents Who Struggle with Reading

While the first two sections of this review have presented findings that apply to adolescent readers in general, this section addresses findings pertaining to struggling adolescent readers. These findings are organized in four areas: (a) struggling readers with basic word-level skills, (b) English language learners, (c) struggling readers who lack basic word-level skills, and (d) response to intervention.

Struggling Readers with Basic or above Word-level Skills

Scammacca, Roberts, Vaughn, Edmonds, Wexler, Reutebuch & Torgesen (2007) conducted a meta analysis of interventions for struggling adolescent readers. They concluded that adolescence is not too late for intervention. But they argued it was essential to know the struggling student’s needs at the component level (e.g., word recognition, vocabulary, comprehension strategies) especially, if their most immediate need for intervention was at the word or the text level.

Torgesen et al. (2007b) also found that triaging the needs of adolescent struggling readers was important. For struggling adolescent readers with fundamentally sound decoding and sight reading abilities, pull out interventions for higher-level word study may not be the best focus for instruction. Torgesen et al. noted:

...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. (p. 79)

Thus the intensive reading needs of these struggling readers (with basic or above word-level skills) may be best met through academic literacy instruction (see Section Two above) and more intensive instruction grounded in content-learning². But practitioners and the public need to develop a more sophisticated understanding of reading assessment and reading development. For example, even for struggling readers with relatively strong word-level skills, interventions at the reading component level (such as vocabulary and fluency) may not directly translate to outcome gains as measured by tests of comprehension. Scammacca et al. (2007) found that for these struggling readers, repeated readings had little effect on improving fluency (reading rate) and that vocabulary intervention had the greatest effect sizes. However, these vocabulary studies were limited to immediate gains on vocabulary tests. No direct improvements from short-term vocabulary instruction have, to date, resulted in direct gains on comprehension test scores. They further cautioned that even for those struggling readers with relatively strong word-level skills, gains in reading comprehension come slowly and require persistence:

Consistent with research findings at the primary grade level, intervention for older struggling readers is most effective when it is provided as early as possible. If limited funding is available, focusing intervention at the middle grade level may be the best investment. However, older students do respond to intervention and all students who are struggling in reading should receive intervention. (p.16)

Indeed, adolescent readers with at least basic word-level ability can increase reading gains by a full standard deviation when comprehension strategies are taught explicitly and integrated with content area instruction (Scammacca et al., 2007). The Scammacca team found that, for these gains to be realized, comprehension strategies needed to be taught across all disciplines, and content teachers needed professional development to learn how to implement them effectively. The team also found that effective vocabulary instruction improved these students' knowledge of word meanings and concepts through, (a) direct vocabulary instruction (especially content vocabulary); (b) direct instruction of morphology; and (c) increased independent reading.

Torgesen et al. (2007b) compared a traditional approach to vocabulary acquisition—looking up definitions and writing sentences—with an explicit strategy—

² This does not mean, however, that all reading instruction for these learners can be delivered by the content teacher. See the Response to Intervention section for further discussion.)

semantic feature analysis—to see which enabled deeper learning of vocabulary and conceptual knowledge for struggling readers. 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 structure for students to actively process new concepts and vocabulary by making connections to what they already knew. This condition also required greater mental effort. 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. The Torgesen team also found that the following content-area strategies were effective for struggling readers: reciprocal teaching, peer-assisted learning, and explicit higher-level questioning.

Despite the promise of these preliminary findings, it is likely that all of the needs of these struggling readers will not be met by content area teachers just because they possess basic or above word-level skills. (See Response to Interventions below, for further discussion of a continuum of interventions.) Nevertheless Torgesen et al. (2007b) suggest that the role of content teachers in assisting struggling readers' comprehension and engagement is critical:

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. (p. 89)

For struggling readers who were not severely deficient, but unable to perform some literacy tasks in content instruction areas, Torgesen et al. (2007b) suggested these resources might be required to support fluency and vocabulary learning.

