



Research Supporting Keys to Literacy Professional Development

Adult Learning Research Supporting the Keys to Literacy Professional Development Model

In order to have a lasting, sustainable impact on instruction, quality professional development must be more than individual workshops or training days. The Keys to Literacy professional development model includes hands-on initial training that shows teachers how to apply research-based instruction. The model also includes follow-up professional development provided by Keys to Literacy trainers AND building-based peer coaches, with an emphasis on peer collaboration.

Here is a review of the related research findings about effective professional development:

Snow-Renner and Lauer (2005) conducted a meta-analysis of effective professional development for teachers. In doing so, they found that “professional development that is most likely to positively affect a teacher’s instruction is:

- Of considerable duration
- Focused on specific content and/or instructional strategies rather than general
- Characterized by collective participation of educators, in the form of grade-level or school-level teams
- Infused with active learning rather than a stand-and-deliver model.” (p. 6)

Sailors (2009) reviewed the literature about professional development of teachers and concluded the following:

- Professional development that focuses on specific instructional practices increases the use of those practices by teachers in their classrooms (Desimone et al., 2002)
- Teachers need proof that the topics and practices of professional development activities actually work with students (Butler et al, 2004)
- Teachers describe “one shot” models of professional development (i.e., a single in-service day without follow up) as boring and irrelevant and report that they forget 90% of what was presented to them (NCES, 1999)
- Teachers report they want more and better in-service support (Anders, Hoffman, & Duffy, 2004)

In 2009, the National Staff Development Council issued a report (Wei et al, 2009) summarizing all of the research on effective professional development for teachers. Here are some of the findings that support the Keys to Literacy model of PD:

- **School-Based Coaching:** Coaches are used to tighten the connection between formal training and teachers’ application of instructional practices in their classrooms. Coaching models recognize that if PD is to take root in teachers’ practice, on-going and specific follow-up is necessary to help teachers incorporate new knowledge and skills into classroom practice both in the short and long term. Successful coaching should be offered by accomplished peers and should include ongoing classroom modeling, supportive critiques of practice, and specific observations. (p. 14)
- **Focus on Instructional Content:** PD is most useful when it focuses on concrete tasks of teaching rather than abstract discussions of teaching. PD affects teacher practice when it focuses on enhancing teachers’ knowledge of how to engage in specific instructional methods and how to teach specific kinds of content to students. It should also focus on student learning – providing an understanding of the skills that students will be expected to demonstrate. (p. 3)
- **Make it School-Wide:** PD is more effective when it is a coherent part of school reform plans rather than “one-shot” workshops. (p.5) When whole grade levels, schools or departments are involved, they provide a broader base of understanding and support. Teachers create a critical mass for improved instruction and serve as support groups for each other’s improved practice. (p. 6)
- **Provide Opportunities for Collaboration:** Effective PD highlights the importance of teacher collaboration and communities of practice in schools that focus on teachers’ own practices. Collective work in trusting environments

provides a basis for inquiry and reflection into teachers' own practice, allowing teachers to take risks, solve problems, and attend to dilemmas in their practice. (p.6)

Teachers learn best by working with their colleagues in professional learning communities, engaging in continuous dialog and examination of their practice and student performance to develop and enact more effective instructional practices. (p. 9)

- **Make the Training Active:** Opportunities for active learning are important, including modeling the sought after practices and constructing opportunities for teachers to practice and reflect on the new strategies. (p. 6)
- **PD Must Be Sustained and Intense:** Intensive PD sustained over a period of time is more effective than intermittent workshops with no follow-up mechanisms. This includes a substantial number of contact hours spread out over multiple months. (p. 7-8)
- **Provide Opportunities for Peer Observation:** Teachers' instruction becomes more student-centered and focused on ensuring that students gain mastery of skills or the subject when they participate in peer observations. Teachers also have more opportunities to learn and a greater desire to continuously develop more effective practices. Videotapes of teaching can be used as an alternative to observation as a way to make aspects of teacher practice public and open to peer critique, learn new practices, and analyze aspects of teaching practice. (p. 12-13)

References

Sailors, M. (2009). *Improving comprehension instruction through quality professional development*. In S.E. Israel & G.G. Duffy (Eds). Handbook of research on reading comprehension. New York: Routeledge.

Snow-Renner, R., & Lauer, P.A. (2005). *Professional development analysis*. Denver, CO: Mid-continent Research for Education Learning.

Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad*. Dallas, TX. National Staff Development Council.

Research on the Keys to Literacy Professional Development Offerings

ESSA Evidence

The instructional practices that are part of the content of Keys to Literacy professional development courses meet **Category #4 Level of ESSA** evidence: "Demonstrates a Rationale – a well-specified logic model that is informed by research or an evaluation that suggests how the intervention is likely to improve relevant outcomes and an effort to study the effects of the intervention, ideally producing promising evidence or higher, that will happen as part of the intervention or is underway elsewhere."

A list of research sources that inform the content of each course is provided below.

The Key Comprehension Routine

Effective Comprehension Instruction: What the Research Says

Researchers agree that the goal of comprehension is more likely attained when students are actively involved in seeking, organizing, and reformulating information in their own words. Written responses demand the mental transformation of ideas and foster ownership of learning (Stotsky, 2001; Duke, Pressley & Hilden, 2004). *The Key Comprehension Routine* teaches students to actively read about and listen to content information and then apply a set of research-based strategies to organize and write about that information.

Several reviews and syntheses of research offer key information about effective comprehension strategy instruction. These reviews by Alvermann and Moore (1991), The National Reading Panel (2000), The RAND Reading Study Group (Snow, 2002), Carlisle and Rice (2002), Curtis (2002), Meltzer, Smith and Clark (2003), and others examine hundreds of scientific and quasi-scientific studies and conclude that comprehension can be enhanced by teaching a relatively small set of comprehension strategies.

Effective Comprehension Strategies

The Key Comprehension Routine provides a consistent set of foundational strategy activities, including how to find main ideas, using and generating top-down topic webs, taking notes, generating questions, and summarizing. The National Reading Panel (2000) identified several comprehension strategies as being most effective for improving comprehension. They are described below, followed by a brief description of how each strategy is embedded in *The Key Comprehension Routine*.

- Comprehension monitoring. Readers approach text with a sense of purpose and adjust how they read.
 - *The Key Comprehension Routine* teaches students how to identify main ideas and relevant details while reading and then enter them into two-column notes.
- Use of graphic organizers (including story maps). Readers create or complete graphic or spatial representations of the topics and main ideas in text.
 - A major *Key Comprehension* activity is the use of a top-down topic graphic organizer that is used before, during and after reading.
- Question answering and generation. Readers ask and answer questions before, during, and after reading. They learn to consider what type of question is being asked according to a framework and to anticipate test questions they may be asked.
 - *The Key Comprehension Routine* teaches students how to generate questions at all levels of Bloom's Taxonomy. There is also a focus on learning key question terms.
- Summarization. Readers select and paraphrase the main ideas of expository text and integrate those ideas into a brief paragraph or several paragraphs that capture the most important propositions or ideas in the reading.
 - A major activity of *The Key Comprehension Routine* is summarizing. Students are taught a process for generating a summary and use a summarizing template to scaffold their thoughts before writing.
- Cooperative learning. Students learn strategies together through peer interaction, dialogue with each other, and with the teacher in whole-group activities.
 - After teachers have introduced and modeled strategy activities, *The Key Comprehension Routine* emphasizes providing opportunities for students to practice application of the activities in small, cooperative groups.

Using More Than One Strategy at a Time

Research has also shown that although each of the strategies is beneficial when used alone, instruction is even more effective when several strategies are combined together (Gaskins, 1998; Pressley, 2000; Duke, 2004). The National Reading Panel (2000) found that when used in combination, the use of strategies can improve the results of standardized comprehension tests. *The Key Comprehension Routine* trains teachers to use several strategies at a time (e.g., using a topic web to generate a summary, generating questions from two-column notes).

Teaching Strategies in the Content Classroom

Research further indicates that teachers who provide comprehension strategy instruction that is deeply connected within the context of subject matter learning, such as history and science, foster comprehension development (Snow, 2002; Biancarosa & Snow, 2004). If students learn that strategies are tools for understanding the conceptual context of text, then the strategies become more purposeful and integral to reading activities. Unless strategies are closely linked with knowledge and understanding in a content area, students are unlikely to learn the strategies fully, may not perceive the strategies as valuable tools, and are less likely to use them in new learning situations with new text. The research does not show strong results for students who learn skills in isolation and then are expected to apply or transfer those skills appropriately at their own discretion (Meltzer et al., 2003). In their summary of the research on secondary school teaching specific to reading, Alvermann and Moore (1991) concluded that the use of strategies such as taking notes, mapping, and paraphrasing should be built into the curriculum of all content areas, and that it is a program outcome for which all educators are responsible.

The Key Comprehension Routine embeds strategy instruction in content classroom lessons using content-specific texts and other reading materials. Students see the immediate application and benefit of using the strategies to help them read, organize, and study content information that is necessary to succeed in their major content classes.

