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Intervention to Improve Expository Reading Comprehension Skills in Older Children and Adolescents with Language Disorders

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With the recent renewed emphasis on the importance of providing instruction to improve expository discourse comprehension and production skills, speech–language pathologists need to be prepared to implement effective intervention to meet this critical need in older children and adolescents with language disorders. The purpose of this review article is to present intervention techniques, approaches, and strategies for facilitating expository reading comprehension skills in older children and adolescents with language disorders, as reported in the research literature. Evidence supports both content and strategic approaches to facilitating reading comprehension of expository text in these students. **Key words:** *adolescents*, *expository discourse*, *language intervention*, *reading comprehension*

EXPOSITORY DISCOURSE typically is produced as a monologue that conveys factual, academic, or technical information such as descriptions, explanations, procedural directions, or cause–effect relationships (Ward-Lonergan, 2010a; Westerveld & Moran, 2011). This type of discourse is found in a variety of contexts including textbooks, classroom lectures, newscasts, and technical manuals. Expository discourse is particularly challenging because it is focused on facts, events, and ideas; is logically based; and requires planning and organization around several different ideas. These features differentiate it from narratives (Bliss & McCabe, 2006). Expository discourse is difficult for many students to comprehend and use proficiently because there are many different types of expository discourse, each with its own specific organizational structure and key signal words (see Table 1). Furthermore, expository discourse comprehension and use require unique grammatical knowledge and complex syntactic abilities beyond what are typically required in conversational discourse (Nippold, 2009; Nippold, Mansfield, Billow, & Tomblin, 2008; Scott & Balthazer, 2010). Because of the many challenges involved in comprehending and producing expository discourse and potential negative effects on students, some refer to "the fourth-grade slump" or "hitting the wall at fourth grade" (Westby, Culatta, Lawrence, & Hall-Kenyon, 2010), which is when the curriculum demands shift to placing greater emphasis on expository discourse abilities.

Some of the specific challenges posed by many expository textbooks include lack

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Table 1. Examples of key cohesive signal words/phrases for different expository discourse structures

Causation (Explanation, Cause/Effect) (*as a result, because, thus, consequently, so, therefore, for this reason, if, then, reason, affected, influenced, resulted in, since, hence, cause, effect*)
Collection/Description (*defined as, called, labeled, refers to, is someone who, is something that, means, can be interpreted as, describes*)
Comparison (*in contrast, nevertheless, on the other hand, on the contrary, by comparison, whereas, similarly, same, different, but, yet, although, in spite of*)
Enumeration (Definition-Example) (*for example, such as, that is, namely, to illustrate, for instance, another, an example of, next, finally*)
Problem/Solution (*one problem, the problem is, the issues are, a solution(s) is (are)*)
Procedural (Temporal Sequence) (*next, first, second, then, finally, before, earlier, later, after, following, then, meanwhile, soon, until, since, beginning, during, still, eventually*)

Note. Based on Halliday and Hasan (1976), Irwin and Baker (1989), Meyer and Freedle (1984), and Westby (1991). Adapted with permission from Ward-Lonergan (2010a), in Nippold and Scott (Eds.), *Expository discourse in children, adolescents, and adults: Development and Disorders*, by Psychology Press/Taylor and Francis. All rights reserved.

of local and global text coherence, missing cohesive ties, and advanced readability levels that can be problematic for adolescents with language disorders (Snyder & Caccamise, 2010; Swanson et al., 2014). Furthermore, given that the primary purpose of expository text is to convey new information, readers who lack sufficient background knowledge often experience substantial difficulty comprehending it due to unfamiliarity with the new facts (i.e., domain-specific knowledge) presented and the organizational structure of the text. McNamara, Floyd, Best, and Louwerse (2004) found that domain-specific knowledge was the factor that best accounted for expository text comprehension whereas decoding skills was the factor that best accounted for narrative text comprehension.

