TEACHING TEXT STRUCTURE

Examining the Affordances of Children's Informational Texts

ABSTRACT

This study investigated the affordances of informational texts to serve as model texts for teaching text structure to elementary school children. Content analysis of a random sampling of children's informational texts from top publishers was conducted on text structure organization and on the inclusion of text features as signals of text structure. Our findings showed three limitations to the affordances present in informational texts currently available for elementary school children. Implications of these findings are discussed.

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THE ability to read, analyze, and evaluate informational texts is essential to college and career readiness in the twenty-first century and to the demands of adult literacy (Cummins, 2013; Duke, Halliday, & Roberts, 2013; National Governors Association Center for Best Practices [NGA Center] & Council of Chief State School Officers [CCSSO], 2010). Consequently, the importance of informational texts for elementary grade students is receiving increased attention. The *English Language Arts Common Core State Standards (CCSS ELA/Literacy)* accentuate the use of informational texts in elementary schools to better prepare students to meet the challenges of "the staggering amount of information available today" (NGA Center & CCSSO, 2010, p. 3). The *CCSS ELA/Literacy* recommend increased use of informational texts with a fifty-fifty proportion of informational to narrative texts by fourth grade. The value of informational texts for elementary students is also noted by the National Assessment of Educational Progress (NAGB, 2008), the National Reading Panel (NICHD, 2000), and educa-

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tional researchers (e.g., Chall & Snow, 1988; Duke, 2000; Kaplan, 2003). Given the burgeoning emphasis on informational text, publishers have provided an "influx of informational text" written specifically for elementary grade students (Cummins & Stallmeyer-Gerard, 2011; Duke, Pearson, Strachan, & Billman, 2011; Moss, 2008; Palmer & Stewart, 2005).

The increased access and use of informational texts places greater demands on teachers, authors, and publishers to consider qualitative elements of informational text complexity that have largely been overlooked in the past (Cummins, 2013; Kaplan, 2003). Oftentimes, the complexity of informational text is evaluated based solely on quantitative readability formulas of sentence length and word difficulty. However, determination of text complexity can be improved through evaluation that also considers qualitative elements (Anderson & Armbruster, 1984; Armbruster, Anderson, & Ostertag, 1987; Kucan, Hapgood, & Palincsar, 2011; Meyer, 1975). Recently, text structure was specified as an important element of text complexity to be considered when selecting informational texts for instructional purposes (NGA Center & CCSSO, 2010). The structure of a text conveys information to the reader in a way that shows the connections among ideas in the text and how some of these ideas are of central importance while others are subordinate (Meyer & Rice, 1984; Williams et al., 2007). Meyer (1981) reported, "It is the structure of text that primarily differentiates text from simple lists of words or sentences" (p. 7). Informational text structures are conventionally identified as description, sequence, problem/solution, compare/contrast, and cause/effect (Meyer, 1979; Meyer & Poon, 2001; NGA Center & CCSSO, 2010; Williams, Stafford, Lauer, Hall, & Pollini, 2009).

Benefits of Well-Structured Informational Text

The more clearly an author organizes an informational text, the easier it is for a reader to recognize the text structure (Dickson, Simmons, & Kame'enui, 1998; Williams, 2005). A substantial body of research has identified significant benefits for expert, novice, and struggling readers who recognize and use informational text structure (Armbruster, Anderson, & Ostertag, 1989; Gersten, Fuchs, Williams, & Baker, 2001; Kintsch, 2013; Mayer, 1984; Taylor, 1992). Well-structured informational text has been shown to promote comprehension (Hiebert, Englert, & Brennan, 1983; Marinak & Gambrell, 2009; Williams et al., 2007). Well-structured text improves students' abilities to construct accurate meaning, acquire new content knowledge, ask relevant questions, predict forthcoming information, summarize the text, and monitor comprehension (Hall, Sabey, & McClellan, 2005; Meyer et al., 2002; Richgels, McGee, Lomax, & Sheard, 1987).