Note taking is one key component of the routine. Professional development for two-column notes includes how to teach students to take notes from both reading and listening. Peverly and colleagues (2007) found that the act of taking written notes about text material should enhance comprehension. Note taking involves sifting through a text to determine what is most relevant and paraphrasing this information into written phrases in notes. "Intentionally or unintentionally, note takers organize the abstracted material in some way, connecting one idea to another, while blending new information with their own knowledge, resulting in new understandings of texts.... Taking notes about text proved to be better than just reading, reading and rereading, reading and studying, reading and underlying important information, and receiving explicit instruction in reading practices." (Graham & Hebert, 2010).

The Key Comprehension Routine and Writing Skills

The *Writing Next* report (Graham & Perin, 2007) reviewed the results of a meta-analysis of teaching techniques that were found to be most effective for improving the writing skills of 4th- to 12th-grade students. The authors identified 11 elements. Five of these elements are incorporated in *The Key Comprehension Routine* (page 4):

- **Writing Strategies**, which involves teaching students strategies for planning, revising, and editing their compositions.
- **Summarization**, which involves explicitly and systematically teaching students how to summarize texts
- **Specific Product Goals**, which assigns students specific, reachable goals for the writing they are to complete.”
- **Prewriting**, which engages students in activities designed to help them generate or organize ideas for their composition
- **Writing for Content Learning**, which uses writing as a tool for learning content material.

A more recent meta-analysis of the research on the connection between reading and writing, *Writing to Read* (Graham & Hebert, 2010) reached several conclusions that support The Key Comprehension Routine. The report identified the following instructional practices to be effective in improving students’ reading comprehension and comprehension of content information (p. 5):

- Have students write about the texts they read
 - Respond to text in writing
 - Write summaries of a text
 - Write notes about a text
 - Answer questions about a text in writing, or create and answer written questions about a text
- Teach students the writing skills and processes that go into creating text
 - Teach the process of writing, text structures for writing, paragraph or sentence construction skills
- Increase how much students write
 - Student’s reading comprehension is improved by having them increase how often they produce their own texts

The Key Comprehension Routine combines reading, writing and study strategies. An essential aspect about the program is that students write about what they read, and they learn about main ideas and text structure as this relates to both reading comprehension and writing. Shanahan (2006) notes that there is an empirical research base that shows that reading and writing depend on a common base of cognitive processes and knowledge. It is possible to teach reading so that it improves writing and to teach writing so that it improves reading. The main idea, text structure, topic webs, note-taking, and summarizing activities in *The Key Comprehension Routine* combine reading and writing instruction as applied to learning content.

Explicit and Direct Instruction

In a recent IES (Institute of Education Sciences) report titled *Improving Adolescent Literacy: Effective Classroom and Intervention Practices* (Kamil et al., 2008), five evidence-based recommendations were made to improve literacy levels among students in upper elementary, middle, and high schools. The second recommendation was for teachers to provide direct and explicit instruction in comprehension strategies to improve students’ reading comprehension. It notes “Direct and explicit teaching involves a teacher modeling and providing explanations of the specific strategies students are learning, giving guided practice and feedback, and promoting independent practice to apply the strategies.” (page 16) *The Key Comprehension Routine* uses an *I do it, We do it, You do it* model of instruction based on the Gradual Release of Responsibility model (Pearson & Gallagher, 1983). This approach ensures explicit and direct instruction, supported by modeling, scaffolding, and significant guided practice.

Professional Development for Strategy Instruction

A major finding of the National Reading Panel (2000) was that professional development is essential for teachers to develop knowledge of comprehension strategies and to learn how to teach and model strategy use. The RAND Reading Study Group (Snow, 2002) noted that studies have underscored the importance of teacher preparation as a way to deliver effective instruction in reading comprehension strategies, especially when the students are low performing. In their report *Literacy Instruction in the Content Areas*, Heller and Greenleaf (2007) note that one of the challenges of improving student content literacy skills is the scarcity of ongoing, high-quality professional development for teachers. They note that research has shown, however, that when teachers do receive intensive and ongoing professional support, many content area teachers find a way to emphasize reading and writing in their classes (Greenleaf & Schoenbach, 2004; Lieberman & Wood, 2002). Professional development for *The Key Comprehension Routine* is designed to provide ongoing guided practice and support through the use of building-based *Key Comprehension* coaches and a series of follow-up sessions facilitated by Keys to Literacy trainers.

Summary

The Key Comprehension Routine is a model for embedding comprehension and writing instruction in content classroom instruction. The instructional practices are organized into a common set of foundational activities that can be used with any subject matter. Every activity in the routine is research-based. The training book contains references to the research and connections are made to the research throughout professional development for the program. Specifically, Chapter 2 of the training book includes a review of the research on effective comprehension instruction.

The Key Vocabulary Routine

Effective Vocabulary Instruction: What the Research Says

In its analysis of the research on vocabulary instruction, the National Reading Panel (2000) found that there is no single best method for vocabulary instruction and that vocabulary should be taught both directly and indirectly. *The Key Vocabulary Routine* emphasizes both direct and indirect methods for building students' vocabulary.

Direct instruction means focusing on specific words, such as previewing unfamiliar words prior to reading a selection, or selecting a set of subject-specific high frequency words to teach in-depth. It is impossible to directly teach all the words that students need to learn. Beck, McKeown, and Kucan (2002) estimate that students can be explicitly taught approximately 400 words per year in school. It is therefore necessary for teachers to identify specific words to teach in-depth. Step 1 in *The Key Vocabulary Routine* presents research-based instruction methods for effective previewing before reading. Step 3 in the routine incorporates McKeown and Beck's (2004) Three Tier model for selecting academic and content-specific vocabulary to teach in-depth. Step 4 of the routine presents four research-based activities for teaching words in relation to other words and background knowledge (i.e., semantic feature analysis, semantic mapping, categorizing and scaling).

Other examples of direct instruction include teaching word analysis skills, such as identifying roots and base words, suffixes, prefixes and teaching how to use context to determine word meaning. Step 4 in *The Key Vocabulary Routine* focuses on these skills.

Vocabulary instruction should also include indirect approaches such as exposing students to many new words and having them read more. Indirect instruction also includes helping students develop an appreciation for words and experience enjoyment and satisfaction in their use (Baumann, et al., 2003). Step 5 in *The Key Vocabulary Routine* focuses on this through the promotion of word consciousness in the classroom.

The following chart indicates the research that was incorporated into the development of the five steps in *The Key Vocabulary Routine*; a review of this research is included in all Key Vocabulary training.

Step 1: Preview for difficult vocabulary	Pre-teaching vocabulary improves comprehension	Laflamme, 1997; Billmeyer & Barton, 1998
	Previewing words to make connections to background knowledge improves comprehension	Hirsch, 2003
	Goal of previewing should be to provide basic information	Graves, 2006
	How to preview	Beck & McKeown, 2007; Carlisle & Katz, 2005
Step 2: Use activities that connect vocabulary to background knowledge and related words	Why teaching related words is helpful	Landauer & Dumais, 1997; Hirsch 2006; Graves, 2006
	Semantic Mapping	Heimlich & Pittelman, 1986
	Semantic Feature Analysis	Baldwin et al., 1981; Johnson & Pearson, 1984
	Categorizing	Moats, 2005
	Scaling	Moats, 2005; Allen, 1999
Step 3: Select specific words to teach in-depth	Why teach some words in-depth?	Kamil, et al., 2008; Graves, 2006; McKeown & Beck; 2004
	How to select words to teach in-depth	Juel & Deffes, 2004; Lehr et al., 2004; McKeown & Beck, 2004; Haggard, 1982
	How to teach words in-depth	Beck et al., 1987, 2002; Kamil et al., 2008; Bromley, 2007; Moats, 2005
	Research-based templates for teaching words	Fray et al., 1969; Schwartz, 1988

	Teaching dictionary skills and user-friendly definitions	Lehr et al., 2004; Moats, 2005
Step 4: Identify opportunities to teach word learning strategies	Teaching how to use the context	Kuhn & Stahl, 1998; Bromley, 2007; Graves, 2006; Pressley et al., 2007; Beck, McKeown & Kucan, 2002
	Teaching how to use word parts	Carlisle, 2007; Edwards et al., 2004; Graves, 2004 & 2006; White, Sowell & Yanagihara, 1989; Stahl, 1999;
Step 5: Promote word consciousness	Creating a word-rich classroom	Anderson & Nagy, 1992; Lehr, 2004; Beck, McKeown & Kucan, 2002
	Word Play	Blachowicz & Fisher, 2004; Johnson et al., 2004
	Classroom reading materials	Nagy et al., 1987

Vocabulary Instruction Embedded Throughout the Day and in all Content Areas

The National Reading Panel (2000) also concluded that there is no single best time to teach vocabulary. Students have many words to learn across the curriculum; vocabulary instruction must happen during every content class, not just in English Language Arts. Content area vocabulary is often different and unique from vocabulary that students encounter in literature (Armbruster & Nagy, 1992; Billmeyer & Barton, 1998). Many content-area textbooks include specialized vocabulary and discipline-related concepts that students may not encounter elsewhere. Explicit instruction in specialized, content vocabulary such as in science or social studies has been identified as an important way to contribute to successful reading comprehension among adolescent students, and it enhances their ability to acquire textbook vocabulary (Kamil et al., 2008). In addition, Pressley, Disney, and Anderson (2007) found that students comprehend more when they are taught vocabulary taken from text they are reading. Beck, McKeown, and Kucan (2002) suggest that vocabulary instruction in middle and high schools should be more “rooted to text and dealt with in a way that both teaches the words and brings enriched understanding to the text” (p. 85).

