



*Experts in Intervention
for Over 50 Years*



Research-Based Literacy Intervention

MCI (MAKING CONNECTIONS® INTERVENTION) **Kay Kovalevs and Alison Dewsbury, Program Authors**

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Introduction

MCI is a direct, systematic, highly interactive program for students who struggle with literacy in middle school and beyond. This comprehensive program incorporates the most current research findings on adolescent literacy to meet a wide range of student needs in reading comprehension (*MCI Comprehension*), writing (*MCI Writing*), and word study (*MCI Word Study*). To place students at the correct level of the program, to assess their specific skill needs, and to monitor their progress through the program, there is a comprehensive set of formative and summative assessments (*MCI Comprehension Assessment*). In addition, *MCI Pre- and Post-Tests: Placement and Progress-Monitoring Using The Lexile Framework® for Reading* provides placement advice for choosing program levels and establishing Response to Intervention tiers or groups. The pre- and post-test is key, too, when monitoring student progress. Finally, the *MCI Program Implementation Guide* includes school and classroom management information for implementing all components of the program listed above and described in greater detail below.

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The Needs of Struggling Adolescent Readers

Twenty-five years have passed since the widely publicized *A Nation at Risk* report (National Commission on Excellence in Education, 1983) called for educational improvements to meet the demands of our changing world. Yet today, some 6 million U.S. secondary students read significantly below grade level (Joftus & Maddox-Dolan, 2003). The most recent reports based on the federally-administered test, the 2007 National Assessment of Educational Progress (NAEP), find that there has not been a “significant change in the percentage of students at or above *Proficient* level” (Lee, Grigg, & Donahue, 2007, p. 3).

There is widespread recognition of the reading and literacy-related needs of middle school students, 70 percent of whom need some form of intervention. Eight million students in the United States between fourth grade and twelfth grade cannot read at grade level (Biancarosa & Snow, 2006). The 2007 federal *Condition of Education* report (National Center for Educational Statistics, 2007a) indicated that only 32 percent of eighth graders were at or above the *Proficient* level in reading (indicating solid academic achievement), and some 20 percent were below the *Basic* level (indicating serious difficulties). In addition, the U.S. Congress recently approved the Striving Readers Initiative, designed to address the needs of middle and high school students. Similarly, the Carnegie Corporation, a nonprofit agency with a long-standing history of educational philanthropy, has adopted a new program for older readers, *Advancing Literacy* (Henríquez, 2005).

Middle schools represent the last chance many students will have to succeed in learning to read (Joftus, 2002). Struggling readers often find that their content area teachers do not help them with frustrating reading and literacy tasks (Hall, 2005). As a result, they may avoid reading by trying to use alternative paths to learning (Hall, 2006), or, worse, they may take on a “learned helplessness” role when given reading assignments or give up on learning altogether (Brozo, 1991).



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Reading Next (Biancarosa & Snow, 2006), the national report on research-based ideas for the improvement of middle and secondary school literacy, makes fifteen recommendations to secondary schools, challenging them to re-examine their policies. Included in these recommendations are some that are discussed below and directly address the needs of struggling adolescent readers.

Technology

Reading Next calls for technology components used as instruction tools (p. 19). In recent years, with the increasing facility with and interest in digital media among adolescents and the availability of technology in the classroom, researchers have accumulated a substantial body of support for its use. Support for audio devices during reading (Balajthy, 2005; Balajthy, 2007), for example, has been shown to be effective with a wide variety of learners, including students with attentional difficulties (Hecker, Burns, Elkind, Elkind, & Katz, 2002) and struggling readers (Leong, 1995; Montali & Lewandowski, 1996; Wise & Olson, 1994). While the usefulness of audio support for beginning readers is apparent, research has also validated its use with older struggling readers (Elkind, 1998; Wattenberg, 2004).

It appears that audio support helps less proficient readers even more than better readers (Disseldorp & Chambers, 2002). In summer educational programs, Wolf (2007) used audio with struggling readers. The author found that students listening to audio while reading text improved in listening comprehension, phonemic awareness, and reading comprehension. Leong (1995) found that below-average readers' comprehension was improved by use of audio support. Wise and Olson (1994) worked specifically with students identified as disabled in reading and found that audio support improved their comprehension. Montali & Lewandowski (1996) found that struggling readers performed as well as average readers when text was presented in this bimodal condition of audio support with reading.

Manzo (2009), in her "Eye on Research" survey carried out for Education Week, noted that a rigorous research effort is now identifying

the "potential benefits of television viewing, particularly for literacy development." She offered two major conclusions about well-designed video. First, research indicates that such programming can teach distinct literacy skills, and second, that it can cultivate a love of reading. Manzo quoted one leading expert on media and education, describing the impact of video on literacy instruction: "Characters are engaging, and the kids are drawn into [lessons] by the characters and the stories, so you motivate them to learn...The research is so compelling."

Technology and MCI

MCI Audio Recordings allow students to listen to texts being read aloud as they follow along silently. Each selection in the *MCI Comprehension Student Book* can be either read silently or its reading can be supported by the recording on the CD.

MCI Video Introductions, another component of *MCI*, consist of short (approximately 3-minute) video clips. The clips, designed to be played at the beginning of each new unit of *MCI Comprehension*, introduce a team of young people who build background knowledge and vocabulary related to the unit topic and stimulate motivation for reading.

Levels of Text Difficulty and Diverse Texts

Reading Next calls for providing students with texts at a variety of reading levels, not just the level indicated by their grade placement. Researchers have found that much of the difficulty faced in the classroom by struggling readers has to do with the challenges created by text that is too difficult for them to read (Balajthy & Lipa, 2003). Gerdes (2001), for example, identified one cause of poor fluency as spending too much time reading text at frustration levels of text readability, requiring struggling readers to face insurmountable word recognition, vocabulary, and comprehension difficulties. Text readings that are appropriate for the average students in a given class are too challenging for struggling readers. "Learning cannot occur under these conditions" (Biancarosa & Snow, 2006, p. 18).

Middle school students learn best when functioning at tasks in which they have a high likelihood of



success (what some educators call the cutting edge of their learning, the Russian psychologist Lev Vygotsky (1978) called the *zone of proximal development*, and most reading educators call the *instructional level*). This success is achieved as teachers ensure either that learning tasks are developmentally appropriate or provide students with appropriate support (often called scaffolding) to achieve objectives that may be too challenging without that help.