For older children and adolescents, expository discourse is the "language of the curriculum" (Ward-Lonergan, 2010a). Indeed, students from Grade 4 onward are confronted with this type of discourse on a daily basis, particularly in courses in which a large amount of new academic content is conveyed, such as history, science, geography, government, and mathematics. The ability to comprehend and produce spoken and written expository discourse is critical for academic success and literacy development (Ward-Lonergan, 2010b).

It also has become increasingly clear that basic literacy skills emphasized in the primary grades do not result in automatic growth in more advanced literacy abilities that are necessary to comprehend and produce expository discourse as the curriculum demands increase at the upper elementary, middle school, and high school grade levels (Scott & Balthazer, 2010). These advanced literacy skills required for proficiency in understanding and using expository discourse need to be explicitly taught.

The ability to comprehend and produce spoken and written expository (informational) discourse is heavily emphasized in the Common Core State Standards (CCSS; National Governors Association Center for Best Practice and the Council of Chief State School Officers, 2010). This renewed emphasis in promoting expository discourse follows the National Assessment for Education Progress (NAEP) guidelines for introducing expository text in the earliest grades and increasing the amount to which students are exposed throughout the upper-grade levels (Swanson et al., 2014). An increasingly high proportion of informational text is required in the assessment of students as they advance through school. In the 2009 NAEP reading framework, the proportion of informational

passages used to assess students increases from 50% at the 4th-grade level, to 55% at the 8th-grade level, to 70% at the 12th-grade level (National Assessment Governing Board, 2008) as reported in the CCSS (National Governors Association Center for Best Practice and the Council of Chief State School Officers, 2010).

Research evidence from several investigations has indicated that students with language disorders and/or learning disabilities are at a distinct disadvantage as compared with their typically developing peers, for summarizing, recalling, comprehending, and producing expository discourse (Ward-Lonergan, 2010a; Ward-Lonergan & Duthie, 2013). Some of the specific underlying deficits that these students exhibit that negatively impact their comprehension include lack of awareness of expository text structures (Richgels, McGee, Lomax, & Sheard, 1987; Taylor & Samuels, 1983), poor identification and recall of main ideas (Beck, McKeown, Sinatra, & Loxterman, 1991; Graesser, Leon, & Otero, 2002), and limited ability to self-monitor comprehension (Bos & Filip, 1984; Englert & Thomas, 1987). Other specific underlying deficits that may contribute to expository text comprehension difficulties include limited comprehension of literate and content-specific technical vocabulary (Beck et al., 1991; Engelmann, Carnine, & Steely, 1991; Graesser et al., 2002), limited comprehension of complex syntactic structures (Francis & Kucera, 1982; Scott, 1995), inadequate metalinguistic abilities (Gordon & Braun, 1985), and poor inferencing skills necessary for understanding abstract relationships among ideas in expository texts (Armbrster & Anderson, 1988; Beck, McKeown, Hamilton, & Kucan, 1998).

Speech–language pathologists (SLPs) and other educators can play a critical role in supporting students with language disorders to develop sophisticated expository discourse abilities that are essential for academic, social, and vocational success (Nippold et al., 2008; Ward-Lonergan, 2014; Ward-Lonergan & Duthie, 2013). The purpose of this review article is to share several examples of intervention techniques, strategies, and approaches that have been reported in the literature related to facilitating literacy by improving expository reading comprehension.

INTERVENTION FOR IMPROVING EXPOSITORY READING COMPREHENSION

Explicit instruction

Despite the difficulties that students have with comprehending expository text, especially those with language disorders, teachers in Grades 4–12 typically do not instruct students in the reading comprehension process (DiCecco & Gleason, 2002). Unfortunately, many upper elementary, middle school, and high school teachers presume that their students have mastered the fundamentals of reading; hence, they do not provide explicit instruction in the strategic practices that could provide the basic foundation needed for good reading comprehension (Moody, Vaughn, Hughes, & Fischer, 2000). For example, students may be assigned chapters to read and comprehension questions to answer, with little instruction on how to decipher text structure and interpret information, on the assumption that they already know how to do so (Beck et al., 1998). To counteract this erroneous assumption, SLPs and teachers are faced with the pressing need to facilitate expository discourse comprehension in their students, especially those with language disorders.