The Key Vocabulary Routine is intended to be used by all content teachers throughout the day. The professional development for this program is delivered to general education for Tier I instruction, and to interventionists as Tier II support instruction. The routine recognizes that content teachers are often in the best position to determine which content-specific words are most worth teaching in their subject area.

The Case for a Consistent Routine

There is an extensive research base that suggests effective vocabulary instruction must be multi-componential. For example, Graves (2000) has advocated a four-part program that includes wide reading, teaching individual words, teaching word learning strategies, and fostering word consciousness. Pressley, Disney, & Anderson (2007) identify the following components as essential to an effective elementary or secondary classroom (p. 223 – 224):

- * Immersing students in rich verbal interactions, especially meaningful and interesting conversations around worthwhile content experiences;
- * Promoting extensive reading of worthwhile texts that are filled with mature vocabulary;
- * Attending responsively to students’ vocabulary needs (e.g., monitoring when they are struggling to identify a word);
- * Finding ways to provide definitions to students of potentially unfamiliar words;
- * Rich teaching of vocabulary words, involving extensive use of and experience with words over long periods of time;
- * Teaching that the meaning of a word often can be inferred from the context clues; and
- * Teaching the meaning of common word parts and providing practice in applying this knowledge to understanding unfamiliar words.

The Key Vocabulary Routine uses a set of instruction steps in a routine, incorporating the components noted above, that teachers can use on a consistent basis. When *The Key Vocabulary Routine* is used by a team of teachers who work with the same students across a grade level or on a school-wide basis, students are exposed to vocabulary instruction that is consistent and persistent from grade to grade and subject to subject. It is a systematic program that connects what we know from the research about best practices to daily, classroom instruction.

The Importance of Background Knowledge and Teaching Related Words

People who know a great deal about a topic also know its vocabulary. Word meanings are not just unrelated bits of information, but are part of larger knowledge structures (Stahl, 1999). Schema theory was developed by the educational psychologist R. C. Anderson (1977, 1984). A schema is a mental plan that organizes knowledge to represent one's understanding of a particular topic. People use their schemata to organize current knowledge and provide a framework for

future understanding. Schema theory has significant implications as it relates to comprehension and learning new information and words. When students can associate a new word or piece of information with an existing schema, they will learn it faster and remember it longer. Reading comprehension and vocabulary growth are best served by discussing the ideas and new words in them to expand the students' schemata. This kind of immersion in a topic not only improves reading and develops vocabulary, but it also develops writing skills (Hirsch, 2003).

The Key Vocabulary Routine places a strong emphasis on teaching new vocabulary in relation to other new words and words that students already know. The professional development for Step 2 teaches teachers how to use four research-based activities for connecting words to background knowledge and related words (i.e., semantic mapping, categorizing, semantic feature analysis, scaling).

Vocabulary Instruction for ELL Students

For students who are English language learners (ELL), vocabulary instruction is essential. Because these students acquire English vocabulary later, they often enter school with fewer words than their English-speaking peers. Research has found that ELL students are capable of eventually matching or even transcending native speaker levels of vocabulary knowledge, especially if they are exposed to vocabulary through a great deal of reading. There is evidence that many of the same instructional practices that promote vocabulary learning in students with English as their primary language also promote vocabulary for ELL students (Snow & Kim, 2007). This includes all of the steps in *The Key Vocabulary Routine*.

Explicit and Direct Instruction

In a recent IES (Institute of Education Sciences) report titled *Improving Adolescent Literacy: Effective Classroom and Intervention Practices* (Kamil et al., 2008), five evidence-based recommendations were made to improve literacy levels among students in upper elementary, middle, and high schools. The first recommendation was for teachers to provide explicit vocabulary instruction both as part of reading and language arts classes and as part of content-area classes such as science and social studies. Research indicates that direct teaching of specific words and word-learning strategies can both add words to students' vocabularies and improve reading comprehension of texts containing those words (Lehr et al., 2004). The IES report notes "Direct and explicit teaching involves a teacher modeling and providing explanations of the specific strategies students are learning, giving guided practice and feedback, and promoting independent practice to apply the strategies." (page 16) *The Key Vocabulary Routine* uses an *I do it, We do it, You do it* model of instruction based on the Gradual Release of Responsibility model (Pearson & Gallagher, 1983). This approach ensures explicit and direct instruction, supported by modeling, scaffolding, and significant guided practice.

Summary

The Key Vocabulary Routine is a model for embedding direct and indirect instruction in content classroom instruction. The instructional practices are organized into a common set of foundational activities that can be used with any subject matter. Every activity in the routine is research-based. The training book contains references to the research and connections are made to the research throughout professional development for the program. Specifically, Chapter 2 of the training book is a review of the research on effective vocabulary instruction.

References

- Allen, J. (1999). *Words, words, words: Teaching vocabulary in grades 4-12*. York, ME: Stenhouse.
- Anderson, R. C. (1977). *The notion of schemata and the educational enterprise: General discussion of the conference*. In R.C. Anderson, R. J. Spiro, and W. E. Montague (Eds.). 1984. *Schooling and the acquisition of knowledge*. Hillsdale, NJ: Lawrence Erlbaum.
- Anderson, R.C., & Nagy, W.E. (1992). *The vocabulary conundrum*. *American Educator*, 16 (4); 14-18, 44-47.
- Anderson, R.C. & Pearson, P.D. (1984). *A schema-theoretic view of basic processes in reading*. In P.D. Pearson, R. Barr, M. L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research*. New York: Longman
- Armbruster, B.B., & Nagy, W.E. (1992). *Vocabulary in content area lessons*. *The Reading Teacher*, 45 (7), 550-551.
- Baumann, J.R., Edwards, E.C., Boland, E.M., Olejnik, S., & Kame'enui, E.J. (2003). *Vocabulary tricks: Effects of instruction in morphology and context in fifth-grade students' ability to derive and infer word meanings*. *American Educational Research Journal*, 40(2), 447-94.
- Baldwin, R.S., Ford, J.C. & Readance, J.E. (1981). *Teaching word connotations: An alternative strategy*. *Reading World*, 21, 103-108.
- Beck, I.L., & McKeown, M.G. (2007). *Different ways for different goals, but keep your eye on the higher verbal goals*. In R.K. Wagner, A.E. Muse, & K. R. Tannenbaum (Eds.). *Vocabulary acquisition: Implications for reading comprehension*. New York: The Guilford Press.
- Beck, I.L., McKeown, M.G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York: Guilford Press.

- Beck, I.L., McKeown, M.G., & Omanson, R.C. (1987). *The effects and uses of diverse vocabulary instructional techniques*. In M.G. McKeown & M.E. Curtis (Eds.). *The nature of vocabulary acquisition* (pp.147-163). Englewood Cliffs, NJ: Erlbaum.
- Billmeyer, R., & Barton, M.L. (1998). *Teaching reading in the content areas: If not me then who?* Aurora, CO: Mid-continent Regional Educational Laboratory.
- Blachowicz, C.L.Z. & Fisher, P. (2004) *Building vocabulary in remedial settings: Focus on word relatedness*. Perspectives, 30, 1. The International Dyslexia Association.
- Bromley, K. (2002). *Stretching students' vocabulary*. New York: Scholastic.
- Carlisle, J. F., & Katz, L.A. (2005). *Word learning and vocabulary instruction*. In J. R. Birsh (Ed.). *Multisensory teaching of basic language skills*. Baltimore, MD: Paul H. Brookes.
- Carlisle, J.F. (2007). *Fostering morphological processing, vocabulary development, and reading comprehension*. In R.K. Wagner, A.E. Muse, & K.R. Tannenbaum (Eds.). *Vocabulary acquisition: Implications for reading comprehension*. New York: Guilford Press.
- Edwards, C.E., Font, G., Baumann, J.F., & Boland, E. (2004). *Unlocking word meanings: Strategies and guidelines for teaching morphemic and contextual analysis*. In James F. Baumann & Edward J. Kame'enui (Eds.). *Vocabulary instruction: Research to practice*. New York: Guilford Press.
- Fraye, D.A., Frederick, W.D., & Klausmeier, H.J. (1969). *A schema for testing the level of concept mastery* (Technical Report No. 16). Madison: University of Wisconsin, Wisconsin Center for Education Research.
- Graves, M.F. (2000). *A vocabulary program to complement and bolster a middle-grade comprehension program*. In B. Taylor, M. Graves, & P. van den Broek (Eds.), *Reading for meaning: Fostering comprehension in the middle grades*. Newark, DE: International Reading Association.
- Graves, M.F. (2006). *The vocabulary book*. New York: Teachers College Press.
- Graves, M.F. (2004). *Teaching prefixes: As good as it gets?* In James F. Baumann & Edward J. Kame'enui (Eds.). *Vocabulary instruction: Research to practice*. New York: Guilford Press.
- Haggard, M.R. (1982). *The vocabulary self-collection strategy: An active approach to word learning*. *Journal Reading*, 26(3), 203-207.
- Heimlich, J.E., & Pittelman, S.D. (1986). *Semantic mapping: Classroom applications*. Newark, DE: International Reading Association.
- Hirsch, E.D. (2003). *Reading comprehension requires knowledge – of words and the world: Scientific insights into the fourth-grade slump and the nation's stagnant comprehension scores*. *American Educator*, Spring, 2003. American Federation of Teachers.
- Johnson, D.D., Johnson, B.V.H., & Schlichting, K. (2004). *Logology: Word and language play*. In James F. Baumann & Edward J. Kame'enui (Eds.). *Vocabulary instruction: Research to practice*. New York: Guilford Press.
- Johnson, D.D., & Pearson, P.D. (1984). *Teaching reading vocabulary*. (2nd ed.). New York: Holt, Rinehart, and Winston.
- Juel, C. & Deffes, R. (2004) *Making words stick. What research says about reading*, 61(6). Association for Supervision and Curriculum Development: Alexandria, VA.
- Kamil, M.L., Borman, G.D., Dole, J., Kral, C.C., Salinger, T., & 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>.
- Kuhn, M.R., & Stahl, S. A. (1998). *Teaching children to learn word meanings from context: A synthesis and some questions*. *Journal of Literacy Research*, 30, 119-138.
- Laflame, J.G. (1997). *The effect of the Multiple Exposure Vocabulary Method and the Target Reading/Writing Strategy on test scores*. *Journal of Adolescent and Adult Literacy*, 40 (5), 372-381.
- Landauer, T.K., & Dumais, S.T. (1997). *A Solution to Plato's problem: The latent semantic analysis theory of acquisition, induction, and representation of knowledge*. *Psychological Review* 104 (2), 211-240.
- Lehr, F., Osborn, J., & Hiebert, E.H. (2004). *A focus on vocabulary*. Honolulu, HI: Pacific Resources for Education and Learning.
- McKeown, M.G., & Beck, I.L. (2004). *Direct and rich vocabulary instruction*. In James F. Baumann & Edward J. Kame'enui (Eds.). *Vocabulary instruction: Research to practice*. New York: Guilford Press.