Reading Next also calls for increased use of diverse kinds of texts, noting that reading tasks become significantly more complex in middle school. In elementary school, most reading material consists of stories, narrative text. As students move to middle school, they encounter literature requiring a greater sophistication in terms of analysis. In addition, students now find that their reading includes a much larger expository component. Reading of expository text demands background knowledge of the topics, and its organizational patterns are varied and challenging. Success in reading at this stage depends not merely on simple word identification and vocabulary, but on actually incorporating content of informational text into long-term memory. Pappas (2006), among others, has decried the absence of informational readings in much public school reading instruction.

The content area emphasis adheres to a major recommendation of *Reading Next*—that students learn effective principles of comprehension strategies in the context of learning content. The attention to social studies and science also responds to national awareness of needs in these areas. *The Nation's Report Card: U.S. History 2006* (National Center for Educational Statistics, 2007b), for example, reported encouraging minor improvements in the latest National Assessment of Educational Progress testing in social studies. But 82 percent of eighth grade students still test below the proficient level and 35 percent are not capable of even basic level functioning. *The Nation's Report Card: Science 2005* (National Center for Educational Statistics, 2006) reported that student performance in science learning had improved nationally at the elementary school level in recent years. But the National Assessment of Educational Progress had found no improvements

at the middle school level and minor declines in achievement at the high school level.

Levels of Text Difficulty, Diverse Texts, and MCI

The Student Books for *MCI Comprehension*, *MCI Writing*, and *MCI Word Study* help teachers avoid putting their struggling readers in situations where they fail with text that is above their instructional level. These texts and the *MCI Student Library* are written two to three grade levels below the average reading levels of middle school students, as measured by the Lexile Framework. However, since middle school struggling readers have the same concerns and interests as their age mates, text topics reflect that maturity.

In addition, the instructional plan for each unit in the Teacher's Editions encourages teachers to support or scaffold students by continuing to read aloud or along with those who find even lower readability material too challenging. *MCI Audio Recordings* of the Student Book texts in *MCI Comprehension* can also be used for that purpose.

When it comes to diverse texts, each unit of *MCI Comprehension* includes reading selections that vary across genres and content areas, emphasizing both narrative fiction and expository text genres. The content areas of English/language arts (with attention to poetic forms and other literature), science, and social studies are included and enhanced with maps, graphs, photographs, and diagrams. Whenever appropriate, real world formats such as graphic stories, news articles, Web pages, and e-mails are used. The *MCI Student Library* gives the same attention to text diversity; half of the books (18) are fiction and half (18) are nonfiction. Nine of the fiction titles are graphic novels.

Interest and Motivation

Number three of the fifteen major recommendations of *Reading Next* (2006) calls for greater emphasis on student motivation and interest, thereby establishing students as lifelong readers. Worthy et al. (2002) found dramatic success in inspiring reading when struggling readers were provided with reading materials that were written

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Giving students choices in their learning activities empowers them and improves their attitudes toward and interest in school-based activities. This is a particularly important issue in dealing with older struggling readers, such as those in middle schools (Kittle, 2007).

at appropriate readability levels and interesting to them.

In 2008, the Institute for Education Studies of the National Center for Educational Evaluation and Regional Assistance published *Improving Adolescent Literacy: Effective Classroom Intervention Practices*, funded by the U.S. Department of Education. This report surveyed practices for literacy teaching that were supported by research carried out with adolescents. The panel of authors provided five major sets of recommendations, one of which was to “increase student motivation and engagement in literacy learning” (Kamil et al., 2008, p. 26). The report noted that, while the terms motivation and engagement were often used synonymously, there were important differences in professional definition. Motivation refers to “the desire, reason, or predisposition to become involved in a task or activity,” and engagement refers to “the degree to which a student processes text deeply through the use of active strategies and thought processes and prior knowledge” (2008, p. 26). Students can be motivated to read a text, for example, but not be engaged because the text is inappropriately easy or difficult.

The *Improving Adolescent Literacy* report also calls for schools to emphasize the development of intrinsic motivation for reading. Lapp and Fisher (2009) have detailed how intrinsic motivation can drive increased reading when students choose books and have peer support to read, think, and share ideas about what they have read.

Graphic novel material is of high interest and allows readers to reflect on their own lives and gain insight into other people’s lives (Botzakis, 2008). Visual literacy skills maximized in graphic stories and comic strips assist literacy development and maintenance, as well as comprehension of text (McVicker, 2007).

Interest, Motivation, and MCI

MCI Comprehension provides thematic units that are high interest for middle school students, and *MCI Video Introductions* provide for initial motivation of students around those themes. Using adolescent actors, engaging characters, and animations in dramatizations, the videos promote involvement in the curriculum.

The titles of two units exemplify the interest level of the texts found within them: *Intriguing Investigations*, and *Going to Extremes*. In addition, text illustrations are age-appropriately eye-catching. Even more alluring are the graphic stories and novels found in the *MCI Comprehension Student Books* (2 stories per level) and *MCI Student Library* (9 graphic novels out of a total of 36 books).

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Finally, the all-important social/collaborative needs of adolescent students are addressed in *MCI* through the many cooperative-learning requirements and suggestions found in the Teacher’s Editions for *MCI Comprehension*, *MCI Word Study*, and *MCI Writing*.

Differentiation and Response to Intervention (RTI)

Response to Intervention (RTI) is a relatively new approach to understanding how schools should differentiate instruction to meet the needs of all students. A key theme in the research and professional literature about teaching reading and literacy to adolescents is the impact of individual differences on teachers’ efforts to provide effective instruction. Position papers on adolescent literacy authorized by the International Reading Association emphasize this point:

- “Adolescents deserve classrooms that respect individuals’ differences...Adolescents deserve more than a centralized, one-size-fits all, approach to literacy” (Moore et al., 2000, p. 8).



- “Young adolescents arrive at middle school with a wide range of individual, cultural, ethnic, and linguistic differences that have a significant impact on their reading performance” (International Reading Association & National Middle School Association, 2001, p. 2).