The value of explicit instruction in reading comprehension skills was investigated in a study by Bakken, Mastropieri, and Scruggs (1997) with 54 eighth-grade students who were assigned to one of three conditions (i.e., text-structure-based strategy, paragraph restatement strategy, or traditional instruction strategy). In the text-structure-based strategy condition, students were explicitly taught how to locate the topic and subtopics, identify the main idea, locate supporting evidence for the main idea, write this information down in their own words, and identify different organizational structures in science passages.

Students in the paragraph restatement condition were taught how to rewrite statements from narrative and expository passages in their own words. Students in the traditional instruction strategy condition were provided with an explanation of the difference between leisure and scientific reading and were then taught how to read a science-text passage and answer comprehension questions about its content. Results showed that students in the text-structure-based strategy condition recalled more ideas from the text than students in the other two conditions. Students in the paragraph restatement condition performed better than students in the traditional strategy condition, and those in the traditional strategy condition made no significant improvement in their reading comprehension abilities. Given the results of this study, SLPs and educators have evidence to support the use of sample passages from students' textbooks to model strategies to explicitly identify topics and subtopics, main ideas, supporting details, and organizational structure of the text. Students then can be asked to paraphrase the content verbally and/or in writing to support their comprehension of the passage.

Graphic organizers

Students with language disorders often struggle to understand relationships among critical concepts and need instruction that explicitly demonstrates how content is related to background knowledge. Graphic organizers are used to identify salient details and to minimize extraneous information that frequently distracts students with language disorders from the most important content (DiCecco & Gleason, 2002). Kim, Vaughn, Wanzek, and Wei (2004) conducted an extensive synthesis of 21 studies published between 1963 and 2001 that specifically examined the effects of the use of graphic organizers on the reading comprehension of students with learning disabilities. These authors concluded that evidence supported the use of graphic organizers as being beneficial overall with respect to improving the reading comprehension of students with learning disabilities across these studies. Language clinicians and educators have access to numerous types of graphic organizers that are widely available commercially or publicly, or they can design their own to meet specific curricular expectations. The clinician can first model how to identify important concepts in a sample text using a completed graphic organizer. Next, the clinician and students can work together to co-construct a graphic organizer for an assigned reading passage. Once the students have gained proficiency in co-constructing a graphic organizer, they can be provided with opportunities to independently create their own graphic organizers to improve reading comprehension of textbook passages.

Academic vocabulary

Lesaux, Kieffer, Faller, and Kelley (2010) conducted a study to examine the effectiveness and ease of implementing an academic vocabulary program to support expository reading comprehension with 476 culturally/linguistically diverse, sixth-grade students (346 language minority learners and 130 native English speakers) in a large urban school district in California. Students who reported that a language other than English was spoken at home to any degree were designated as language minority learners. The study was conducted in 21 classrooms (experimental: $n = 13$; and control: $n = 8$) across seven middle schools for 45-min lessons, 4 days per week, over an 18-week period. The experimental group received academic vocabulary instruction in a text-based expository language program, Academic Language Instruction for All Students (ALIAS), which included independent, small-group and whole-class activities aimed at facilitating deep processing of word meanings through all four language modalities (listening, speaking, reading, and writing). Expository text selections were used from the *Time for Kids* magazine. Eight or nine "high-utility" academic vocabulary words that appeared both in the text and on the "Academic Word List" (Coxhead, 2000) were targeted in each 8-day lesson cycle, resulting in 72 total words taught.