1. Homogeneous groupings to provide targeted reading skill support
2. Class periods of 60 - 90 minutes in addition to content classes
3. Providing students with readable texts
4. Provide explicit instruction in fluency and [comprehension] strategies
5. Sustain engaged reading time at 40–60 minutes daily

Further, regarding professional development costs, Torgesen et al. (2007b) made the following recommendations:

1. Instruction should be provided by a highly qualified teacher.

2. For adolescents at the initial stages of reading, intensive interventions directed toward meeting their needs in alphabets must be developed by teachers trained specifically in those methods.
3. Hire a literacy coach
4. 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.
5. Plan for ongoing professional development
6. 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

English Language Learners

It is important to note that we should not consider English language learners as having special learning needs in the same way learners with disabilities have. Indeed, these learners bring a wealth of cultural and linguistic knowledge to the classroom (Gonzalez, Moll & Amanti, 2005). However, many of these learners face substantial challenges as they strive to not fall behind their English speaking peers while they learn English and receive instruction in English concurrently. Torgesen et al. (2007b) found the following strategies were effective in developing literacy skills among adolescent English language learners:

1. Understanding ELL's learning histories and the funds that they bring with them to class, including "age of arrival, educational history, native language ability and literacy, placement and instructional context in U.S. schools, and their sociocultural background" (p. 92).
2. Incorporating systematic and explicit vocabulary and comprehension instruction in all content areas that address ELLs' diverse linguistic, cultural and educational backgrounds
3. Viewing students' native languages as learning resources:
...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 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. (p. 92)
4. Differentiating instruction based on assessment:
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. (p. 93)

5. Including reading support through content-based instruction:
...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. (p. 94)
6. Adapting sheltered instruction models:
Teachers identify two objectives for each lesson: one for content learning and another for language and literacy learning...Both objectives are explicitly stated...and teachers address both *content through language* [e.g., building background knowledge through discussion] and *language through content* [e.g., explicit content vocabulary instruction].
7. Distinguishing between and addressing breadth and depth of vocabulary
8. Distinguishing between teaching new (English) labels for concepts already known, and new labels for new content:
Word-learning strategies include: using contextual cues to determine a word's meaning; having knowledge about morphology or particular word parts; using aids such as dictionaries and glossaries; and drawing on cognate knowledge. (pp. 93-94)

Readers should note that this review did not specifically target ELLs, and these findings are in no way comprehensive or representative of the range of scholarship in this area. For example, the recommendations of Johannessen and McCann (2009) in Section Four of this review add important social-cultural perspectives to the limited findings above.

Struggling Readers Who Lack Basic Word-Level Skills

As noted above, best practices for struggling adolescent readers include a way for triaging them into two groups—those with and without basic word-level skills such as decoding, word recognition, and reading rate. In this part of the review, those struggling readers who have more substantial needs and are likely performing considerably below grade level are considered. After reviewing general findings here, system approaches to these learners through RTI are presented.

Scammacca, Roberts, Vaughn, Edmonds, Wexler, Reutebuch & Torgesen (2007) found that word-study interventions (e.g., alphabetic, phonemic awareness, syllabication, affixes) were appropriate for older students struggling at the word level. They considered this intervention “necessary but not sufficient” and caution that it may not lead directly to gains in comprehension.

Torgesen et al. (2007b) had these suggestions for intensive instruction for students who are significantly behind:

1. Engage them in ideas that matter
2. For learners at the initial stages of reading, the focus of literacy instruction should be on improving alphabets, 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.
3. 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.
4. Controlled texts in an environment that provides constant corrective feedback should be scheduled separately from the regular school coursework and should occur daily. Texts need to be controlled so that the struggling reader can focus on a manageable subset of the types of decoding errors (s)he...makes and get the needed practice to unlearn the bad habit of guessing.
5. Strategic tutoring for the very low-readers requires an 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.
6. Differentiated instruction for struggling readers is embodied in the particular questions asked and strategic reading models provided. It is important to create a “minds-on” classroom where students can become cognitively engaged in the activities.

Response to Intervention

Duffy (2007) reviewed the status of RTI in secondary education. She explained how RTI, a process that provides a tiered way to identify individual learning needs of children, is an alternative to the aptitude-achievement discrepancy method of identifying special needs:

When identifying students with learning disabilities (LD), the Individuals with Disabilities Education Improvement Act, 2004 (IDEA 2004) allows educators to use a process, such as RTI, that is based on a child's response to scientific, research-based interventions. IDEA 2004 allows educators to use an approach such as RTI instead of, or in addition to, the IQ-achievement discrepancy approach. (p. 1)

RTI is consistent with formative assessment approaches described above. Typically, RTI involves a three-tiered approach:

1. The first level of intervention begins with evidence-based instruction, progress monitoring and support that is provided to all students. When students begin to falter academically, they receive more specialized prevention or remediation within the general education setting.
2. In the second tier, students who have not been successful in tier one receive targeted interventions, and progress is monitored frequently to determine the intervention's effectiveness. At this stage, general education teachers typically receive support as needed from other educators in implementing interventions and monitoring student progress.
3. In tier three, with parental consent, a comprehensive evaluation may be conducted by a team to determine eligibility for special education. (p.3)

Duffy adds that,

The regular monitoring of the student's response to instruction is particularly important as a means to determine if a student should move from one stage of support to the next. Typically, those students at risk of not meeting end-of-year goals are identified for frequent progress monitoring and remedial instruction. If students in tier three make significant progress, they can move back to tier two and receive less intensive instructional interventions. (p. 3)

There are two common approaches to RTI: (1) standard treatment and (2) problem solving. Standard treatment follows a fixed sequence of interventions, where as the problem solving approach involves more in-depth assessment and more flexible options for intervention. But both approaches involve iterative cycles of assessment, problem identification, intervention, and follow up assessment.

Duffy described an example:

Students from the Long Beach unified School District in California, who enter high school a half year to two years behind (based on eighth grade end of year testing) receive the core literacy instructional program as well as an additional literacy workshop course that provides them with support materials that scaffold the core literacy program. Entering high school students who are more than two years below grade level are enrolled in a double block of language arts that consists of an intensive English language arts program or an after-school reading program. For their language arts curriculum, Long Beach has adopted the *Language!* and Lindamood-Bell curricula for intensive instructional programs in literacy. Lindamood-Bell focuses on developing phonemic skills for students having serious difficulties with text. Typically, students spend a semester in that intensive intervention and then transition into *Language!* Student progress is monitored throughout the school year using "cluster tests" taken primarily from the Lindamood-Bell and *Language!* curricula. In addition to the systematic supports for students, the Long Beach model includes monthly support meetings for teachers, summer institutes, and coaches that provide professional learning opportunities for teachers.

...An important aspect of the Long Beach system, according to Office of Special Education Assistant Superintendent Judy Elliott, is that they do not base their decisions on a single data point. Multiple sources of data are examined to determine student needs. Long Beach views its practice as a systems approach to good instruction for all students rather than just a process to diagnose students with learning disabilities. They had such success with the practice at the high school level that they have recently applied it to their middle schools. Roughly 7 percent of students in Long Beach have IEPs as opposed to an average of 12–14 percent nationally (Duffy, 2007, p. 6).

Duffy identifies eight issues related to RTI in secondary schools:

1. Identify screening and progress monitoring tools for high school level students across subject areas...RTI will require that high schools identify multiple, universally administered, standardized, reliable and valid measures that can help identify students who are not keeping pace with their peers across a number of subject areas. Student progress must be carefully monitored over time, using measures that are tied to local curricular and State content and achievement standards...Measures need to be sensitive enough to pick up benchmarks that will lead to the ultimate instructional target within each content area. These measures need to help educators determine whether a student's difficulties are related to instruction, language, or cognitive abilities at this developmental level.
2. Identify high school appropriate intervention models that work across subjects. Because students are assessed on their mastery of grade-level content, instruction must therefore address grade-level content. Fidelity of intervention also must be addressed, as the interventions are being developed and tested for their effectiveness. We must determine how interventions will be monitored for consistency and integrity. High schools can work to build capacity for multi-tiered reading instruction using RTI to benefit struggling adolescent readers. Drs. Don Deshler and Jean Schumaker have conducted seminal research on multi-tiered reading instruction designed to reach older students using the Strategies Intervention Model developed at the University of Kansas. However, schools and districts need to determine the intervention models that will best meet the needs of the students they serve.
3. Consider implementation issues unique to high schools, related to program structure, how students will move through the process (with careful attention to the urgency for identifying real learning disabilities and the problem of inappropriate identification, particularly of English learners), sequencing of activities within tiers, timelines, balancing flexibility with consistency and cut scores for moving between tiers that will work best in a particular high school. It is also important to consider the importance of incorporating culturally

responsive principles when considering the appropriate intervention for students from diverse backgrounds.