Moats, L.C., (2005). *LETRS: Module 4: The mighty word: Building vocabulary and oral language*. Longmont, CO: Sopris West.

Nagy, W.E., Anderson, R.C., & Herman, R. (1987). *Learning word meanings from context during normal reading*. American Educational Research Journal 24, 237-270.

National Reading Panel (2000). *Teaching children to read: An evidence-based assessment of scientific research literature on reading and its implications for reading instruction*. Bethesda, MD: National Institutes of Health.

Pearson, P.E., & Gallagher, M.C. (1983). *The instruction of reading comprehension*. Contemporary Educational Psychology, 8, 317-344.

Pressley, M., Disney, L., & Anderson, K. (2007). *Landmark vocabulary instructional research and the vocabulary instructional research that makes sense now*. In Richard K.

Schwartz, R.M. (1988). *Learning to learn vocabulary in content area textbooks*. Journal of Reading, 32, 108-118.

Snow, C.E., & Kim, Y. (2007). *Large problem spaces: The challenge of vocabulary for English language learners*. In R.K. Wagner, A.E. Muse, & K.R. Tannenbaum (Eds.). *Vocabulary Acquisition: Implications for Reading Comprehension*. New York: Guilford Press.

Stahl, S.A. (1999). *Vocabulary development*. Cambridge, MA: Brookline Books.

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

Keys to Content Writing and Keys to Early Writing

There is significant research that has been conducted and reviewed on effective writing instruction (Hillocks, 1986; MacArthur, Graham, & Fitzgerald, 2006; Graham & Perin, 2007; Graham & Hebert, 2010; Graham et al., 2013). *Keys to Writing* professional development draws on this research base and presents a practical model for teaching writing skills and strategies for learning. Teachers learn how to embed effective writing instruction in their existing content curriculum through Keys to Literacy professional development for the model.

There are three broad findings that are consistent in the research on effective writing instruction (Troia, 2007):

- Teach the steps in the writing process
- Explicitly teach writing strategies that are used at each step of the writing process
- Increase how much students write – the more they write the better they get at writing

Keys to Writing includes “The Process Writing Routine” to help students remember the stages of the writing process (Think, Plan, Write, Revise). Teaching the writing process is aligned with Common Core writing standard #5. During professional development, teachers learn how to provide explicit instruction for numerous strategies that must be applied at every stage of the writing process (Graham, 2006). Some of these strategies include how to: gather information and take notes from a source; how to turn notes into paragraphs in a draft; how to write introductions and conclusion; how to use transition words; how to cite a source; how to use a top-down topic web to organize ideas before writing (Graham & Harris, 2007).

Keys to Writing also places significant emphasis on having teachers of all subject increase the amount of writing they incorporate into content instruction, and the Quick Writes segment of the training gives teachers suggestions and practice for using short, informal writing tasks. Frequent writing of both short and long writing pieces is aligned with Common Core writing standard #10.

Writing Next (Graham & Perin, 2007)

In their seminal report *Writing Next*, Graham and Perin (2007) identified eleven elements of writing instruction that were found to be effective for helping students in grades four through twelve learn to write well and to use writing as a tool for learning. With the exception of the fifth element (teach word processing), *Keys to Writing* incorporates all of the Writing Next elements listed below:

- Writing Strategies, which involves teaching students strategies for planning, revising, and editing their compositions
- Summarization, which involves explicitly and systematically teaching students how to summarize texts
- Collaborative Writing, which uses instructional arrangements in which adolescents work together to plan, draft, revise, and edit their compositions

- Specific Product Goals, which assigns students specific, reachable goals for the writing they are to complete
- Sentence Combining, which involves teaching students to construct more complex, sophisticated sentences
- Prewriting, which engages students in activities designed to help them generate or organize ideas for their composition
- Inquiry Activities, which engages students in analyzing immediate, concrete data to help them develop ideas and content for a particular writing task
- Process Writing Approach, which interweaves a number of writing instructional activities in a workshop environment that stresses extended writing opportunities, writing for authentic audiences, personalized instruction, and cycles of writing
- Study of Models, which provides students with opportunities to read, analyze, and emulate models of good writing
- Writing for Content Learning, which uses writing as a tool for learning content material

As noted above, *Keys to Writing* incorporates The Process Writing Routine (Think, Plan, Write, Revise) throughout the training (Writing Next #9). During initial training, teachers receive a classroom poster of these stages.

The KTL Writing Assignment Guide (WAG) supports writing assignment planning by the teacher. The WAG requires teachers to set specific product goals related to audience/purpose, format, due dates, content and text requirements, source requirements (Writing Next #4). The WAG also requires teachers to plan how they will provide mentor models of writing to study (Writing Next #10), how they will provide opportunities for student collaboration (Writing Next #3), and which scaffolds they will provide for pre-writing and revision (Writing Next #7).

During the Quick Writes segment of training, teachers learn how to incorporate summarizing on a regular basis (Writing Next #2), and how to use sentence combining as an activity to build advanced sentence skills (Writing Next #6). Summarizing is aligned with Common Core reading standard #2.

A key component of *Keys to Writing* is teaching students how to write from subject area sources (Writing Next #8, 11). The program also emphasizes explicit instruction through modeling, think aloud, and guided practice, and use of a gradual release of responsibility approach to teaching. There is a significant body of research that has identified these teaching elements as essential (Graham & Harris, 2007; Pritchard & Honeycutt, 2007; Schumaker & Deshler, 2009).

Writing to Read (Graham & Hebert, 2010)

Writing to Read reported the findings from a meta-analysis of writing instruction research to determine if writing instruction enhances reading comprehension or other reading skills such as decoding or fluency. They identified three instructional recommendations that have been embedded in *Keys to Writing*:

- Have Students Write About the Texts They Read. Students' comprehension of science, social studies, and language arts texts is improved when they write about what they read, specifically when they respond to text in writing, write summaries of a text, write notes about a text, and answer questions about a text in writing.
- Teach Students the Writing Skills and Processes That Go Into Creating Text. Students' reading skills and comprehension are improved by learning the skills and processes that go into creating text, specifically when teachers teach the process of writing and text structures for writing, paragraph and sentence construction skills.
- Increase How Much Students Write. Students' reading comprehension is improved by having them increase how often they produce their own texts.

Teaching Elementary School Students to Be Effective Writers (Graham et al., 2012)

Graham and his colleagues (2012) wrote this practice guide based on their meta-analysis of the research on effective writing instruction for elementary students through grade six. The report made four major recommendations based on consistent research findings:

1. Provide daily time for students to write.
2. Teach students to use the writing process for a variety of purposes.
 - a. Teach students the writing process.

- b. Teach students to write for a variety of purposes.
3. Teach students to become fluent with handwriting, spelling, sentence construction, typing, and word processing.
4. Create an engaged community of writers.

As noted above, *Keys to Writing* emphasizes the teaching and student use of the writing process, the importance of incorporating writing to learn content in every subject throughout the school day, basic text structures, the types of writing, and writing from sources. The KTL Writing Assignment Guide advocates an engaged community of writers through the planning of opportunities for students to collaborate at the thinking, planning, and revising stages of writing. *Keys to Writing* includes student peer feedback checklists.