Results indicated that the intervention yielded significant effects for both minority learners and native English speakers on various aspects of vocabulary including knowledge of word meanings taught, morphological awareness, and knowledge of word meanings as presented in expository text. There was a marginally significant effect on a standardized measure of reading comprehension, but no significant effects were found on a norm-referenced vocabulary measure. The authors concluded that a multifaceted, expository text-based, academic vocabulary intervention program, using multiple techniques, instructional components, and different language modalities to learn words in depth and acquire word-learning strategies is a promising approach for improving vocabulary and reading comprehension in young adolescents (Lesaux et al., 2010).

Social studies text

The acquisition of social studies content (e.g., history, geography, government) typically occurs through reading a variety of informational text sources that are frequently quite difficult for students with language-learning disabilities to comprehend. Swanson et al. (2014) reported results from a synthesis and a meta-analysis of 16 published studies that used reading interventions for facilitating comprehension of content in social studies textbooks in students in Grades K–12 with learning disabilities. The reading interventions reported included use of graphic organizers, mnemonics, reading and answering questions, guided notes, and multicomponent comprehension instruction to facilitate comprehension of social studies text. The authors concluded that these types of reading interventions with social studies content have a substantial positive effect on improving knowledge and reading comprehension abilities in students with learning disabilities across grade levels, which is consistent with findings from other recent syntheses (Gajria, Jitendra, Sood, & Sacks, 2007; Scruggs & Mastropieri, 2003). Swanson et al. (2014) noted that the effect size might be even greater for adolescents in Grades 7–12, which is particularly important because the demands for students to comprehend informational text increases throughout the grade levels (Gajria et al., 2007).

These studies offer some valuable information for clinicians and educators when designing intervention for supporting reading comprehension of expository test. Use of explicit information, graphic organizers, multiple modalities to target academic vocabulary, and other intervention techniques, including the use of mnemonics and guided notes, may be part of a comprehensive treatment plan designed to improve expository reading comprehension. In the next section, several specific language-learning strategies are presented that SLPs and other special educators can incorporate into intervention sessions.

Strategic approaches and specific language-learning strategies

Coutant and Perchemlides (2005) provided suggestions of strategies for helping struggling readers comprehend expository text based upon findings from several published sources. These strategies can be used before, during, and after reading a textbook or an article. Before reading, SLPs or teachers can discuss the subject of the text and explain how the text is organized. They can also draw students' attention to key words/phrases that signal a particular type of expository discourse structure and discuss the meaning of these words (see Table 1 for examples of key signal words). Students also can be given or be encouraged to prepare a standard outline or fill-in-the-blank notes for listing the main idea and supporting details that they can complete as they are reading a text. For example, students may copy headings and subheadings from a textbook directly into their notebooks, leaving space to fill in important information such as people and places discussed, dates, and definitions. When headings and subheadings are not provided, students can be scaffolded to create their own set of notes using the five

Wh- questions (i.e., *who*, *what*, *where*, *when*, *why/how*) related to the text content.

During the reading process, students can be encouraged to use a pencil or sticky notes to mark portions of a text that they find to be confusing, surprising, or important with specific symbols (e.g., ?, *, !), and they can also be encouraged to circle key signal words and phrases that they do not understand. Students also can underline or flag important content words that occur repeatedly in a text. These techniques provide a purpose for reading, help students focus on details that relate to main ideas, improve their recall of important facts, and help them draw conclusions on the basis of evidence found in the text. Students also can be encouraged to pause and write a very brief summary of what they have read in the margin (or on a sticky note) after reading a paragraph or section. This helps solidify their understanding of main ideas and helps them identify the stated or implied thesis of the text.

After reading an expository passage or article, students can be encouraged to reorganize the essential facts and information from their reading that they listed on preconstructed outlines. SLPs or teachers can facilitate discussions among students using questions that they have posed about the text to further promote reading comprehension, help them draw conclusions about what they have read, and provide them with opportunities to use evidence to support their opinions in writing. They also can use questions they raised while reading the text to guide their peer discussions.