4. Examine the changing roles for general and special education teachers because RTI focuses attention on the connections between instructional interventions and student achievement, the roles and responsibilities of teachers will continue to need examination. No longer will students receiving supplemental services for special education be isolated in self-contained special education classrooms. General education teachers may need to be trained in techniques that support more targeted instruction.
5. Determine universal instruction across content areas high schools need to determine what constitutes high-quality, universal instruction across content areas. In addition, high school teachers need professional development in, for example, differentiated instructional techniques that will help ensure student access to instructional interventions that are effectively implemented.
6. Ensure structural supports for professional collaboration because RTI models require a great deal of collaboration and coherence, high schools present a unique challenge because of their departmental structures. Teams of educators need opportunities to meet to review student progress and discuss intervention strategies across departments.
7. Ensure ongoing professional development because high-quality instruction is key to the RTI model (students should not be identified for tier two services because of ineffective instruction in tier one), staff development is critical to the model's success. Professional development should include introductions to RTI, assessment processes, intervention strategies, effective teaching strategies, best practices for monitoring student progress, interpreting a range of assessment data and using the data to inform instructional interventions.
8. Expand parent communication effective parent communications are another key to the successful use of RTI. High schools using RTI should consider refining parent outreach that goes beyond what is required to include community-building awareness and support of RTI.

Conclusion Section Three: Adolescents Who Struggle with Reading

Adolescents who struggle with reading require differentiated instruction to meet their varied needs. Assessment is the key to differentiation, and two approaches to assessment were reviewed here: First, triage-level screening is required to differentiate between struggling readers with and without basic word-level skills. Learners who do not require basic word-level instruction may benefit most from content-based (contextualized) support for comprehension and vocabulary instruction, whether this support is provided by content teachers, specialists, or both. Those learners who lack basic word-level skills will require intensive instruction provided by specialists, and this

support may require system level solutions such as RTI. Both types of struggling readers, as with students reading on-grade level and above, will benefit from differentiated instruction based on formative assessments. They will also benefit from assessments that are aligned with SOLs, and curricula that “unpack” the SOL tasks and integrate them in meaningful content-area teaching and learning.

Section Four: Social-Cultural Perspectives

Engagement and motivation have been addressed in other sections of this review. However, in this last section, we take up these issues again, from a particular, social-cultural perspective that considers literacy as a practice rather than a set of skills. In and through their in-school and out-of-school literacy practices, adolescents work out issues of vital importance to themselves, such as identity and belonging. By understanding these practices educators may be better positioned to understand the power and potential of literacy to motivate and engage learners in content reading and learning.

Christenbury, Bomer & Smagorinsky (2009) argue for a contextual approach to adolescent literacy research that attends to the way learners are socialized into literacies. Again, this social-cultural approach to research views literacy as situated *practices* that mediate learning, both academic and social. And, conversely, academic and social discourses determine the kinds of literacies we practice.

The social-cultural line of inquiry is important because it is uniquely equipped to help us understand cultures—such as the culture of schools, of immigrant families, of boys, of girls. This approach opens up fresh approaches to engagement by helping us uncover hidden ways our curricula are received by our students (Burroughs & Smagorinski, 2009) and ways that out-of-school literacy practices align with content literacy. For example, Langer (2009) argued for the relevance of out-of-school “literate thinking.” She noted,

Literacy can be thought of as the ability to think like a literate person, to call upon the kinds of reasoning abilities people generally use when they read and write...even when reading and writing are not involved, such as watching a TV program or sports event. (p. 51)

Among other things, social-cultural research advocates support for; (a) communities of practice, (b) identity formation through contextualizing learning, and (c) culturally responsive learning. In this selective review of social-cultural approaches to adolescent literacy, these three insights are presented.

Support Adolescent Literacy Learning by Nurturing Communities of Practice

In her *Beating the Odds* research project involving 25 schools over a 5-year period, Langer (2009) found that more effective schools provided safe spaces for diverse adolescents to be successful. In this spirit, literate thinking “assumes individual, cultural, and group differences, and leaves room for teachers to invite students to use what they

understand and have experienced as a starting point” (p. 51). Langer argues that “Literacy grows from the social environments in which the participants are regularly a part.” In a similar vein, Majors, Kim & Ansari (2009) reported findings from a case study of an African American hair salon in which literate thinking—such as meta-awareness of one’s prejudices, and understanding of others’ points of view—evolved through the socialization of learners within a particular culture of “shop talk” (p. 349).