Additional Research Topics

Text Structure

Keys to Writing emphasizes the importance of teaching students language structures at the sentence, paragraph, and longer text levels. Gersten and Baker (1999) make this point about the importance of teaching language and text structures:

“Explicitly teaching text structures provides a guide for the writing task, whether it is a persuasive essay, a personal narrative, or an essay comparing and contrasting two phenomena. Different types of writing are based on different structures. For example, a persuasive essay contains a thesis and supporting arguments, while narrative writing may contain character development and a story climax. Instruction in text structures typically includes numerous explicit models and prompts.” (p.2)

During training, teachers learn specific strategies for teaching students how to write introductions and conclusions and develop body paragraphs, as well as the text components of informational, argument, and narrative writing. They also learn how to teach the difference between text structures and text features, the various types of text substructures (e.g., cause and effect, compare and contrast, sequence, description, explanation) and use of transitions that are associated with each substructure (Calkins, Ehrenworth, Lehman, 2012). Teaching text structures is aligned with Common Core writing standards #1, 2, 3 and reading standard #5.

Subject-Specific Writing and Writing About Text

Keys to Writing is designed for use by teachers of content areas such as social studies/history and science, as well as for ELA teachers. Content teachers learn how to provide explicit instruction for writing from text and digital sources. During professional development, KTL trainers demonstrate how to use modeling and think aloud to read text critically and identify relevant information for argument and informational writing assignments that are written in subject areas. Suggestions for teaching students to track sources are included. This focus of the program draws from a number of evidence-based practices identified in recent literature (Klein & Yu, 2013; Applebee & Langer, 2013; Shanahan, 2013; Shanahan, T. 2006; Newell et al., 2007) and is aligned with Common Core writing standards #7, 8, 9 and reading standards #1, 2.

References

- Applebee, A.N., & Langer, J.A. (2013). *Writing instruction that works: Proven methods for middle and high school classrooms*. New York: Teachers College Press.
- Beach, R. & Friedrich, T. (2006). *Response to writing*. In C.A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research*. New York: Guilford Press.
- Boscolo, P. & Gelati, C. (2007). *Best practices in promoting motivation for writing*. In S. Graham, C.A. MacArthur, & J. Fitzgerald (Eds.). *Best practices in writing instruction*. New York: Guilford Press.
- Chapman, M. (2006). *Preschool through elementary writing*. In P. Smagorinsky (Ed.). *Research on composition*. New York: Teachers College.
- Common Core State Standards Initiative. (2010). *Common core state standards for English language arts and literacy in history/social studies, science, and technical subjects*. Retrieved on March 1, 2012 from <http://www.corestandards.org/>
- Fisher, D. & Frey, N. (2014). *Close reading and writing from sources*. International Reading Association.
- Gallagher, K. (2015). *In the best interest of students*. Portland, ME: Stenhouse Publishers.

- Gersten, R., Baker, S., & Edwards, L. (1999). *Teaching expressive writing to students with learning disabilities*. ERIC/OSEP Digest #E590. ERIC Clearinghouse on Disabilities and Gifted Education (ERIC EC).
- Graham, S. (2006). *Strategy instruction and the teaching of writing: A met-analysis*. In C.A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research*. New York: Guilford Press.
- Graham, S., Bollinger, A., Booth Olson, C., D'Aoust, C., MacArthur, C., McCutchen, D., & Olinghouse, N. (2012). *Teaching elementary school students to be effective writers: A practice guide* (NCEE 2012- 4058). 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/publications_reviews.aspx#pubsearch.
- Graham, S., & Harris, K.R. (2007). *Best practices in teaching planning*. In S. Graham, C.A. MacArthur, & J. Fitzgerald (Eds.), *Best practices in writing instruction*. New York: Guilford Press.
- Graham, S., & Perin, D. (2007). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools – A report to Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Graham, S. & Hebert, M. (2010). *Writing to read: Evidence for how writing can improve reading*. A Carnegie Corporation Time to Act Report. Washington, DC: Alliance for Excellent Education.
- Graham, S., MacArthur, C.A., & Fitzgerald (2013). *Best practices in writing instruction*, 2nd edition. New York, Guilford Press.
- Hayes, J.R., & Flower, L. (1980). *Identifying the organization of writing processes*. In L.W. Gregg & E.R. Steinberg (Eds.), *Cognitive processes in writing: An interdisciplinary approach* (pp. 3-30). Hillsdale, NJ: Erlbaum.
- Hillocks, G. (1986). *Research on written composition: New directions for teaching*. Urbana, IL: National Council of Teachers of English.
- Kamil, M.L., Borman, G.D., Dole, J., Kral, C.C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A practical guide* (NCEE #2008-4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
- Klein, P.D., & Yu, A.M. (2013). *Best practices in writing to learn*. In S. Graham, C.A. MacArthur, & J. Fitzgerald (Eds.). *Best practices in writing instruction*, 2nd edition. New York: Guilford Press.
- MacArthur, C.A., Graham, S., & Fitzgerald, J. (2006). *Handbook of writing research*. New York, Guilford Press.
- Michigan Association of Intermediate School Administrators. *Argument prompts*. Retrieved on September 15, 2012 from <http://www.gomaisa.org>.
- Newell, G., Koukis, S., & Boster, S. (2007). *Best practices in developing a writing across the curriculum program in the secondary school*. In Graham, S, MacArthur, C.A., & Fitzgerald, J. *Best practices in writing instruction*. New York: Guilford Press.
- Pritchard, R.J., & Honeycutt, R.L. (2006). *The process approach to writing instruction: examining its effectiveness*. In C.A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research*. New York: Guilford Press.
- Sanders, T.J.M. & Schilpernoord, J. (2006). *Text structure as a window on the cognition of writing: How text analysis provides insights*. In C.A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research*. New York: Guilford Press.
- Schumaker, J.B., & Deshler, D.D. (2009). *Adolescents with learning disabilities as writers: Are we selling them short?* *Learning Disabilities Research & Practice*, 24(2), 81-92.
- Sedita, J. (2003). *The key comprehension routine*. Rowley, MA: Keys to Literacy.
- Shanahan, T. (2004). *Overcoming the dominance of communication: Writing to think and learn*. In T.L. Jetton & J.A. Dole (Eds.). *Adolescent literacy research and practice*. New York: The Guilford Press.
- Shanahan, T. (2006). *Relations among oral language, reading, and writing development*. In C.A. MacArthur, S. Graham J. Fitzgerald (eds.). *Handbook of writing research*. New York, Guilford Press.
- Shanahan, T. (2013). *Best practices in writing about text*. In S. Graham, C.A. MacArthur, & J. Fitzgerald (Eds.). *Best practices in writing instruction*, 2nd edition. New York: Guilford Press.
- Troia, G.A. (2007). *Research in writing instruction: What we know and what we need to know*. In D.D. Deschler, M.F. Hock, M. Pressley, A.K. Billman, R.H. Perry, K.E. Reffitt, & J.M. Reynolds (Eds.). *Shaping literacy achievement: Research we have, research we need*. New York: Guilford Press.
- Vesterman, W. (2005). *Reading and writing short arguments*. Columbus, OH: McGraw-Hill Higher Education.

Research Supporting the *Keys to Beginning Reading* Professional Development Course

This professional development course provides the background knowledge needed to teach all of the components of beginning reading instruction. This includes the five components identified in the National Reading Panel (phonemic awareness, phonics, fluency, vocabulary, comprehension) as well as oral language, sentence structure (syntactic/grammar awareness) and text structure. The course provides knowledge about each of these components and evidence-based instructional practices for teaching them.

Keys to Beginning Reading references research throughout so participants can see that the instructional practices are grounded in reading science. The course includes evidence-based instructional practices, and is program-neutral. That is, the training is not tied to a particular reading program and the instructional practices can be used regardless of the reading curriculum or reading program already in use at a school. The knowledge gained from the course enables participating educators to identify connections to their current beginning reading practices and programs, and gives them the tools to modify and expand their instruction to more effectively teach young children how to read.

Meta-Analyses of Research

In particular, the KBR PD program draws from major research reports: The National Reading Panel report (2000) and two more recent Institute of Education Sciences guides: *Improving Reading Comprehension in Kindergarten Through 3rd Grade* (Shanahan et al., 2010) and *Foundational Skills to Support Reading for Understanding in Kindergarten Through 3rd Grade* (Foorman et al., 2016). The content of the *Keys to Beginning Reading* course is also informed by reading research summarized in The National Early Literacy Panel Report (2008).

Research Models

The content in KBR is aligned to several research models. The first is the National Reading Panel's (2000) schema of organizing instruction around the five components of reading: phonemic awareness, phonics, fluency, vocabulary, comprehension.