A commitment to differentiated instruction and to understanding the individual needs of students lies at the heart of excellent teaching. Walker’s (2004) model of reflective teaching of reading and literacy, for example, places *sensitivity to individual differences* and *interaction with students as individual people* as the two highest roles of the reflective teacher. It is the reflective teacher who will employ Response to Intervention (RTI) in her instruction.

Teachers of students with language-based learning disabilities have had to be that kind of reflective educator, one who recognizes the importance of individual differences. In the past they paid special attention to students who “should be” doing better in school, based on the difference of what those students have achieved and what their intelligence suggests they should achieve. However, in 2004, the reauthorization of the Individuals with Disabilities Education Act (IDEA) removed the federal requirement to use the aptitude/achievement discrepancy in order to identify students with learning disabilities and moved their attention to the kind of instruction students receive as well as when and where they receive it.

Instead of waiting for students to fail on high-stakes tests before providing services, IDEA encourages the use of RTI and mandates that schools provide a more intensive level of instruction when a student’s response to research-based general classroom instruction is unsatisfactory. As such, RTI is a more sensible plan than past policies for providing prompt help for struggling learners and special education students (Gersten and Dimino, 2006).

RTI is often conceptualized as a three-tier model (Fuchs, Fuchs, & Vaughn, 2008; Shores & Bender, 2007).

Tier 1: Primary Prevention involves research based reading/literacy instruction that is provided to the entire class.

Tier 2: Supplemental Instruction is provided to students who fail to progress in reading achievement in Tier 1. For these students, the federal government’s report *Improving Adolescent Literacy* (Kamil et al., 2008) recommends “intensive supplemental interventions in addition to the reading support they might receive in their regular classrooms” (p. 32). Tier 2 instruction is generally supplemental to Tier 1 classroom instruction and is provided in small groups, often within the classroom or a resource room. The *Improving Adolescent Literacy* report advises, “for students who perform below the basic level, the panel recommends intensive supplemental interventions in addition to the reading support they might receive in their regular classrooms” (p. 32). According to Vaughn and Roberts (2007), as many as 20 to 30 percent of students will require supplemental Tier 2 instruction to prevent reading difficulties.

Tier 3: Intensive Instruction is for students who are not demonstrating progress in Tier 2. These interventions involve instruction that is more intensive, often in a one-on-one instructional situation in a resource room setting. Bender and Shores (2007) estimate that 5 to 6 percent of students will need this more intensive Tier 3 instruction.

Differentiation, RTI, and MCI

MCI guides teachers toward a reflective role as an instructor of individuals. Lessons are designed to provide teachers with many opportunities to observe individual students in action and use what they observe to adapt instruction to students’ individual needs. In *MCI Comprehension*, teachers begin lessons with introductory activities designed to help them assess individual student needs. In a unit introduction on the topic of polar ecosystems, for example, teachers begin their lesson by engaging students with a discussion of background concepts, selection vocabulary, and predictions about the text. These preparations allow teachers to identify students’ challenges and strengths.

In addition, the Teacher’s Editions for *MCI Comprehension* include Extra Support sections that offer suggestions to meet individual needs

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Duke and Pearson (2002), in an extensive examination of the characteristics of good readers, put “Good readers are active readers” at the top of their list.

as they become apparent. When students find a text’s length daunting, an Extra Support suggestion recommends having students pause halfway through the text to discuss, summarize, or answer a quick question before moving on to the second half. Also, each lesson in the Teacher’s Edition has guidelines for support of English Language Learners. In one lesson, for example, ideas are provided for helping ELL students understand idiomatic expressions commonly used in informal writing such as e-mails. Many activities give alternatives, beginning with the phrase “Depending on the needs of your students.” These activities provide for different levels of support, somewhere between “regular instruction” and “extra support.” Moreover, during collaborative learning activities, teachers monitor student discussions and intervene as appropriate to support learning.

MCI serves schools as a comprehensive, integrated program, but its components can also be used separately to provide differentiation of instruction. Basic components of the program can be used in Tier 1 middle school classrooms as tools for differentiating instruction. Schools may choose to use the central program elements to provide the supplemental reading and literacy instruction necessary for Tier 2 students.

Full use of all *MCI* components allows for implementation at Tier 3, as well. Underlying *MCI* instruction is a comprehensive assessment system that provides systematic monitoring of instruction, including both formative and summative assessments for each student. The 2002 report of the President’s Commission on Excellence in Special Education recommended close monitoring of student progress and a central component of the funded RTI model is a system of ongoing, recorded assessment that provides extensive monitoring of student progress.

The Literacy Curriculum Comprehension

Reading Next called comprehension “the core of reading” (Biancarosa & Snow, 2006). Balajthy & Lipa (2003) noted that comprehension is almost always a difficulty for struggling readers. Since

the early days of cognitive studies in the fields of psychology and education, researchers have studied comprehension from a wide variety of perspectives. In the 1970s and 1980s, researchers’ understanding of comprehension began to coalesce to form a conceptualization that emphasized active involvement and constructing meaning:

- Comprehension is not a passive, inactive, simply receptive process in which something “happens to” readers. Instead, readers actively seek out meaning in an engaged, purposeful manner.
- Comprehension is not primarily about the text or the author, a simple process of selecting, understanding, and retaining information. Instead, readers construct meaning; that is, they use their reading abilities and their knowledge of the world to create their own interpretive frameworks in order to comprehend text.

Harry Singer emphasized the importance of the dynamic interaction between the reader and the text in his concept of “active comprehension” (1978). Singer’s work anticipated the crucial realization about comprehension that has dominated theory and research for over 25 years: Comprehension is an engaged, strategic process in which the reader actively seeks out meaning. Duke and Pearson (2002), in an extensive examination of the characteristics of good readers, put “Good readers are active readers” at the top of their list.

By the 1990s, this realization had become established in researchers’ understanding of reading and literacy. Textbooks in college teacher education courses had such titles as *Literacy: Helping Children Construct Meaning* (now in its sixth edition; Cooper & Kiger, 2005). Comprehension had become understood as a process of constructing meaning by the complex coordination of a variety of processes, including word reading, vocabulary knowledge, fluency, and knowledge of the world (Klingner, Vaughn, & Boardman, 2007).