Well-structured text also influences the ability to retain learned information (Kintsch, 1977; Kintsch & Kintsch, 2005; Meyer, Brandt, & Bluth, 1980; Taylor, 1986). Readers who are aware of the text's structure organize the information presented in the text as they read, chunking the information into thought units that are more readily stored and later recalled. Conversely, if the text structure is difficult to recognize, readers retrieve and store information in a "seemingly random way" (Gersten et al., 2001, p. 282). In one study, clearly organized text was shown to double the amount of information students remembered (Meyer et al., 1980).

Interestingly, when a text is well structured, it is unusual for a reader to construct an organizational pattern different from what the author has presented for understanding and remembering the information (Kintsch, 2013; Meyer, 1979). However, when a text fails to present a clear organizational structure, readers typically create a list of ideas from the text without trying to organize the information in a manner that aids learning or retention (Dickson et al., 1998, Meyer & Freedle, 1984).

Texts that are well structured influence not only the amount of knowledge acquired from reading, but the kind of knowledge. Well-structured text helps students to more easily and accurately differentiate the important main ideas from the subordinate details; with less well-structured text, students tend to recall more peripheral details and fewer main ideas (McGee, 1982). Informational texts that are less well structured demand more of the reader's time and attention as the reader must unscramble the content to identify key ideas; simply stated, "People remember more and read faster information which is logically organized" (Meyer, 1982, p. 38).

Finally, well-structured informational texts support effective literacy instruction. Teaching students how to read and write informational texts should begin with *model texts* that "provide clear, easy-to recognize examples" of the organizational structure (NGA Center & CCSSO, 2010; Shanahan et al., 2010, p. 19; Williams et al., 2007). As students encounter clearly structured model texts, they learn to recognize and use the organizational patterns in their own reading and writing. Once learned from model texts, readers use their understanding of text structures to reorganize complex, less well-structured texts to aid comprehension and recall (Armbruster & Anderson, 1984; Meyer & Rice, 1984; Williams et al., 2009). Model texts also build students' writing skills as proficient writers use knowledge of text structure to organize and plan compositions (Clark, Jones, & Reutzel, 2013; Coker, 2013; Donovan & Smolkin, 2011; Raphael, Englert, & Kirschner, 1986). Meyer and Wijekumar (2007) showed that teaching text structures through the use of model texts and then applying knowledge of these structures in students' writing simultaneously helped improve comprehension and composition. Model texts enable teachers to scaffold instruction with simple, single-structured texts in preparation for reading and writing more complex, multiple-structured texts.

Previous Research on Informational Text

While the benefits of using well-structured informational text are clearly documented, research conducted prior to 1990 suggested three limitations associated with informational texts available before the recent influx of informational texts. First, children's informational texts were noted to switch from one organizational pattern to another within a single section of text incorporating several different structures (Anderson, Armbruster, & Kantor, 1980). Texts that combine multiple structures to present information require the reader to transition fluently between structures (Chambliss & Calfee, 1989). This is a difficult task for young readers, struggling readers, or readers lacking background knowledge of the topic (Dickson et al., 1998, Meyer & Rice, 1984). Second, an abundance of informational texts were written using a description text structure. As early as 1965, Niles reported that the majority of informational texts written for secondary-school students used a description text structure. An overreliance on description text structure