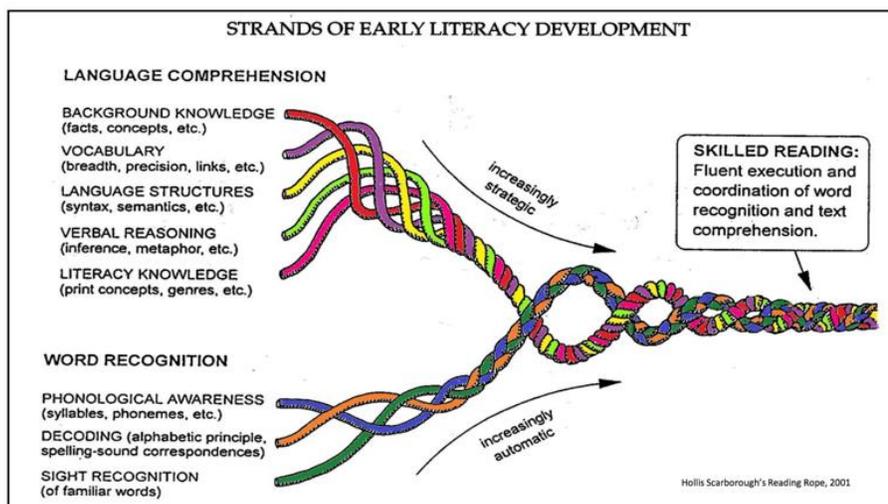
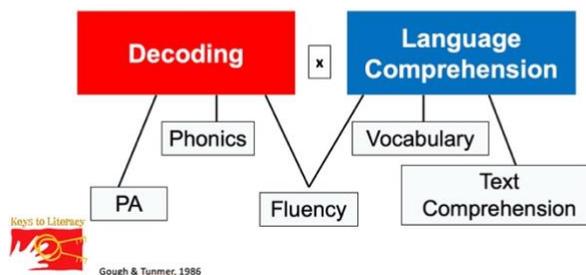
The second is *The Simple View of Reading* (shown to the right), which is often referred to as the foundation of the science of reading. This model asserts that reading comprehension is the product of both decoding (word-level reading) and linguistic (language) comprehension (Gough & Tunmer, 1986; Tunmer & Chapman, 2012). In order to be a fluent reader with comprehension, a student needs to develop both sets of skills.

The third is Hollis Scarborough's *Reading Rope* (2001). This model of reading depicts the multiple skills required to successfully read as strands in a rope. The model goes beyond the simple five-component model identified by the National Reading Panel. The *reading rope* model identifies five *language comprehension* skills and three *word recognition* skills. The strands in the rope become more tightly intertwined as students become increasingly more strategic and automatic in their ability to apply all of the skills until they finally become skilled readers. View the graphic organizer of the Scarborough rope above.

The Simple View: Reading is ...

... the product of **decoding**
(the ability to read words on a page)

and **language comprehension**
(understanding those words).



The fourth is a model that identifies language components that address the seven oral and written English language systems that young children must learn in order to develop literacy skills (Moats, 2009). This includes: phonology, orthography,

morphology, semantics, syntax, discourse, pragmatics. All four of these models are referenced throughout the KBR training modules.

References from above text:

Foorman, B., Beyler, N., Borradaile, K., Coyne, M., Denton, C. A., Dimino, J., Furgeson, J., Hayes, L., Henke, J., Justice, L., Keating, B., Lewis, W., Sattar, S., Streke, A., Wagner, R., & Wissel, S. (2016). *Foundational skills to support reading for understanding in kindergarten through 3rd grade* (NCEE 2016-4008). Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education.

Gough, P.B., & Tunmer, W.E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education*, 7, 6-10.

Institute of Child Health and Human Development. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

Moats, L.C. (2009). *Getting up to speed: Developing fluency*, 2nd Edition. Boston, MA: Sopris West.

National Early Literacy Report: (2008). *Developing Early Literacy: Report of the National Early Literacy Panel, A Scientific Synthesis of Early Literacy Development and Implications for Intervention*. National Institute for Literacy.

Scarborough, H. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S.B. Neuman & D.K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 97-110). New York: Guilford Press.

Shanahan, T., Callison, K., Carriere, C., Duke, N.K., Pearson, P.D., Schatschneider, C., & Torgesen, J. (2010). *Improving reading comprehension in kindergarten through 3rd grade: A practice guide* (NCEE 2010-4038). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Tunmer, W.E., & Chapman, J.W. (2012). The simple view of reading redux: Vocabulary knowledge and the independent components hypothesis. *Journal of Learning Disabilities*, 45(5), 453-466.

A full list of over 200 research references from the *Keys to Beginning Reading* training manual.

Understanding Dyslexia

This professional development course provides an overview of dyslexia, how this neurobiological learning disability affects students' ability to read and write, and research-based instructional practices.

The information and instruction resources presented are based on the research represented in the following:

- Adams, M.J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: The MIT Press.
- Adams, M.J., Foorman, B.R., Lundberg, L., & Beeler, T. (1997, 1998). *Phonemic awareness in young children*. Baltimore: Paul H. Brookes.
- Allen, K.A., Neuhaus, G.F., & Beckwith, M. (2011). Alphabet knowledge: Letter recognition, naming, and sequencing. In Birsh, J.R. (Ed.). *Multisensory teaching of basic language skills*, 3rd edition. Baltimore, MD: Paul H. Brookes.
- Bexkens, A., van den Wildenberg, W.P., & Tijms, J. (2015). Rapid automatized naming in children with dyslexia: Is inhibitory control involved? *Dyslexia*, 21 (3).
- Bhattacharya, A., & Ehri, L. C. (2004). Graphosyllabic analysis helps struggling readers read and spell words. *Journal of Learning Disabilities*, 37 (4), 331-348.
- Blachman, B.A., Ball, E.W., Black, R.S., & Tangel, D.M. (1994). Kindergarten teachers develop phoneme awareness in low-income, inner-city classrooms: Does it make a difference? *Reading and Writing: An Interdisciplinary Journal*, 6, 1-18.
- Cain, K. (2010). *Reading Development and Difficulties*. Wiley and Sons.
- Cassidy, B. & Cassidy, L. (2019). *Early screening and intervention for students with dyslexia*. National Association of State Boards of Education, May, 2019.
- Carreker, S. (1999). Teaching spelling. In J.R. Birsch (Ed.), *Multisensory teaching of basic language skills*. Baltimore: Brookes.
- Carreker, S. (2011). Teaching reading: Accurate decoding. In J. R. Birsh (Ed). *Multisensory teaching of basic language skills*, 3rd Edition. Baltimore, MD: Paul H Brookes.
- Catts, H.W., Adlof, S.M., & Wessmer, S.E. (2006). Language deficits in poor comprehenders: A case for the simple view of reading. *Journal of Speech, Language, and Hearing Research*, 49, 278-293.
- Center for Reading and Language Research, Tufts University. *Naming speed deficit: Frequently asked questions*. Retrieved from: <https://ase.tufts.edu/crlr/documents/FAQNamingSpeedDeficit.pdf>
- Chall, J.S. (1996). *Learning to read: The great debate* (3rd edition). Fort Worth, TX: Harcourt Brace College Publishers.
- Dehaene, S. (2009). *Reading in the brain*. New York, Penguin Group.
- Eden, G.F. Dyslexia and the brain. International Dyslexia Society. Retrieved from <https://app.box.com/s/q2cjhwikwncohy3vmv747h04md6eevn>
- Eden, G.F., Olulade, O.A., Evans, T.M., Krafnic, A.J., & Alkire, D.R. (2019). *Developmental dyslexia*. Houston Branch of the International Dyslexia Association, 2019 Resource Directory.
- Eden, G.F. (2016). Dyslexia and the brain. YouTube video. Posted by Understood, Oct 14, 2016. Retrieve from <https://www.youtube.com/watch?v=OrF6m1mRsCQ>
- Eden's YouTube explanation: <https://www.highperformancelearning.com/reading-dyslexia-brain-plasticity/>
- Ehri, L.C. (2004). Teaching phonemic awareness and phonics: An explanation of the National Reading Panel meta-analysis. In P. McCardle & V. Chhabra (Eds.), *The voice of evidence in reading research* (pp. 153-186). Baltimore: Paul H. Brookes.
- Foorman, B., Beyler, N., Borradaile, K., Coyne, M., Denton, C. A., Dimino, J., Furgeson, J., Hayes, L., Henke, J., Justice, L., Keating, B., Lewis, W., Sattar, S., Streke, A., Wagner, R., & Wissel, S. (2016). *Foundational skills to support reading for understanding in kindergarten through 3rd grade* (NCEE 2016-4008). Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education. Retrieved from the NCEE website: <http://whatworks.ed.gov>.
- Gough, P.B., & Tunmer, W.E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education*, 7, 6-10.