A variety of instructional programs have been designed to teach reading comprehension strategies to students with language-learning disabilities. Researchers at the University of Kansas, Center for Research on Learning (KU-CRL), have been developing and expanding their Strategic Instruction Model (SIM) learning strategies curriculum for more than 30 years. One learning strategy, the Paraphrasing Strategy, which is designed to facilitate comprehension in struggling readers, involves teaching them to paraphrase the main idea and important details in each paragraph of a passage (Ellis & Graves, 1990; Schumaker, Denton, & Deshler, 1984). This strategy employs the RAP mnemonic: Read a paragraph; Ask questions about the main idea and details; Put main ideas and details in your own words (modification of Ellis & Graves, 1990; Schumaker et al., 1984). This helps students remember the strategy steps for focusing on the most important information in a passage. Research results indicate that students increased their reading comprehension rate from 48% on a pretest prior to strategy instruction to 84% on a posttest after strategy instruction using grade-level materials (Schumaker et al., 1984).

Another SIM learning strategy that helps improve reading comprehension of expository text is the Self-Questioning Strategy (Schumaker, Deshler, Nolan, & Alley, 1994). This strategy is designed to help students develop their motivation for reading by creating questions in their minds about information not initially divulged by the author, predicting the answers to those questions, searching for the answers to those questions as they read, and paraphrasing the answers. Research results indicated an increase of 40 percentage points in reading comprehension from pretest to posttest measures using grade-level reading materials following instruction in this strategy among students with learning disabilities and language disorders (Schumaker et al., 1994). Both of these strategies provide direct, systematic instruction that SLPs and others can implement in their intervention.

The TWA Strategy (Mason, Meadan, Hedin, & Corso, 2006) is a nine-step, multiple strategy expository reading package that clinicians may implement before, during, and after a student reads an expository passage. The strategy steps are as follows: Think before reading; think While Reading; and think After reading. Before reading, students are taught to activate their prior knowledge by thinking about the author's purpose, what they already know about the topic, and what they would like to learn about the topic. While reading, students are instructed to consider

their reading speed, linking their prior knowledge to what they are reading, and rereading confusing parts of the text. After reading, students are taught to develop main ideas using a version of the RAP Strategy (i.e., Read a paragraph. Ask yourself: What is the sentence in the paragraph that tells the gist of the paragraph? and Put the main ideas into your own words.). Next, students use Brown and Day's (1983) Summarization Strategy (i.e., delete trivial information, delete redundant information, substitute superordinate terms for a list of terms or actions, select a topic sentence, or invent a topic sentence if it is missing). Finally, students are provided with the opportunity to practice verbally retelling the information contained in the passage, with support from the interventionist as needed.

The SQ3R Strategy (Cheek & Cheek, 1983; Just & Carpenter, 1987; Schumaker et al., 1982) is a five-step strategy that students can use to improve their reading comprehension of expository text. This is another strategy that SLPs and other special educators can readily use with their students during language intervention sessions. In the Survey step, students obtain a general idea of what the text is about by skimming chapter titles, headings, and subheadings, viewing illustrations and graphs, and reading chapter introductions and summaries where applicable. The Question step entails the student reading any study questions in the text or given by the teacher or creating his or her own questions by turning titles, headings, and subheadings into questions. The Read step involves the student reading the text while keeping study questions in mind and keeping track of main ideas. After reading, the Recite step involves the student reciting answers to study questions and writing a few notes to help remember important ideas from the text. Finally, the Review step involves students looking back at study questions and trying to answer them without using notes and, ultimately, studying notes to remember the content later on.