With comprehension redefined as a purposeful, strategic process, researchers began to identify and assess a variety of comprehension strategies,



procedures that guide and support readers. By 2000, the National Reading Panel's comprehensive federally funded survey of the research on comprehension identified some 453 studies on comprehension strategies. The panel used a meta-analytic procedure to analyze the best designed of those studies and concluded, "When readers are given cognitive strategy instruction, they make significant gains on measures of reading comprehension over students trained with conventional instruction procedures" (p. 4-40).

The need for effective strategy instruction is particularly important for struggling readers (Smolkin & Donovan, 2002). As federal agencies began to increase their attention to the needs of older readers, attention to the need for well-designed comprehension strategy instruction became more apparent. In *Reading Next*, Biancarosa and Snow (2006) recommended direct, explicit comprehension instruction, "including summarizing, keeping track of one's own understanding, and a host of other practices" (p. 4). The eight key strategies identified by the National Reading Panel are described as follows:

Comprehension monitoring is related to the general concept of metacognition, or metacognitive awareness. It involves the reader's recognition of success and failure in gaining meaning from text. Researchers have long known that younger and less able readers have poor comprehension monitoring ability (Markman, 1979; Owings et al., 1980). They do not overtly recognize their failures to understand and thus do not carry out fix-up strategies (such as rereading or asking a teacher for an explanation) when comprehension fails.

The National Reading Panel's survey of the research literature found 14 studies of comprehension monitoring, each of which indicated positive effects for instruction. The panel concluded that children can be taught to "monitor their comprehension, become aware of when and where they are having difficulty, and learn procedures to assist them in overcoming the problem" (p. 4-71).

Cooperative learning, sometimes called collaborative learning, involves students working together in pairs or small groups on learning

tasks. The National Reading Panel's survey of the research literature found ten studies that showed positive effects for the use of cooperative learning in improving reading ability. "Having peers instruct or interact over the use of reading strategies leads to an increase in the learning of the strategies, promotes intellectual discussion, and increases reading comprehension" (National Reading Panel, p. 4-45). The use of text-based collaborative learning was also one of the major recommendations arising from *Reading Next* (Biancarosa & Snow, 2006). In their review of research on secondary reading curricula, Slavin, Cheung, Groff, and Lake (2008) found that "most of the programs with good evidence of effectiveness have cooperative learning at their core" (p. 309).

Graphic organizers are diagrammatic presentations of text concepts. They are designed in part to activate readers' prior knowledge and organize that information and in part to help readers better comprehend and retain text concepts. They have been used in a wide variety of ways to improve comprehension.

In a 1990 study, for example, Weisberg and Balajthy demonstrated that intermediate grade struggling readers often find it impossible to construct good summaries even after class discussion of a text reading. But when an intermediary graphic organizer of the ideas in the text was created, the struggling readers were able to use the organizer to write effective summaries.

The National Reading Panel's survey of the research literature found 11 studies that showed positive effects for use of graphic organizers. These diagrams appear to primarily improve readers' memory and retention for material being read. The strategy was strongly validated for middle school students.

Ermis (2008), Trabasso and Bouchard (2002), and Nesbit & Adesope (2006) carried out more recent reviews of the literature on use of graphic organizers, the latter involving some 55 studies of students fourth grade and up. Their reviews confirmed the National Reading Panel's findings that this strategy helps students both understand and remember text content.

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Use of story structure (with fiction)/text structure (with nonfiction) involves the reader's understanding of the basic and common organization patterns used in prose. The use of story/text structure allows the reader to develop well-organized understanding and memory for the content of stories and articles.

The National Reading Panel's survey of the research literature found 17 studies that showed positive effects for study of story structure. The panel found strongest effects for this strategy when it was used with struggling readers whose abilities were below grade level. All studies surveyed that were carried out with struggling readers demonstrated positive results.

Researchers have continued to recommend the positive results found in the teaching of story structure. Struggling readers should be actively engaged in identifying structural elements of stories to improve recall (Scharer, Lehman, & Peters, 2001).

Question answering is an important way for the teacher to help students recall what they have read, to connect information gleaned from various parts of the text, to make judgments, and to think beyond the text to develop critical and creative thinking. Questioning helps students focus on the important information in the text (Balajthy & Lipa, 2003). The National Reading Panel's survey of the research literature found 17 studies that showed positive effects for question answering, in which teachers used questions for guiding and monitoring readers' comprehension.

Question generation involves readers in raising their own questions about what they are reading. It has long played a central role in a variety of specific teaching strategies designed to enhance comprehension. For instance, the Q step in the popular study strategy SQ3R (Robinson, 1970) is the *Question* step, in which readers develop questions of their own to set a purpose for reading. Question generation is also a component of other research-based strategies, such as QARs (Raphael, 1986) and ITT (Balajthy, 1986).

The National Reading Panel's (2000) survey of the research literature found 27 studies that showed

very positive effects for question generation, the greatest support for any single strategy. In addition, the panel noted that the strategy was heavily supported as effective at the middle school level.

Since the National Reading Panel report, research on student-generated questioning has continued to support its use and expand the field's understanding of its contribution to reading. For example, Taboada and Guthrie (2006) found positive effects in having students create their own questions about text.

Summarization

The Literacy Dictionary (Harris & Hodges, 1995) defines a summary as "a brief statement that contains the essential ideas of a longer passage or selection" (p. 147). The research work of Ann Brown helped increase educators' awareness that summarizing was a complex task that is surprisingly challenging even to older readers (Brown & Day, 1983; Weisberg & Balajthy, 1990). A good summary involves the identification of the major ideas in a text and their differentiation from less important or irrelevant ideas.

The National Reading Panel's survey of the research literature found 18 studies that showed positive effects for writing summaries in response to reading and that the strategy also improved retention of information.

Multiple strategies have a long history in the teaching of reading. The popular SQ3R method (Robinson, 1970), for example, represented a 5-step sequence designed to promote retention: Survey, Question, Read, Recite, and Review. Palincsar and Brown's (1985) reciprocal teaching involved a 4-step sequence of strategies, summarizing, question generation, clarifying, and predicting.

The National Reading Panel's survey of the research literature found 27 studies that showed positive effects for the use of multiple strategies in reading comprehension instruction. The results were most powerful when used with struggling readers and most consistently positive when used with middle school readers.