- Hudson, N., Scheff, J., Tarsha, M., & Cutting, L.E. (2016). Reading comprehension and executive function: Neurobiological findings. *Perspectives on Language and Literacy, Spring 2016*.
- Hudson, R.F., High, L. Al Otaiba, S. (2007). Dyslexia and the brain: What does current research tell us? *The Reading Teacher, 60*(6), 506-515.
- International Dyslexia Association (2017). Universal screening: K-2 reading. International Dyslexia Association. Retrieved from <https://dyslexiaida.org/universal-screening-k-2-reading/>
- Kilpatrick, D.A. (2019). *Assessing, preventing, and overcoming reading difficulties*. Online course. Colorado Department of Education. Retrieved from: <https://sitesed.cde.state.co.us/course/view.php?id=132#section-1>
- Lyon, G.R., Shaywitz, S.e., & Shaywitz, B.A. (2003). Defining dyslexia, cormorbidity, teachers's' knowledge of language and reading. *Annals of Dyslexia, 53*, 1-14.
- Mather, N. & Wendling, B. J. (2011). *Essentials of dyslexia assessment and intervention*. Hoboken, NJ: Wiley & Sons.
- Middle Tennessee State University Center for Dyslexia. *Dyslexia Overview*. Video. Retrieved from <https://www.youtube.com/watch?v=klG8vHRLtJU&feature=youtu.be>
- Middle Tennessee State University Center for Dyslexia. *Focus on Structured Literacy*. Video. Retrieved from <https://www.youtube.com/watch?v=CcsXZ9MLMNs&feature=youtu.be>
- Moats, L.C., & Dakin, K.E. (2008). *Basic facts about dyslexia and other reading problems*. Baltimore: The International Dyslexia Association.
- National Reading Panel. National Institute of Child Health and Human Development. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office
- New Jersey Dyslexia Handbook (2017). New Jersey Department of Education. Retrieved from <https://www.state.nj.us/education/specialed/dyslexia/NJDyslexiaHandbook.pdf>
- Nevills, P., & Wolfe, P. (2009). *Building the reading brain, PreK-3* (2nd ed.). Thousand Oaks, CA: Corwin Press.
- Odegard, T.N. (2019). Dyslexia Defined. *Perspectives on Language and Literacy, 45*, #1.
- Pearson, P.E. & Gallagher, M.C. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology, 8*, 317-344.
- Richards, T.L.; Aylward, E.H.; Field, K.M.; Grimme, A.C.; Raskind, W.; Richards, A.L.; Nagy, W.; Eckert, M.; Leonard, C.; Abbot, R.D.; Berninger, V.W. (2006). Converging evidence for triple word form theory in children with dyslexia. *Developmental Neuropsychology 30* (1) 547-89.
- Seidenberg, M. (2018). *Language at the speed of sight*. New York: Basic Books.
- Shaywitz, S. (2003). *Overcoming dyslexia*. New York: Alfred A. Knopf.
- Shaywitz, B.A., Shaywitz, S.E., Pugh, K.R., Mencl, W.E., Fulbright, R.K., Skudlarski, P., et al. (2002). Disruption of posterior brain systems for reading in children with developmental dyslexia. *Biological Psychiatry, 52*, 101-110.
- Shaywitz, S.E., Shaywitz, B.A., Fulbright, R.K., Skudlarski, P., Mencl, W.E., Constable, R.T., et al. (2003). Neural systems for compensation and persistence: Young adult outcome of childhood reading disability. *Biological Psychiatry, 54*, 25-33.
- Simos, P.G., Fletcher, J.M., Bergmen, E., Breier, J.I., Foorman, B.R., Castillo, E.M., Davis, R.N., Fitzgerald, M., Papanicolaou, AC. (2002). Dyslexia-specific brain activation profile becomes normal following successful remedial training. *Neurology, 23*; 58 (8).
- Snow, C.E., Burns, M., Griffin, P. (1998). *Preventing reading difficulties in young children*. National Academy of Sciences.
- Stanovich, K.E. (2000). *Progress in understanding reading: Scientific foundations and new frontiers*. New York: Guilford.
- Torgesen, J. K. (1998). Catch them before they fall: Identification and assessment to prevent reading failure in young children. *American Educator, 22*, 32-39.
- Torgesen, J. K., Foorman, B.R. and Wagner, R.K. (2007) *FCRR Technical Report #8 Dyslexia: A Brief for Educators, Parents and Legislators in Florida*. Florida Center for Reading Research. Retrieved from <https://files.eric.ed.gov/fulltext/ED542605.pdf>

- Uhry, J.K. (2011) Teaching phonemic awareness. In J.R. Birsh (Ed), *Multisensory teaching of basic language skills, 3rd Edition*. Baltimore: Paul H. Brookes.
- Yale Center for Dyslexia & Creativity. *Signs of Dyslexia*. Retrieved from <http://dyslexia.yale.edu/dyslexia/signs-of-dyslexia/>

Adolescent Literacy and Adolescent Reading Intervention

These two professional development courses provide an overview of adolescent literacy including what it is, why some older students have difficulty with reading and writing, and assessment model for screening for at-risk older students and diagnosing the causes, instructional suggestions for content literacy instruction across all content classrooms, and intervention instructions for students who have difficulty with reading.

The information and instruction resources presented are based on the research represented in the following:

- August, D. and T. Shanahan (Eds.) (2006). Executive summary from developing literacy in second-language learners: *Report of the National Literacy Panel on language-minority children and youth, 3–8*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Biancarosa, G., & Snow, C.E. (2004). "Reading Next: A Vision for Action and Research in Middle and High School Literacy". A report from the Carnegie Corporation of New York.
- 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.
- Carlisle, J.F. (2007). Fostering morphological processing, vocabulary development, and reading comprehension. In R.K. Wagner, A.E. Muse, & K.R. Tannenbaum (Eds.). *Vocabulary acquisition: Implications for reading comprehension*. New York: The Guilford Press.
- Cartwright, K.B. (2015). *Executive skills and reading comprehension*. New York: The Guilford Press.
- Chall, J.S. (1983.). *Stages of reading development*. New York: McGraw-Hill.
- Coleman, R., & Goldenberg, C. (2010). *What does research say about effective practices for ELLs?* Kappa Delta Pi Record, 46 (2).
- Dehaene, S. (2009). *Reading in the brain*. New York, Penguin Group.
- Eden, G.F. *Dyslexia and the brain*. International Dyslexia Society. Retrieved from <https://app.box.com/s/q2cjhwikwncohy3vmv747h04md6eevn>
- Eden, G.F. (2016). *Dyslexia and the brain*. YouTube video. Posted by Understood, Oct 14, 2016. Retrieved from <https://www.youtube.com/watch?v=QrF6m1mRsCQ>
- Eden, G.F., Olulade, O.A., Evans, T.M., Krafnic, A.J., & Alkire, D.R. (2019). *Developmental dyslexia*. Houston Branch of the International Dyslexia Association, 2019 Resource Directory.
- Gough, P.B., & Tunmer, W.E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education*, 7, 6-10. (The SIMPLE VIEW of reading)
- Graham, S., & Perin, D. (2007). *Writing next: Effective strategies to improve the writing of adolescents in middle and high schools – A report to Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Graham, S., and Hebert, M.A. (2010). *Writing to read: Evidence for how writing can improve reading. A Carnegie Corporation Time to Act Report*. Washington, DC: Alliance for Excellent Education.
- Heller, R., & Greenleaf, C.L. (2007). "Literacy Instruction in the Content Areas: Getting to the Core of Middle and High School Improvement." Alliance for Excellent Education. Available at http://www.all4ed.org/publication_material/reports/literacy_instruction_content_areas
- Hudson, N., Scheff, J., Tarsha, M., & Cutting, L.E. (2016). Reading comprehension and executive function: Neurobiological findings. *Perspectives on Language and Literacy, Spring 2016*.
- Hudson, R.F., High, L. Al Otaiba, S. (2007). Dyslexia and the brain: What does current research tell us? *The Reading Teacher*, 60(6), 506-515.

- Iruja, S. (2007) *What does research tell us about teaching reading to English language learners? The ELL Outlook*. Course Crafters. Retrieved from: <http://www.usc.edu/dept/education/CMMR/543/543IrujoResearchReadingELLS.pdf>
- 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 Practical Guide* (NCEE #2008-4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
- Katzir, T., Markovich, V., Tesler, E., & Shany, M. (2018). Self-regulation and reading comprehension: Self-perceptions, self-evaluations, and effective strategies for intervention. In L. Meltzer (Ed.). *Executive function in education: From theory to practice*. New York: The Guilford Press.
- Lyon, G.R., Shaywitz, S.e., & Shaywitz, B.A. (2003). Defining dyslexia, cormorbidity, teachers's' knowledge of language and reading. *Annals of Dyslexia*, 53, 1-14.
- Murray, C.S., Wexler, J., Vaughn, S., Roberts, G., Klingler-Tackett, K., Boardman A.G., Miller, D., Kosanovich, M. (2010). *Effective Instruction for Adolescent Struggling Readers: Professional Development Module – Second Edition*. Center on Instruction. RMC Research Corporation.
- National Institute for Literacy (2007). *What content-area teachers should know about adolescent literacy*. Washington, DC:National Institute of Child Health and Human Development.
- Scammacca, N.K., Roberts, G., Vaughn, S. (2013). A meta-analysis of interventions for struggling readers in grades 4-12: 1980-2011. *Journal of Learning Disabilities* 48 (4).
- Seidenberg, M. (2018). *Language at the speed of sight*. New York: Basic Books.
- Shaywitz, B.A., Shaywitz, S.E., Pugh, K.R., Mencl, W.E., Fulbright, R.K., Skudlarski, P. (2002). Disruption of posterior brain systems for reading in children with developmental dyslexia. *Biological Psychiatry*, 52, 101-110.
- Shaywitz, S. (2003). *Overcoming dyslexia*. New York: Alfred A. Knopf.
- Simos, P.G., Fletcher, J.M., Bergmen, E., Breier, J.I., Foorman, B.R., Castillo, E.M., Davis, R.N., Fitzgerald, M., Papanicolaou, AC. (2002). Dyslexia-specific brain activation profile becomes normal following successful remedial training. *Neurology*, 23; 58 (8).
- 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. (2007). *Academic literacy instruction for adolescents: A guidance document from the Center on Instruction*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Torgesen, J. K. (2006) *A comprehensive K-3 reading assessment plan: Guidance for school leaders*. Portsmouth, NH. RMC Research Corporation, Center on Instruction
- <https://www.fcrr.org/assessment/pdf/K-3%20Reading%20assessment.pdf>
- Vaughn, S., Wanzek, J., Murray, C. S., Roberts, G. (2012). *Intensive interventions for students struggling in reading and mathematics: A practice guide*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Wanzek, J., Vaughn, S., Scammacca, N.K., Metz, K., Murray, C.S., Roberts, G., & Danielson, L. (2013). Extensive reading interventions for studens with reading difficulties after Grade 3. *Review of Educational Research*, 82 (2).