Another five-step reading comprehension strategy that is similar to the SQ3R Strategy for expository discourse is the POSSE Strategy (Englert & Mariage, 1991). The clinician may implement this strategy, which comprises the following steps:

- *Predict*: Scan text for headings, bold face print, pictures, and for information that can be used to develop a preparatory set, activate background information, and generate prereading questions.
- *Organize*: Brainstorm prereading questions into a set of categories of information that the passage will contain, possibly through the use of a semantic map or graphic organizer.
- *Search*: Read the passage while keeping prereading questions and organizer in mind.
- *Summarize*: Give an oral summary of the passage including the main idea, supporting ideas, most important details, and additional questions.
- *Evaluate*: Identify gaps in understanding and compare what has been learned with predictions, clarify misunderstandings encountered, and predict the topic of the next section of the passage.

Best, Rowe, Ozuru, and McNamara (2005) have developed reading comprehension strategies for typically developing adolescents in the middle school level and beyond to improve their comprehension of science texts. These researchers advocated for matching expository texts to students' knowledge levels and providing explicit instruction in comprehension monitoring, paraphrasing, and elaboration strategies to improve reading comprehension of science texts in students with and without language disorders. They further contended that deep-level comprehension requires the ability to make inferences across sentences in a text and to integrate this information into a coherent representation of the overall meaning of the text. It is a process that may be supported by possession of domain-specific knowledge related to the text content. Unfortunately, most readers do not possess high levels of topic-relevant knowledge before reading a text. This negatively impacts their ability to comprehend the text at a deep level and requires them to exert more

effort to make the inferences necessary to comprehend the new concepts and information they are encountering while reading the text. Best et al. (2005) noted that there is converging evidence to support the provision of explicit reading strategy instruction to facilitate reading comprehension that includes higher level strategies for low-achieving adolescents with comprehension difficulties and language disorders (Bulgren, Deshler, Schumaker, & Lenz, 2000; Fisher, Schumaker, & Deshler, 2002). Thus, SLPs and others may wish to consider implementing these types of evidence-based strategies with their students with language disorders.

The Self-Explanation Reading Training (SERT) program, developed by Best et al. (2005), combines four reading comprehension strategies (i.e., comprehension monitoring, paraphrasing, elaboration, and bridging [inferencing]) into a powerful tool for helping readers comprehend expository science texts. The term "self-explanation" refers to the process of explaining the text to oneself while reading (Chi, Bassok, Lewis, Reimann, & Glaser, 1989). The SERT program entails (1) an *introduction* phase in which the strategies are first taught to the students; (2) a *demonstration* phase in which use of the strategies are modeled by the instructor for the students; and (3) an *initial practice* phase in which students practice using the self-explanation technique with science texts employing the four reading strategies that they have been taught (Best et al, 2005). The authors reported that research (McNamara, 2004; O'Reilly, Best, & McNamara, 2004) has indicated that SERT increases self-explanation quality and reading comprehension of science texts in middle school students, high school students, and college students (Best et al., 2005; McNamara, 2004). For example, O'Reilly et al. (2004) found that low-knowledge, high school readers who received SERT training performed better on a comprehension task than low-knowledge readers trained in a previewing strategy and those in a control group.

Best et al. (2005) also described a computer program, *iSTART* (Interactive Strategy Training for Active Reading and Thinking), as a technological support for improving reading comprehension of science texts. The authors' *iSTART* computer program is an automated, interactive tutor that incorporates SERT. The *iSTART* program continuously evaluates students' knowledge and use of the reading strategies and provides scaffolded feedback that is tailored to the individual needs of the students. The developers of the *iSTART* program report that it improves middle school and college students' use of reading strategies and comprehension of science texts (Best et al., 2005; Magliano et al., 2005).

Magliano et al. (2005) compared the effectiveness of live (SERT) and computer-based (iSTART) reading strategy training in an experimental study with 53 college students who were classified as skilled and less skilled readers. Students read four scientific texts, verbally self-explained the text after every sentence, and responded to text-based (literal) and bridging (inferential) comprehension questions about each passage. Improvement in the quality of their self-explanations and responses to comprehension questions was found for students in both the SERT and iSTART conditions. Less skilled readers improved performance on text-based questions but not on bridging questions, whereas skilled readers exhibited the opposite pattern of performance following iSTART instruction.