The authors of the National Reading Panel report



noted that current research had largely moved away from attention to single-strategy instruction in favor of attention to teaching of multiple strategies. They concluded: “Multiple strategy instruction...provides a natural basis on which teachers and readers can interact over texts. The research literature developed from early studies of isolated strategies then moved to the use of strategies in combination” (p. 4-52).

Comprehension and MCI Comprehension

Each *MCI Comprehension* lesson provides direct and explicit instruction and practice in the use of a wide variety of comprehension strategies. *MCI Comprehension* includes regular attention to the development of the **comprehension monitoring strategy**. For example, the Teacher’s Edition suggests appropriate points in a lesson in which to carry out a Think Aloud, a meta-cognitive development activity in which proficient readers talk aloud about their reading/thinking processes in order to model fluent comprehension to less proficient readers. Students are also regularly instructed to pay attention to their understanding of the text, marking the text by circling words, phrases, and sentences where confusion occurs and by underlining skill-relevant passages. *MCI Comprehension* helps to develop reflective readers who are engaged in decision-making about strategy use.

Students regularly engage in **cooperative learning** as part of *MCI Comprehension* lessons. In all lessons, for example, students work in pairs and small groups to discuss their comprehension and vocabulary confusions in the readings and to clarify their learning. Other cooperative work may include creating a graphic organizer chart, summarizing the text, and participating in the collaborative activity.

Using and creating **graphic organizers** is an integral part of *MCI Comprehension* lessons. In the Practice the Skills section that follows all texts, graphic organizers are part of the response to the text. Teacher direction for these organizers is found in the Teacher’s Edition and is especially helpful for Extra Support or ELL instruction. In addition, students often work collaboratively to

create their own graphic organizers based on information from the text.

Attention to **story/text structure** is found in every *MCI Comprehension* lesson in two Teacher’s Edition sections called Genre and Structure and Preview Text Features. Students learn how to identify the unique features that distinguish, for example, realistic from science fiction, fiction from nonfiction, and caption and sidebar from running text.

Question answering is an important way for *MCI Comprehension* students to recall what they have read, to connect information gleaned from various parts of the text, to make judgments, and to think beyond the text to develop critical and creative thinking. Questioning helps them focus on the important information in the text and maintain engagement. For example, texts are introduced by focus questions highlighted and boxed at the top of the reading’s first page. In a story in which students read sample e-mails from girls who have just moved to new communities, this focus question is posed: “What do these girls from different backgrounds have in common?” Teachers also engage students by providing questions before, during, and after reading. These questions might, for example, direct student attention to the context of an unfamiliar vocabulary word, ask students to predict content and direction of the stories, or have students do more thinking about specific applications of the day’s strategy objective.

The Practice the Skills section of the Student Books includes opportunities for students to answer post-reading questions similar to those found in secondary content-area textbooks. After reading about the explorers Scott and Amundsen, for example, students are asked questions, most of which reinforce the direct and explicit teaching of the target skill, compare-and-contrast. Questions are posed at a variety of question-answer relationship (QAR) comprehension levels: the literal, “Right there” level (“What three things did...?”), the interpretive, “Think and search” level (“Why did...?”), and the applied, “On your own” level (“What do you think is...?”). Attention to varying levels of questioning, as in the QAR strategy, has received a great deal of research support, as it

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The importance of integrating reading and writing as interrelated tools for learning is now well established. One of the major recommendations of *Reading Next* is for increased intensity in writing instruction (Biancarosa & Snow, 2006).

encourages students to think through the readings comprehensively (Raphael, 1986).

Question generating is a key strategy in the instructional plan for *MCI Comprehension*. In the section of the Teacher's Edition titled Comprehension Monitoring/Question Generating, students are directed to mark the text for meaning and skills, circling the words, phrases, and sentences that they don't understand, and then to ask questions about these points of confusion in small, collaborative groups that are monitored by the teacher.

MCI Comprehension weaves **summarization** into every lesson by leading students to underline key ideas in the text and then later work as a team to organize the underlined information, which is then used to write a group paragraph summary of the reading or to retell it.

The *MCI Student Library* emphasizes a **multiple strategies** approach to reading comprehension. The Teacher's Editions for *MCI Comprehension* include instruction for helping students employ multiple strategies as they read the books independently.

Writing

Only 17 percent of teenagers enjoy school writing (Lenhart et al., 2008). The *Improving Adolescent Literacy* report noted that motivation to read and write declines as students move from elementary to middle school, most dramatically among students who are struggling with reading (Kamil et al., 2008). The National Commission on Writing for America's Families (2004) surveyed American corporations and government agencies and found that, as is commonly thought, good writing skills are crucial to both obtaining jobs and advancing in them, now more than ever to meet the demands of today's information technology-based job market (Levy & Murnane, 2004).

Writing has never been more important. The personal computer and Internet have made available means of expression that were unimaginable just a few years ago. Writing has become an essential tool for everyone to share and participate, a view that is shared by the 86 percent of American teenagers

who believe that writing well is important to success in life (Lenhart et al., 2008).

And yet, writing has never been more complex, in two important ways. First, the ever-changing technology landscapes in which our students communicate through writing (and, increasingly, through writing with a combination of other media, such as pictures and videos) present them with challenges (Bromley, 2008). Second, our research-based understanding of writing continues to demonstrate the cognitive (Torrance & Galbraith, 2006) and sociocultural (Prior, 2006) complexities of the process.

The Carnegie Foundation's *Writing Next* report on improving the writing of middle and high school students (Graham & Perin, 2007) identified "a writing proficiency crisis" among today's young people. The federally sponsored Nation's Report Card on writing (Salahu-Din, Persky, & Miller, 2007) identified about 65 percent of U.S. eighth and twelfth grade students as low-achieving writers.

The Reading-Writing Connection

The importance of integrating reading and writing as interrelated tools for learning is now well established. One of the major recommendations of *Reading Next* is for increased intensity in writing instruction (Biancarosa & Snow, 2006). Explicit teaching of different kinds of text structures improves both comprehension and composition of those structures (Gersten, Fuchs, Williams, & Baker, 2001). The value of literary genre study to writing has been strongly supported by Donovan and Smolkin's (2006) recent review of the research on this topic.

The use of good models in varied genre is a research-based method advocated by *Writing Next* (Graham & Perin, 2007): "Students are encouraged to analyze these examples and to emulate the critical elements, patterns and forms embodied in the models in their own writing" (p. 20).