To this end, Johannessen and McCann (2009) argue that solutions to literacy learning are not found exclusively through pedagogy, but also through relationships among students and between students and teachers. In order to nurture respectful relationships with English language learners, educators should:

1. emphasize (at first) fluency rather than accuracy in oral and written language;
2. be patient and expect learning to occur over the long-term;
3. familiarize ELLs with classroom technical language (e.g., brainstorming, assignment);
4. tap the ELLs cultural interests and funds of knowledge;
5. in composition, build extended peer interactions that allows them to hear and practice academic discourses;
6. provide feedback that encourages positive efforts and avoids embarrassment; and
7. reassure and encourage students to ask for help (p. 75-76)

In classroom-based communities of practices, students are apprenticed into new, disciplinary cultures, in which teachers model literacy strategies through think alouds and other explicit demonstrations of comprehension strategies. Burroughs and Smagorinski (2009) describe a text-based problem solving method in which the teacher explicitly models word-level and higher-level cognitive strategies and thinks aloud about text structures such as signal words. Further, the teacher invites conversations with students about boring parts of the text, strategically guides them toward making sense of the text, and reinforces their stamina, shared curiosity, and sense of legitimacy within the community.

Support Adolescents’ Identity Formation Work by Contextualizing Learning

Majors et al. (2009) argued that literacy practices are related to identity formation. “Who people are, who they are allowed to be, is shaped in part by the ways they use literacy” (p. 347). For example, Johannessen and McCann (2009) found that adolescent girls who struggled with literacy had a difficult time relating to female characters in the novels they read for class. They suggested that these students would benefit from “learning-centered” instruction, in which students could prepare for readings by engaging in social activities such as role playing and quick writes that support identity work through “big ideas” that, for example, expose differences between pop and canonical characters, raise awareness of social justice issues hidden in texts, and help students tap into their own outside of school experiences.

In another identity-related issue, O'Brien, Stewart & Beach (2009) warned that narrow classifications of learners—such as the NAEP categories of below basic, proficient, etc.—create false and sometimes destructive dichotomies. In fact, depending on context and content, some struggling readers may be more proficient than advanced readers. While acknowledging the importance of NAEP as a starting point, they argue that narrow, decontextualized, high stakes tests risk narrowing the curriculum, and press for more authentic reading situations, “where [students’] interest, motivation and background knowledge can be systematically varied so that a students’ full range of reading ability can be assessed” (p. 84).

Means and Knapp (1991) also warned of ways that de-contextualized methods (that are not connected in meaningful ways to the worlds of students) can perpetuate negative self-images and identities, especially among struggling readers. They found that these approaches, “1. underestimate what students are capable of doing; 2. postpone more challenging and interesting work for too long—in many cases, forever; 3. and deprive students of a meaningful or motivating context for learning” (p. 283-284). On a more positive note, Burroughs & Smagorinski (2009) described an apprenticeship model that resists and challenges “fixed negative identity” (p. 101) and helped students interpret school experiences in ways that nurtured “resilient literacy identities” (p. 104).

However, we must proceed cautiously when discussing issues of identity and belonging with our students. Guzzetti (2009) described how adolescent girls needed relevant curricula and safe spaces to explore issues such as eating disorders and rape, but warned that we must be careful not to invade their privacy or destabilize the status quo. She suggested asking the girls for “appealing ways to bring aspects of their hidden literacies into the classroom” (p. 380). Similarly, Smith and Wilhelm (2009) found that engaging African American boys in questioning the way masculinity is portrayed in literature can help them become more critically aware of gendered roles related to relationships, fathering etc. But they cautioned that “these capacities were unstable and sometimes disconcerting to the boys” (p. 368).

Support Culturally Responsive Learning by Understanding the Potential of Non-Academic Languages and Literacies

Cooks and Ball (2009) argued that achievement gaps between African American and Caucasian learners will not close until African American Vernacular English (AAVE) is no longer treated as substandard and in need of “reform” (p. 142), but rather as a resource for learning other languages, such as Standard American English (SAE). Further, teachers should be encouraged to:

1. know the difference between mistakes in reading and differences in pronunciation;
2. help students make explicit the differences between SAE and AAVE;
3. allow dialect reading at first, and then SAE reading;
4. help students become “ethnographers” of their own language (p. 146).