Keys to Literacy Planning

Why is district and school wide literacy planning important?

In December of 2009, the Massachusetts DESE published “Guidelines for Developing an Effective District Literacy Action Plan” (Meltzer & Jackson, 2010). The guidelines note the following:

“We know that literacy is central to academic success in all content areas. Since a focus on improving literacy has been used successfully in many districts across the country as a lever for significant gains in student achievement, a strategic District Literacy Action Plan is one powerful way for a district to reach stated improvement goals. (p. 2)”

In the report released by the Carnegie Corporation of New York and the Alliance for Excellent Education, Biancarosa and Snow (2004) suggested 15 key elements that are indispensable to successful middle and high school literacy programs – one of these elements is the development of a comprehensive and coordinated literacy plan. Irvin, Meltzer & Dukes (2007) note that a school wide literacy action plan is an essential blueprint for improving student achievement.

A recent report, *Time to Act*, from the Carnegie Corporation (2010) addresses how to advance adolescent literacy, and recommends the following about literacy planning:

- Addressing literacy at the school level: Successful ‘beat-the-odds’ schools are distinguished by at least seven vital components, including strong instructional leadership that includes leaders working in partnership with teachers, literacy coaches and other skilled experts to ensure successful implementation of critical programs... A literacy leadership team is centrally engaged in designing, supporting and overseeing the school’s literacy work (p 36).
- Addressing literacy at the district level: The task of improving adolescent literacy would be substantially easier with appropriate support and guidance from districts. ... some actions that will help:
 - Align accountability systems to the goal of improved literacy, including reorganizing traditional district hiring, curriculum-setting, and finance practices.
 - Increase communication and contact between schools
 - Develop a coherent assessment system based on real-time data that maximizes the utility of information. The data can be used to enforce common expectations for students across schools.
 - Allocate resources in accordance with strategic literacy priorities.

The Keys to Literacy Planning model supports the development of literacy plans at both the school and district levels.

What is the best way to develop a literacy plan?

There is strong evidence that an effective literacy plan is one that has been developed by a team of people who represent the major stakeholders in the schools and district. In *Creating a Culture of Literacy* (2005), it is noted that the first thing a principal must do to improve literacy in a school is to organize a Literacy Leadership Team (LLT) composed of administrators, content teachers, resources teachers, literacy coaches, and other key stakeholders. The LLT develops a list of needs and suggestions for improvement – over time the leadership ability of the LLT will enable the building to develop a Literacy Improvement Action Plan.

McEwan (2001) reviews the research on the importance of building literacy leadership teams, and suggests that such a leadership team is essential for improving literacy skills. Teachers will be more committed to implementation when they are involved from the beginning in making important decisions about how to reach the goals. Shared decision making has also been shown to increase job satisfaction (Ashton & Webb, 1986), create ownership leading to a more positive attitude toward the organization (Beers, 1984), and engender a more professional environment within the school (Apelman, 1986).

When Keys to Literacy begins working with a school or district to develop a literacy plan, the first step is to identify a literacy planning team that represents all of the stakeholders (i.e., classroom teachers, specialists, administrators, parents and community members). The model emphasizes strong leadership, not just by the top administrators, but also shared leadership through sub-committee planning chairs. The planning process is collaborative and designed to foster teamwork.

The *Time to Act* report (2010) notes that the experience from the Reading First program (part of the No Child Left Behind Act) demonstrated that effective research-based instructional practices can be brought to scale. The report identifies five essential factors that have proven to be effective in reforming schools to promote a higher level of literacy:

- improved classroom instruction,
- rigorous assessment,
- carefully designed professional development,
- structured accountability, and
- increased and ongoing funding. (p. 17)

The report also suggests that “States can help to ensure a comprehensive approach to literacy improvement by requiring districts to create K-12 literacy plans. A good K-12 literacy plan would involve the district’s plan for professional development, materials, assessments, interventions, and all the other key components of quality literacy instruction.” (p.52)

The Massachusetts Department of Elementary and Secondary Education Guidelines for Developing and Effective District Literacy Action Plan (2010) include the following recommendations regarding what a strategic literacy plan is, and why it is important:

There is emerging literacy about the common characteristics of districts that successfully mobilize to improve student achievement. These characteristics stay constant regardless of size of district or student need. Successful districts put in place systems and processes for supporting change and continuous improvement. These systems and processes are comprehensive and strategic and include an intense focus on instruction; thoughtful, ongoing teacher professional development; the role of vision and communication in mobbing a whole district into continuous improvement; clarity and accountability related to staff roles and structures; and how data informed decision-making helps these districts initiate and keep their change efforts on track (Shannon & Bylsma, 2004), WestEd, 2002). (p. 2)

The guidelines propose the following critical components for effective district literacy initiatives:

- Key Practices
 - Systematic data use
 - K-12 standards-based curriculum
 - Tiered system of literacy instruction and interventions
 - Family and community involvement
- Key Supports
 - District structures
 - Professional development
 - Resource allocation
 - Policies and procedures

The Florida Department of Education currently mandates that school districts develop and revise on annual basis district literacy plans. The components that must be addressed in these plans include:

- District and school level leadership
- Professional development
- Elementary assessment, curriculum and instruction
- Middle school assessment, curriculum and instruction
- High school assessment, curriculum and instruction

The Keys to Literacy planning model is organized around the following essential planning components:

1. Leadership
2. Assessment planning to guide instruction
3. Instruction for all students
4. Intervention for struggling students
5. Flexible grouping and scheduling
6. Professional development
7. Resources (technology, personnel, funding, time)
8. Parents and community

The planning process is organized into stages. During the initiation stage the school/district forms a committee representative of the key stakeholders. This committee is provided professional development on literacy, tiered instruction, assessments and the components of the literacy planning model. This committee then works together to collect detailed data on current practices involving each of the 8 essential components during the self-assessment phase. After the data has been collected and evaluated for strengths, weaknesses, and critical needs, the committee transitions into the planning stage. At the planning stage, the committee develops measurable goals for the school/district to achieve that are based on the 8 essential components designed to support effective tiered literacy instruction. During this planning process, the committee also discusses the issue of sustainability and formulates goals and action steps to sustain the plan over many years (e.g., processes for modifying goals as needs change or they are achieved). Once consensus has been reached on the goals and action steps have been identified, the next stage is implementation. Implementation is an ongoing process with specific progress monitoring procedures in place for adherence to the plan and moving towards achievement of the goals.

References

- Aepelman, M. (1986). *Working with teachers: The advisory approach*. In K. Zumwalt, *Improving teaching*, (pp.115-129). Alexandria, VA: Association for Supervision and Curriculum Development.
- Ashton, P.T., & Webb, R.B. (1986). *Making a difference: Teacher's sense of efficacy and student achievement*. New York, Longman.
- Beers, D.E. (1984). *School-based management*. Paper presented at National Convention of Elementary School Principals, New Orleans, LA>.
- Biancarosa, G., & Snow, C.E., (2004). *Reading next – A vision for action and research in middle and high school literacy: A report from Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Irvin, J.L., Meltzer, J., & Dukes, M. (2007). *Taking action on adolescent literacy*. Alexandria, VA: ASCD.
- McEwan, E.K. (1998). *Seven steps to effective instructional leadership*. Thousand Oaks, CA: Corwin.
- McEwan, E.K., (2001). *Raising reading achievement in middle and high schools*. Thousand Oaks, CA: Corwin.
- Meltzer, J., & Jackson, D. (2010). *Guidelines for developing an effective district literacy action plan*. Malden, MA: Massachusetts Department of Elementary and Secondary Education and Public Consulting Group.
- National Association of Secondary School Principals, (2005). *Creating a culture of literacy*. Reston, VA: National Association of Secondary School Principals.
- Shannon, G.S., & Bylsma, P. (2004). *Characteristics of improved school districts: Themes from research*. Olympia, WA: Office of Superintendent of Public Instruction.
- Schmoker, M. (2006). *Results now: How we can achieve unprecedented improvements in teaching and learning*. Alexandria, VA: ACSD.
- WestEd (2002). *Improving districts: Systems that support learning*. San Francisco: WestEd.