Students find that motivation and inspiration to write arise from teachers using a variety of genres. "When we asked the teens in our focus groups to identify a piece of writing that made them very proud, they generated a diverse list of



examples” from many different genres (Lenhart et al., 2008, p. 53).

Writing Skills and Strategies

The first of the 11 research-based recommendations for improving adolescent writing provided by the Carnegie Foundation’s *Writing Next* report (Graham & Perin, 2007) is the use of writing strategies: “Teaching adolescents strategies for planning, revising, and editing has shown a dramatic effect on the quality of students’ writing” (p. 15). This meta-analysis found that results for low-performing students were particularly powerful. The average effect size for such students was 1.02, high in the range of a “strong” effect size.

Writing in the Content Areas

Hidi and Boscolo’s (2006) survey of research on motivation to write found that the depth of content area knowledge contributes to motivation to write in that content area, and greater motivation results in greater quality of writing. If a student knows about the Arctic and Antarctica from readings in a unit in the comprehension texts, he or she will be more motivated to write about that topic.

One of the 11 key recommendations of *Writing Next* (Graham & Perin, 2007) is that writing is best learned in the context of content learning. This report found that 75 percent of the writing-to-learn research studies showed positive effects on writing achievement.

The Writing Process

In the 1960s, researchers in the field of writing began to study how writers compose. Over the next 20 years, scholars (Lucy Calkins, Donald Graves, and others) developed a new curriculum for writing that came to be known as the writing process. They described the process of composing as moving, sometimes forward and sometimes back, through planning, drafting, revising, editing, and publishing. Flower and Hayes’ (1981) early work provided a substantial theory and research base for use of this writing process model. The use of its five major components continues to be substantiated in more recent research reviews of the cognitive implications

of writing process (McCutcheon, 2006). Peer support and teacher guidance during composing also became integral parts of this writing process approach (Yancey, 2009).

In a comprehensive review of research on writing process approaches, Pritchard and Honeycutt (2006) concluded that “studies of the impact of using the process approach on student achievement indicated mainly positive effects” (p. 282). *Writing Next* (Graham & Perin, 2007) also found the writing process to be an effective approach to improving students’ writing.

Writing and MCI

Two of the *MCI* components have writing instruction and/or activities. *MCI Comprehension* includes attention to strategies that simultaneously improve reading comprehension and writing ability. For example, summarization is one of the eight *MCI Comprehension* focus strategies. Summarization also is a powerful strategy for writing improvement (Graham and Perin, 2007). In every lesson in *MCI Comprehension* students demonstrate understanding of the summarization strategy as they work with their teacher and peers to write a summary of the text they have read. In addition, *MCI Comprehension Practice the Skill* pages invite students to respond to their reading with short writings that encourage personalization of the text. For example, after a reading about two girls who had recently moved to new schools in Alaska, a Writing question asks students, “Which of the girls do you think will be happier in her new school? Explain why you think so.”

MCI Writing, the second component, is a companion to *MCI Comprehension* but can be used as a stand-alone writing development program. Teachers using *MCI Comprehension* will find that each unit’s skill and one genre represented in a text in that unit has a coordinated lesson in *MCI Writing*. Writing process and text structuring strategies are taught in the context of the skill and the genre.

The organization of each *MCI Writing* lesson is based on the five-step writing process model. First, though, students learn the features of the

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target genre. Then they find those features in a sample piece of student writing that serves as the genre model. Then comes the first step of the writing process, planning. Students use a graphic organizer to plan, and attention in each of the six lessons per level is drawn to a different writing trait: Ideas, Organization, Voice, Word Choice, Sentence Fluency, and Conventions. This planning stage often ties in with the corresponding *MCI Comprehension* lesson by using the same kind of graphic organizer to help students organize their plans.

Then the lessons move on to drafting, in which students get their ideas down on paper. The third and fourth steps involve revising their drafts and then editing them. This editing step includes a Grammar, Usage and Mechanics lesson. Finally, students publish; that is, they create a final draft of their writings, adding it to a portfolio collection.

Collaborative activities are included in a variety of ways, especially at the planning, revising, and editing steps. Checklists and/or rubrics to structure student thinking are included for revising, peer review, and editing. Ideas for extra support give teachers help in thinking through how to differentiate instruction. As a follow-up activity to student engagement in the writing process, students are taught how to apply their learning in a test situation.

Word Study

Words can be analyzed both for their pronunciation (decoding) and their meanings (vocabulary). Struggling readers may have difficulty with one or both kinds of analyses.

Phonics

When students have difficulty with decoding, it has a direct impact on their comprehension, not only because they miss many key words in a passage, but because labored decoding affects fluency. Many struggling readers at the middle school level have poor reading fluency, the “ability to read accurately, quickly, effortlessly, with appropriate expression and meaning” (Griffith & Rasinski, 2003, p. 86) because of poor word recognition abilities (Jenkins et al., 2003). They lack the ability

to quickly recognize unfamiliar words in text, to make use of grapheme-phoneme relationships (phonics), word parts (such as syllables, prefixes, root words, and suffixes), and context clues. As a result, their attention and effort during reading is directed to word-level analysis, decreasing focus on comprehension and leaving them with a poor understanding of what they have just read. Fluency is a key factor in comprehension (Hoffman, 2003; Jenkins et al., 2003).

Systematic and direct instruction in phonics “is an essential component of a reading program” (Nichols, Rupley, & Rasinski, 2009, p. 2). Research supports sequenced, systematic, direct, and explicit instruction in phonics (National Reading Panel, 2000). Centering on the multidimensional aspects of word recognition—sound identification, sound blending, decoding strategies, syllable patterns, and meaningful chunks—is recommended to help students master the “complex processes and skills needed to produce the seemingly effortless performance of a fluent reader” (Hudson et al., 2009, p. 4). Moreover, the general importance of syllable skills is well established (Hiebert, 2005), as well as its importance to older students (Archer, Gleason, & Vachon, 2003; Bhattachary & Ehri, 2004). These syllable skills are important for struggling middle school readers (Diliberto et al., 2009) and in content area readings (McFeely, 1974).