Lastly, Cooks and Ball suggest that the voices of teachers from diverse backgrounds be enlisted to help construct assessment tools.

Rhodes and Robnolt (2009) argued that adolescents' out-of-school digital literacies are hybrid practices that involve such skills as locating and synthesizing information and negotiating media to make meaning in images, words and sounds, and information. They noted that digital literacies were the "21st Century Literacy" (p. 157), and that educators should find ways to teach comprehension strategies such as directed reading and teaching activities, critical thinking skills, questioning the author, self-monitoring, and semantic mapping through digital media.

Burroughs & Smagorinski (2009) raised questions like 'whose canon counts?' They warned of a "null curriculum" (p. 178) that silenced the voices of students by being irrelevant. Similarly, Martínez-Roldán and Fránquiz (2009) argued that educators should resist in-school/out-of-school binaries by bridging academic learning with popular culture (e.g., zines, tattooing, graffiti). They described how local literacies—such as family histories, fathers' work-related texts, and social justice projects—can generate literacy learning among youth.

Finally, Fu and Graff (2009) discussed the cultural resources and needs of immigrant learners. They note how immigrant strengths were:

often overshadowed by deficit models of thought: their bilingual and biliterate capacities, resilience, hardworking spirit, and passionate commitment to succeed in unfamiliar cultural landscapes [were also overlooked]... And how new immigrant youth... are often caught in the crossroads of physical, mental, emotional and cultural transformations as they traverse periods of disconnection, uncertainty, hope and resilience. (p. 400)

Fu and Graff urged teachers to become part of the immigrant community in order to learn how to avoid cultural stereotypes, communicate positively with learners and their families, and find ways to bridge their out-of-school experiences and funds of knowledge with content area learning.

In summary, social-cultural approaches to adolescent literacy highlight the literacy practices of youth. By doing so we become more aware of the realities of their worlds, the often substantial and serious challenges they work through, and the literacy skills and strategies they use to make meaning of themselves and their worlds. Although social-cultural views illuminate the great potential and power of these outside funds, educators must proceed respectfully and slowly when attempting to construct bridges to them.

Conclusion

In this selective review of the literature on research about adolescent literacy five best practice areas were reviewed: (a) explicit vocabulary instruction; (b) direct and

explicit comprehension strategy instruction; (c) extended discussion of text meaning and interpretation; (d) student motivation and engagement; (e) intensive and individualized interventions for struggling readers, provided by trained specialists.

In this report the first four best practices were reviewed primarily in Section One's review of studies of academic literacy. Section One focused on interventions that were suitable for all educators, including content-area teachers. Throughout these studies, the role of content instruction is cited as a powerful resource; however, researchers consistently warned that the recruitment of content-teachers must be done carefully, within well prescribed limits of responsibility and extensive professional development support. Sections Two addressed differentiated instruction and formative assessment, and Section Three, struggling readers. These two sections covered studies related to best practice 'e' (intensive and individualized interventions). Section Four addressed some social-cultural approaches to motivation and engagement, that referenced best practices related to area 'c' (discussions) and, of course, 'd' (motivation and engagement).

Readers are cautioned that this review is not exhaustive, as the fields of adolescent literacy research are rich, extensive and complex. Studies with even the strongest levels of evidence were based on limited numbers of studies. Thus, findings here should not be considered definitive, but rather as reasonably educated starting points from which policy and instructional conversations, and further inquiry, should commence.

References

- Abrams, L. M. (2007). Implications of high stakes testing for the use of formative classroom assessments. In J. H. McMillan (Ed.), *Formative classroom assessment: Theory into practice*. (pp. 79–98). New York: Teachers College Press.
- Ainsworth, L., & Viegut, D. (2006). *Common formative assessments: How to connect standards-based instruction and assessment*. Thousand Oaks, CA: Corwin Press.
- Alvermann, D. & Moore, M. (1991). Secondary school reading. In R. Barr, M/ L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research, Vol II*, pp. 951-983. New York: Longman.
- Anderson, R. C. (1994). Role of reader's schema in comprehension, learning, and memory. In R. B. Ruddell, M. R. Ruddell & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 469-482). Newark: International Reading Association.
- Anderson, R. C., & Nagy, W. E. (1992). The vocabulary conundrum. *American Educator, 16*, 14–18, 44–47.
- 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.
- 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.
- Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York: Guilford.
- Biancarosa, G., & Snow, C. (2006). *Reading next: A vision for action and research in middle and high school literacy: A report to the Carnegie Corporation of New York (2nd ed.)*. Washington, DC: Alliance for Excellent Education.
- Boardman, A. G., Roberts, G., Vaughn, S., Wexler, J., Murray, C. S., & Kosanovich, M. (2008). *Effective instruction for adolescent struggling readers: A practice brief*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Brown, R., Pressley, M., Van Meter, P., & Schuder, T. (1996). A quasi-experimental validation of transactional strategies instruction with low-achieving second grade readers. *Journal of Educational Psychology, 88*, 18–37.
- 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.
- Buly, M. R., & Valencia, S. W. (2002). Below the bar: Profiles of students who fail state reading assessments. *Educational Evaluation and Policy Analysis, 24* (3), 219–239.
- Burroughs, R. & Smagorinsky, P. (2009). The secondary English curriculum and adolescent literacy. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 170-182.