The iSTART program was recently expanded into a new version, the *iSTART-ME* (motivationally enhanced) program, which includes a gaming environment for learning self-explanation and reading strategies. This *iSTART-ME* program is designed to increase motivation and sustain students' attention and engagement during instruction. A fourth instructional phase, the Extended Practice phase, was added to promote long-term maintenance of strategy use over time (SoLET Lab; McNamara, 2012). Further development and investigation of this program are warranted to determine its efficacy for facilitating reading comprehension in intervention settings in the future.

Finally, Braten and Anmarkrud (2013) provided further support for the use of strategic instruction in expository reading comprehension. These researchers examined teachers' use of "naturally occurring classroom instruction of reading comprehension strategies," which refers to daily reading instruction provided by teachers without any particular training and that is not focused on a specific type of intervention. Participants were teachers in four ninth-grade language arts classrooms in four different public junior high schools in southeast Norway. They were divided into two groups (i.e., two high- and two low-strategies instruction classrooms). Categorization was based upon the typical amount of instruction in reading comprehension strategies that was routinely provided in their classrooms. All students read one unfamiliar expository social studies text passage on the topic of socialization and were instructed to monitor the strategies that they used while reading so that they would be able to respond to subsequent questions about what they did while reading. All of the students also responded to a multiple-choice test to measure their literal and inferential comprehension of the text content. The students in the high-strategies instruction group ($n = 58$) were found to perform better on the reading comprehension task and appeared to make effective use of active, deeper level comprehension strategies (e.g., organization, elaboration, and monitoring) than those in the low-strategies group ($n = 46$), who appeared to use more surface-level memorization strategies. In addition to carefully designed, specific reading comprehension strategy intervention, the authors concluded that naturally occurring instruction in reading comprehension strategies may also be beneficial in facilitating adolescents' comprehension of expository text.

Content approaches

Over the past three decades, researchers have sought to identify the most effective instructional approaches for improving reading comprehension. In addition to strategies-based instruction, some researchers have advocated for the use of other instructional approaches for improving expository reading comprehension. One alternative approach, the "content approach," was examined and compared with the "strategy approach" in a 2-year study conducted by McKeown, Beck, and Blake (2009). According to these researchers, content approaches for improving reading comprehension emphasize directing students' attention toward the content of the text and building mental representations of the ideas presented through discussion with the instructor. The participants were fifth graders enrolled in a low-performing, urban school district. Lessons were taught by six fifth-grade teachers and three support teachers in their classrooms. All of the teachers received training and support from the investigators. In the first year, lessons for five narrative selections were utilized, and in the second year, these five narrative selections were again implemented with a new cohort of students along with three expository text selections related to the topic of animal communication. The content approach directed students' attention to the content of the text through open-ended, meaning-based questions about the text they had read. In the strategies approach, students were taught specific procedures (i.e., comprehension monitoring, asking questions about important information, predicting, inferring, and summarizing) to guide their access of text content while reading the text. Students in the control group were taught lessons from the teacher's edition of the basal reading series regularly used in their classrooms. Across approaches, there were no differences found on a sentence verification technique (i.e., students determine whether sentences given are true about the text). However, students in the content group performed better than students in the strategies group and, interestingly, the control group occasionally outperformed the strategies group on oral narrative recall measures scored for length and quality and on expository learning probes used to assess learning of specific scientific concepts in the text. Differences in length and

quality of expository recall were not significant across approaches, although scores were somewhat higher for the content group than for the strategies group and about equal to the control group. The authors recommended that teaching strategies such as summarizing, making inferences, and predicting be introduced with examples from short texts and then subsequently be referred to as they occur during a student's discussion of a text. This suggested approach combines elements of both the strategy and content approaches to facilitate reading comprehension and emphasizes the importance of encouraging students to make meaningful connections among the ideas presented in a text and integrate them into a coherent representation of the text.