Vocabulary

Researchers have long understood that vocabulary knowledge is essential to the successful comprehension of text. It accounts for as much as 70 percent of comprehension ability (Davis, 1971; Nagy & Scott, 2000; Pressley, 2002). In addition, Blachowicz, Fisher, Ogle, and Watts-Taffe concluded that vocabulary knowledge plays a critical role in the school performance of English-language learners (2006).

In the 1970s and 1980s, research on cognitive psychology and schema theory underscored the important role that vocabulary plays in successful reading, and it gave important insights into how it could be taught. Carver’s (2000) cognitive Reading Model of reading, for example, posited that Verbal Knowledge Level is one of the major aspects of



reading development that can most effectively be improved through instruction. Carver described Verbal Knowledge as involving the reader's general knowledge of the world, and he observed that vocabulary knowledge is a key component of this general knowledge. The more students learn of their world, the larger will be their vocabulary and the greater will be their improvement in reading ability.

Research on the importance of vocabulary to comprehension development has continued to enrich the reading field's understanding of the problems facing struggling readers. Snowling (2002) suggested that readers who struggle with comprehension difficulties often exhibit satisfactory early progress and develop good decoding abilities. But as they reach higher grades in which the vocabulary demands in content area reading present challenges, their poor vocabulary-related comprehension skills increasingly compromise further development, and they spiral down into increasing failure.

In addition to establishing the theory-based importance of vocabulary development, research has also helped teachers in a practical way. Findings indicate that simply teaching lists of words does not succeed in improving achievement. Vocabulary growth comes from helping students make connections between words used to describe their world. William Nagy's research (Nagy & Scott, 2000) played a key role in helping the reading field draw these conclusions. He opposed the traditional teaching of vocabulary, with its emphasis on looking isolated words up in a dictionary and on weekly tests of randomly chosen vocabulary words. Instead, he suggested that traditional approaches to vocabulary instruction be modified in three ways:

1. Integration of instructed words with other knowledge;
2. Repetition so that readers know what the word means and have had practice so its meaning can be accessed readily;
3. Meaningful use in learning the word by having students actively involved in the process.

Teachers can also help students be alert to the possibilities of using word parts as clues to meaning (Nagy & Scott, 2000). Explicit and systematic instruction in structural analysis leads to improvement in general vocabulary (Baumann, 2005; Baumann et al., 2003) and in ability to infer meanings of new words composed of those elements (Blachowicz, Fisher, Ogle, and Watts-Taffe, 2006). The study of meaningful word parts (prefixes, suffixes, root words) is called structural analysis. The meanings of 60 percent of English words can be inferred from structural analysis (Bromley, 2007). Structural analysis ability contributes to middle school students' reading ability (Nagy, Berninger, & Abbott (2006). At the middle school level, reading to learn plays an increasingly important role, and words that contain structural analysis clues to meaning occur twice as often in expository text as in narrative (Ebbers, 2008).

In their survey of research on vocabulary instruction, Blachowicz, Fisher, Ogle, and Watts-Taffe (2006) found that teaching students to use context clues helped to develop their independent strategies for identifying new words. Both Blachowicz and Zabroske (1990) and Buikema and Graves (1993) found that explicit teaching of context analysis improved students' metacognitive awareness during reading. Nagy and Scott (2000) found this metacognitive ability, the ability to reflect on and manipulate vocabulary, to be an important part of vocabulary knowledge.

Word Study and MCI

In *MCI Comprehension*, words unfamiliar in pronunciation or meaning are strategically approached as follows: the uses of context clues, dictionaries, and word parts (phonemes or affixes) are modeled for students in every lesson. Then, as students engage in Comprehension Monitoring, they are encouraged to Mark for Meaning by circling unknown words and difficult phrases and sentences, and later, during Collaborative Learning, to discuss the words in the manner modeled by their teacher.

Research on the importance of vocabulary to comprehension development has continued to enrich the reading field's understanding of the problems facing struggling readers.



MCI Word Study provides intensive phonics intervention in key concepts critical to middle school struggling readers: vowel sounds and syllable patterns.

When students need more word work than what is provided in *MCI Comprehension*, *MCI Word Study* provides it. From sequenced phonics lessons that lead them to examine spelling patterns at the one-syllable word level (Part A), they move on to applying those patterns to multisyllabic words (Part B). From there, lessons move on to helping students apply what they learned in Parts A and B to meaning vocabulary (Part C), which includes the study of meaningful word parts and the use of context in aiding word identification. *MCI Word Study* lessons are linked to lesson content in *MCI Comprehension*, but the program may also be used as a stand-alone program.

MCI Word Study provides intensive phonics intervention in key concepts critical to middle school struggling readers: vowel sounds and syllable patterns. For example, in one lesson the closed syllable pattern VC is taught in conjunction with syllables/words like *ex* and *tend* (Part A). Then syllabication pattern VC/CV is taught (Part B) so that students can divide a word like *ex/tend*. Finally, in Part C, student attention is drawn to the word *extends*, which they now know how to divide into syllables, examining it for meaningful parts and the context in which it is found in one of their *MCI Comprehension* texts. Vocabulary knowledge is furthered as the prefix *ex* (which means “out”) is studied, first in *extends* and then in other words, such as *exhale*, *exterior*, and *extract*.

Assessment

Reading assessment allows us to evaluate and understand the strengths and needs of each student. Two of the fifteen instructional improvements recommended by the *Reading Next* report focus on assessment, one on formative and one on summative (Biancarosa and Snow, 2004). “Formative assessment provides information that helps us develop instruction that in turn provides experiences that further influence students’ development...In contrast, summative assessment measures student achievement in relation to reading curriculum goals and district or state learning standards.” (Afflerback, 2007, p. 49)

Formative assessment plays a major role, following the *Improving Adolescent Literacy* report’s call

for “formative assessments that allow students to make their thinking visible and that provide evidence of the problem-solving and critical-thinking strategies students use to comprehend and construct meaning” (Kamil et al., 2008, p. 29). *Reading Next* recommends ongoing formative assessment of students, carried out on a daily basis, for improving middle and high school literacy (Biancarosa & Snow, 2004). Summative measures are especially important in fulfilling the Individuals with Disabilities Improvement Act (IDEA) of 2004 and its call for use of a process that determines if the child responds to scientific research-based intervention as part of the evaluation procedures for assessing children who may need special instruction for a specific learning disability.