- Center on Instruction. (2007) *Adolescent literacy resources: An annotated bibliography*. RMC Research Corporation, Portsmouth, NH: Author.
- Christenbury, L., Bomer, R. & Smagorinsky, P. (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press.
- Cooks, J. & Ball, A. F. (2009). Research on the literacies of AAVE-speaking adolescents. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 140-152.
- Duffy, H., (2007). *Meeting the needs of significantly struggling learners in high school: A look at approaches to tiered intervention*. National High School Center. Retrieved on March 1, 2009 from: <http://www.pathwaystocollege.net/PCNLibrary/ViewBiblio.aspx?aid=2807>
- Fu, D. & Graff, J. (2009). The literacies of new immigrant youth. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 400-414.
- Fuchs, L. S., & Fuchs, D. (1986). Effects of systematic formative evaluation: A meta-analysis. *Exceptional Children*, 53, 199–208.
- Gajria, M., Jitendra, A., Sood, S., & Sacks, G. (2007). Improving comprehension of expository text in students with LD: A research synthesis. *Journal of Learning Disabilities*, 40, 210-225.
- Gonzalez, N. E., Moll, L., & Amanti, C. (2005). *Funds of knowledge: Theorizing practices in households and classrooms*. Mahwah, NJ: Erlbaum.
- Graves, M. F. (2000). A vocabulary program to complement and bolster a middlegrade comprehension program. In B. M. Taylor, M. F. Graves, & P. van den Broek (Eds.), *Reading for meaning: Fostering comprehension in the middle grades* (pp. 116–135). New York: Teachers College Press; Newark, DE: International Reading Association.
- Guthrie, J. T., & Humenick, N. M. (2004). Motivating students to read: Evidence for classroom practices that increase reading motivation and achievement. In P. McCardle & V. Chhabra (Eds.), *The voice of evidence in reading research* (pp. 213–234). Baltimore: Brookes.
- Guzzetti, B., J. (2009). Lessons on literacy learning and teaching: Listening to adolescent girls. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 372-386.
- Haynes, M. (2007). *From state policy to classroom practice: Improving literacy instruction for all students*. Alexandria VA: National Association of State Boards of Education.
- Haynes, M., Dickson, S., Lee, P. & Kysilko, D. (2006). *Reading at risk. The report of the NASBE study group on middle and high school literacy. Revised edition. July 2006* Alexandria VA: National Association of State Boards of Education.
- Heller, R., & Greenleaf, C. L. (2007). *Literacy instruction in the content areas: Getting to the core of middle and high school improvement*. Washington, DC: Alliance for Excellent Education.
- Hock, M. F., Brasseur, I. F., Deshler, D. D., Catts, H. W., Marques, J., Mark, C. A., & Wu Stribling, J. (in press). What is the nature of struggling adolescent readers in urban high schools? *Learning Disability Quarterly*.
- Hynd, C. (1998). *Learning from text across conceptual domains*. Mahwah, NJ.