in informational text written for children and adults was later noted by Brandt (1978) and Meyer and Freedle (1984). Unfortunately, description text structure provides the least benefits for enabling comprehension and recall (Alvermann, 1981; Englert & Hiebert, 1984; McGee, 1982; Meyer, 1982). Third, informational texts written for elementary and secondary students often lacked informational text features and clue words that serve as explicit signals to aid readers in recognizing text structure (Jonassen, 1985; Meyer, 1981). Helpful text features associated with text structure (such as explicit cohesive ties and conjunctive relation signals) are often removed when informational text is written to conform to readability standards based on sentence length and/or word difficulty (Kucan et al., 2011). For example, Armbruster and Anderson (1988) explained that one of the easiest ways to lower the readability level is to create two short sentences from one long sentence by deleting the signals of conjunction between the two independent clauses. Reducing the readability level by eliminating these "clue words" that explicitly signal the relationships among ideas makes a text more difficult to comprehend as the reader must then infer the relationships (Armbruster & Anderson, 1984; Meyer et al., 1980; Pearson, 1974–1975). Additional analyses of text difficulty have revealed that when the information presented in texts does not include strategically placed text features and clue words, there is greater load on the reader's ability to make inferences using background knowledge about the topic (Davison, 1984).

Overall, researchers were "impressed with the poor quality" of informational text available for children at that time (Armbruster & Anderson, 1982, p. 28). In an effort to improve future informational texts, several researchers created examples of well-structured informational text that represented a single text structure, used structures other than description, and signaled explicitly the organizational structure through the use of text features (Armbruster &Anderson, 1984; Meyer, 1981, 1982; Meyer & Rice, 1984). Pace (1982) summarized the focus of this work to make informational text more accessible to students, stating, "As a general principle, the writer should do whatever is possible to facilitate the acquisition of new information by highlighting important ideas and limiting demands on the reader" (p. 24).

Purpose of Current Study

Although research conducted prior to 1990 suggested limitations of informational texts, a more recent examination of text structure quality was not located in our review of research. Recent studies of informational text structure instruction have used researcher-created text as models of text structure rather than authentic text, suggesting a continued lack of access to well-structured informational texts (Williams 2005; Williams et al., 2007, 2009). Nevertheless, the *CCSS ELA/Literacy Standards* suggest the use of exemplar texts to aid student progression on "a 'staircase' of increasing text complexity that rises from beginning reading to the college and career readiness level" (NGA Center & CCSSO, 2010, p. 8). In grades K–5, this includes building students' knowledge and use of informational text structures and features. It is recommended that instruction begin with low-complexity texts that have simple, well-marked, conventional structures to prepare students for high-complexity texts (NGA Center & CCSSO, 2010; Shanahan et al., 2010). Implemen-

tation of these recommendations necessitates accessibility to well-structured informational texts.

Given the benefits of well-structured informational text, the recent increase in informational text published for elementary students, and the present standards-focused emphasis on literacy instruction using informational texts, we wondered about the affordances of current informational texts to serve as model texts for teaching students how to identify and use text structure and features to aid comprehension and composition of informational texts. This question is rooted in Gibson's (1977, 1979) Theory of Affordances. The term "affordance" refers to the features of an object that determine how the object could be used in an environmental situation relative to the purposes of the user (Norman, 1988). According to this perceptual learning theory, a good design makes the affordances explicit. The greater the affordances offered by the object, the greater the usability of the object to match the goals of the user; usability is improved by increasing affordances (Chemero, 2003; Scarantino, 2003). For the purposes of this study, the object is children's informational text; the environmental situation is elementary classrooms. Informational texts that follow a single organizational pattern and include text features as explicit signals of text structure offer increased affordances for elementary students learning about informational text structure. If elementary students and teachers are to reap the benefits of using well-structured model texts, informational texts must offer such affordances to the user (Cummins, 2013; Duke et al., 2013; NGA Center & CCSSO, 2010).

Thus, the purpose of this study was to examine the affordances offered by currently available children's informational texts. Specifically, this study investigated the following: What are the affordances of children's informational texts as: (1) single-structure model texts for each of the five conventional informational text structures? and (2) offered by the inclusion of informational text features as signals of text structure? Analysis of these affordances could prove beneficial to educators and researchers seeking model texts (NGA Center & CCSSO, 2010; Shanahan et al., 2010; William et al., 2007).