Recent advances in understanding of educational process have highlighted the importance of assessment to the achievement of students (Gersten et al., 2008). Part of this new understanding involves the recognition that assessment is only useful if it is used to plan instruction and to revise those plans when the need arises. “It is the action around assessment—the discussion, meetings, revisions, arguments, and opportunities to continually create new directions for teaching, learning, curriculum, and assessment—that ultimately have consequences. The ‘things’ of assessment are essentially useful as dynamic supports for reflection and action, rather than as static products with value in and of themselves” (Darling-Hammond, Aness, & Falk, 1995, p. 18).

Since assessment plays such an important role in teaching and learning, educators have come to recognize several important ways to implement effective assessment systems. An important aspect of an effective assessment system is the provision of multiple measures, a diverse set of assessments designed to provide comprehensive feedback as called for, for example, by the IDEA (2004) guidelines to “use a variety of assessment tools and strategies to gather relevant functional, developmental, and academic information” (614, b, 2). Gersten et al. (2008) also found research support for suggesting that RTI Tier 2 students be monitored regularly. “Formative assessments are



specifically designed to inform instruction on a very frequent basis so that adjustments in instruction can be made to ensure that students are on pace to reach mastery targets” (Biancarosa & Snow, 2004, p. 19).

Assessment and MCI

MCI provides assessment tools in several components: *MCI Comprehension Student Books and Teacher’s Editions*, *MCI Comprehension Assessment CD-ROMs*, and *MCI Pre- and Post-Tests: Placement and Progress-Monitoring Using The Lexile Framework® for Reading*.

In the Student Book for *MCI Comprehension*, the Practice the Skills pages that follow each text include questions, graphic organizers, vocabulary, and writing activities, which can be informally evaluated by teachers. The Teacher’s Editions provide teachers with informal daily opportunities to carry out formative assessment, prompting the examination of students’ performance during lessons, as they learn and apply comprehension strategies and skills, and more formally with point of use icons throughout, which reference appropriate tests in the *MCI Comprehension Assessment CD-ROMs*.

MCI Comprehension Assessment CD-ROMs provide a comprehensive set of additional tools for both formative and summative assessment and for organizing and managing data for decision-making and reports. One assessment, the Key Idea Cards, encourage teachers to make daily formative assessment an integral part of their teaching. These cards can be used as part of the lesson conclusion to wrap up the lesson, to give students a summary of the day’s learning objectives, and allow teachers to briefly assess how well students have achieved those objectives.

Formative assessment in the *MCI Comprehension Assessment CD-ROMs* continues in the Unit Skill Tests (Tests A and B). These tests add to feedback provided to teachers by providing formal assessment consisting of multiple-choice and open-ended response questions. Successful performance is identified with a criterion-referenced measure: 75% correct indicates that students have achieved

the criterion for successful performance. The Unit Skill Tests center on additional reading passages related to the unit’s theme. As students continue the theme-related readings, teachers are provided with formative feedback on performance.

Theme-related reading continues in Test C, a formative diagnostic assessment designed to be administered if a student fails to achieve the criterion-based cut-off score on the Unit Skills Tests. Test C, the Unit Skill Diagnostic Test, is designed for one-on-one administration by the student to provide detailed, diagnostic feedback on causes of the poor performance, as recommended by *What Works* (Gersten et al., 2008), as well as by the *Improving Adolescent Literacy* report of the Institute of Education Sciences (Kamil et al., 2008). That report notes the importance of diagnostic measures:

For the most seriously disabled readers, however, it is crucial that the major source of the students’ reading difficulties be identified so that interventions can be targeted to the most critical areas. (p. 35)

In addition to these three measures, *MCI Comprehension Assessment CD-ROMs* also provide teachers with the opportunity to include formative assessments of the *MCI Student Library* (Tests F and G), as well as fluency-based measures for use in assessing oral reading.

While the formative assessments described above are designed to fit neatly into normal day-to-day instruction and to provide ongoing feedback to teachers to help in planning, *MCI Comprehension Assessment CD-ROMs* also have a summative component, the Cumulative Skills Tests (Tests D and E). Summative assessments track students through the school year and beyond. They can be used to inform instruction, as with formative assessment, and they can also be used to monitor progress over longer periods. The summative assessments are offered midway through each level of the curriculum (Test D) and at the conclusion of the level (Test E). They provide feedback on how well students are performing with the six skills introduced in the unit. The Cumulative Skills Tests provide formal, summative measurement of how

MCI provides assessment tools in several components: MCI Comprehension Student Books and Teacher’s Editions, MCI Comprehension Assessment CD-ROMs, and MCI Pre- and Post-Tests: Placement and Progress-Monitoring Using The Lexile Framework® for Reading.



well students have responded to the research-based intervention instruction provided by *MCI*.

Another summative measure, this one helping teachers compare students' pre-*MCI* reading achievement with their reading ability after a level's worth of instruction, is the *MCI Pre- and Post-Tests: Placement and Progress-Monitoring Using The Lexile Framework® for Reading*. This assessment determines each student's reading level and also provides evidence of Lexile® and derived grade-level gains in reading, an important indicator in determining Adequate Yearly Progress (AYP). The Pretest portion of the assessment can be used to select a text level that presents the right degree of challenge and instructional scaffolding for each student's needs and also provides a beginning measure to contrast with later assessments, including the Post-Test, in order to monitor student progress.

Conclusion

MCI is designed to engage struggling readers in middle school and above in research-based efforts to improve overall reading and literacy achievement. Lessons focus on the development of reading and writing strategies in the context of content-area readings, especially English/language arts, science, and social studies. In addition to reading comprehension and writing, lessons also work toward the development of word decoding and vocabulary.

In recent years, local, state, and national attention to educational improvement and reform has come to be based more strongly on methods demonstrated by research to be effective. *MCI* is both research-based in terms of effectiveness and creative and engaging in terms of its appeal to middle school students.

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2. Clinical reading instruction and assessment. Balajthy is the author (with Sally Lipa) of the Guilford Press textbook, *Struggling Readers: Assessment and Instruction*.
3. Technology in reading and literacy. Balajthy is the author of almost 100 articles on technology. He presently is co-editor of the "Technology in Literacy Education" column in the International Reading Association's professional journal *The Reading Teacher*. He is the author of two books on the use of personal computers in school.

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