- Johannessen, L. R. & McCann, T. M. (2009). Adolescents who struggle with literacy. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 65-79.
- Johnson, B. H. (1999). *Wordworks: Exploring language play*. Golden, CO: Fulcrum.
- Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., and Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A Practice Guide* (NCEE #2008-4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee/wwc>
- 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.
- Langer, J. A. (2009). Contexts for adolescent literacy. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 49-64.
- 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.
- Majors, Y. J., Kim, J. & Ansari, S. (2009). Beyond hop-hop: A cultural context view of literacy. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 343-359.
- Martínez-Roldán, C. M., & Fránquiz, M. E. (2009). Latino/a youth literacies: Hidden funds of knowledge. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 323-342.
- McMillan, J. H. (Ed.) (2007). *Formative classroom assessment: Theory into practice*. New York: Teachers College Press.
- McPeak, L., Trygg, L., Minadakis, A., & Diana, P. (2007). *The secondary literacy instruction and intervention guide. Helping school districts transform into systems that produce life-changing results for all children*. Mill Valley, CA: Stupski Foundation.
- Means, B. & Knapp, M. S. (1991). Cognitive approaches to teaching advanced skills to educationally disadvantaged students. *Phi Delta Kappan*, 72, 282-289.
- Meltzer, J. (2001). *Adolescent literacy resources: Linking research and practice*. Providence, RI: Northeast and Islands Regional Educational Laboratory at Brown University. Retrieved April 25, 2006, from http://www.alliance.brown.edu/pubs/adlit/alr_lrp.pdf
- Moje, E. (2006). *Integrating literacy into the secondary school content areas: An enduring problem in an enduring institution*. Paper presented at “Toward the Improvement of Secondary School Teaching and Learning: Integrating Language, Literacy, and Subject Matter,” University of Michigan, March 6, 2006.
- Murray, C. S., Wexler, J., Vaughn, S., Roberts, G., Tackett, K. K., & Kosanovich, M. (2008). *Effective instruction for adolescent struggling readers: Professional development module. Facilitator’s guide*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.

- Nation, K. (2005). Children's reading comprehension difficulties. In M. Snowling & C. Hulme (Eds.), *The Science of Reading* (pp. 248–265). Oxford: Blackwell.
- O'Brien, D., Stewart, R., & Beach, R. (2009). Proficient reading in school: Traditional paradigms and new textual landscapes. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 80-97.
- Phillips, M. (2005). *Creating a culture of literacy: A guide for middle and high school principals. Executive summary*. Reston VA: National Association of Secondary School Principals.
- 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.
- Rhodes, J. A. & Robnolt, V. (2009). Digital literacies in the classroom. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 153-169.
- Richardson, Morgan & Fleener (2006). *Reading to Learn in the Content Areas, Seventh Ed.* Thompson-Wadsworth.
- Rosenshine, B., & Meister, C. (1994). Reciprocal teaching: A review of the research. *Review of Educational Research, 64*, 479–530.
- Rosenshine, B., Meister, C., & Chapman, S. (1996). Teaching students to generate questions: A review of the intervention studies. *Review of Educational Research, 66*, 181–221.
- 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.
- Scammacca, N., Roberts, G., Vaughn, S., Edmonds, M., Wexler, J., Reutebuch, C. K., & Torgesen, J. K. (2007). *Interventions for adolescent struggling readers: A meta-analysis with implications for practice*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Shute, V. J. (2007). *Focus on formative feedback*. ETS Research Report. Retrieved from <http://www.ets.org/research/contact.html>
- Smith, M. W. & Wilhelm, J. D. (2009). Boys and literacy: Complexity and multiplicity. In L. Christenbury, R. Bomer, & P. Smagorinsky, (Eds.) (2009). *Handbook of adolescent literacy research*. New York: Guilford Press. pp. 360-371.
- Stiggins, R. J. (2007). Conquering the formative assessment frontier. In J. H. McMillan (Ed.), *Formative classroom assessment: Theory into practice* (pp. 8–28). New York: Teachers College Press.
- 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.
- Torgesen, J., Houston, D., & Rissman, L. (2007a). *Improving literacy instruction in middle and high schools: A guide for principals*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Torgesen, J. K., Houston, D. D., Rissman, L. M., Decker, S. M., Roberts, G., Vaughn, S., Wexler, J. Francis, D. J., Rivera, M. O., Lesaux, N. (2007b). *Academic literacy*

- instruction for adolescents: A guidance document from the Center on Instruction.*
Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Torgesen, J. K., & Miller, D. H. (2009). *Assessments to guide adolescent literacy instruction.* Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Wiliam, D., Lee, C., Harrison, C., & Black, P. (2004). Teachers developing assessment for learning: Impact on pupil achievement. *Assessment in Education, 11*, 49–65.