Combined content and strategy approaches

Horn (2010) also advocated for a combined approach to improving expository reading comprehension abilities in adolescents that blends content and strategy approaches. She described several treatment suggestions based upon her review of the literature and her own clinical experiences. She discussed three intervention principles and applied them to a client, who was a 14-year-old boy with an acquired language disorder resulting from a traumatic brain injury. The three principles involved analyzing text demands, combining content intervention with the teaching of text comprehension strategies and processes, and extending intervention across sessions and textbooks. Horn reported that the client made significant gains in his ability to comprehend a complex science text following one month of intervention.

Horn (2010) recommended further that several factors be taken into consideration when selecting expository texts to use in intervention. These included the content and vocabulary knowledge of the students, the text structure and its signals, use of cohesive ties, and grammatical structures in the text. She recommended applying content intervention techniques to activate prior knowledge, engage students actively, target useful vocabulary, and expose students to alternative sources of content. She also suggested that these content techniques be combined with strategy techniques. Those techniques are designed to facilitate strategy use, fit strategy use to student needs, represent and re-represent information, focus attention on text features, teach and signal text structure, call attention to the function of cohesive ties, and breakdown a text selection. Finally, Horn suggested techniques to promote transfer of learning by addressing student beliefs, attitudes, and goals, working toward generalization, balancing the focus of intervention, and using social connections to make therapy meaningful.

Culatta, Blank, and Black (2010) stressed the importance of SLPs and teachers working collaboratively to guide students through interactive, instructional discourse as they attend to expository text content, bridge the gaps in it, and apply it to their own lives and personal experiences. These authors provided descriptions of intervention techniques and strategies, with examples illustrated with content from a biography written for young, primary grade children that contained both narrative and expository discourse features. These intervention suggestions could easily be adapted for use with older children and adolescents with language disorders, including the use of questioning, responding, commenting, and extending discussions for improving expository text comprehension.

SUMMARY AND CONCLUSIONS

The results of several research studies have demonstrated that there are a number of treatment strategies, techniques, and approaches that may be used to improve expository reading comprehension abilities in struggling readers including those with language disorders and learning disabilities. These studies have shown that older children and adolescents with reading difficulties can benefit from the use of both strategy- and content-based approaches, as well as from a combined strategy- and content-based approach, for improving expository text comprehension.

Speech–language pathologists are well equipped to play a critical role in supporting expository reading comprehension due to their extensive knowledge about the language complexities of text and how these language features are likely to impact students with language-learning disabilities. Given that SLPs face the challenge of providing effective services in schools under time and workload constraints, it is important to consider a variety of service delivery options. These include the push-in, collaborative classroom, language-based classroom (i.e., course-for-credit), and consultative models, as well as traditional pull-out therapy. It is important to consider these models in order to provide effective curriculum-based intervention to improve expository reading comprehension.

Because of the serious negative academic consequences that can result from poor spoken and written expository discourse abilities, it is essential that SLPs and teachers support older children and adolescents with language disorders by providing intervention focused on improving these skills. These students are at a distinct disadvantage, as compared with their typically developing peers, for mastering the language of the curriculum, and thus for achieving academic success.

Research has produced a substantial evidence base with respect to best practices in expository discourse intervention. However, there often appears to be a disconnect between research results and clinical practice. The time is ripe for changing this condition, as it appears that there is an increased awareness of the critical need to facilitate the comprehension and production of expository (informational) discourse, particularly associated with implementation of the common core standards throughout the curricula for youth and adolescents. Furthermore, there is a need for a collaborative movement among SLPs, educators, administrators, and other professionals to apply our current knowledge of best practices in clinic and classroom settings. The future is likely to hold great promise for older children and adolescents with language disorders through continued intervention and research in the area of expository discourse.

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