Method and Procedures

To answer these questions, this study employed a content-analysis design following the established steps of developing a coding scheme, sampling of content, coding of content, and reporting of results (Neuendorf, 2002).

Developing a Coding Scheme

To evaluate the affordances of interest, a coding scheme was developed to identify single-structure texts for each of the five conventional structures and text features that serve as signals of informational text structure. Key variables of importance for this content analysis were operationalized for the coding scheme based on previous research of informational text as presented below.

Informational text. For the purposes of this study, informational text was defined as text that: (1) functions to communicate about the natural or social world.

Table 1. Conventional Informational Text Structures

Informational Text Structure	Definition	Clue Words
Description	The major idea is supported by a catalog or list of details, descriptions, or examples.	
Sequence	The major idea is supported by details that must be presented in a particular sequence. This sequence can be based on chronology (e.g., timeline) or process (e.g., life cycle).	first, second, next, finally, when, until, and other words that signal sequence of time or process
Problem/solution	The major idea is presented as a problem with details explaining a possible solution(s). For the primary grades, this is typically in the form of a question and answer(s). The problem must be presented first, followed by details of the solution(s.)	the question is, the problem is, who, what, why, where, when, how, and other words that signal questioning
Cause/effect	The major idea is a cause or effect supported by details explaining the causes or the results produced of/by the major idea. The order of presentation of the cause or effect can vary (i.e., the cause may be presented first, followed by effects, or vice versa).	because, since, therefore, as a result, due to, and other words that signal cause/effect
Compare/contrast	Two or more major ideas are presented with details explaining how the major ideas are similar or different. The order of presentation can vary (i.e., compare/compare, contrast/contrast, compare/contrast).	compared to, different from, same as, instead, likewise, and other words that signal compare/contrast

and (2) presents factual content (adapted from Duke, 2000). This definition excluded narrative texts, poetry, biographies, or narrative-informational texts that combine a fictional narrative story format with informational writing (e.g., the Magic School Bus series).

Text structure. Text structure is how the ideas of a text are organized and interrelated to convey a message to the reader; text structure specifies the logical connections among ideas and the subordination of some ideas to others (Meyer & Rice, 1984).

Informational text structures. Prior research has identified five conventional informational text structures: description, sequence, problem/solution, compare/contrast, and cause/effect (Armbruster et al., 1989; Dickson et al., 1998; Meyer, 1979; Meyer & Freedle, 1984; Meyer & Poon, 2001; Williams et al., 2007, 2009). Definitions of these structures and structure-specific clue words to aid identification of these structures are presented in Table 1.

Analysis of text structure. There are three classically described levels at which the structure of a text can be analyzed (Meyer, 1981; Meyer & Rice, 1984; van Dijk, 1979; Weaver & Kintsch, 1996).

1. *Sentence or micropropositional level*: the concern at the lowest level of text structure is the way sentences (or individual propositions) are organized within a text; how each new sentence or item of information relates to what has already been presented.
2. *Paragraph or macropropositional level*: the concern is with the relationships among ideas represented in paragraphs (or complexes of propositions).

3. *Top-level structure*: the concern is with the text as a whole. The top-level structure of a text corresponds to its overall organizing principles. It is the top-level structure of a text that significantly impacts the reader's ability to comprehend the information presented and to retain learned information (Lorch, Lorch, Ritchey, McGovern, & Coleman, 2001; Meyer, 1981; Meyer & Rice, 1984).

Content analysis in this study focused on identification of the top-level structure of currently available children's informational texts. Analysis of the top-level structure allows identification of model texts that are organized around a *single structure* (descriptive, sequence, problem/solution, compare/contrast, cause/effect) and texts that combine *multiple structures* within the text, thereby presenting elementary students and teachers with more complex text-structure combinations.

Informational text features. Seven features of informational text were coded in this study: title, table of contents, headings, introduction or preview statement, paragraphs/sentences, conclusion or summary statement, and graphical features (photographs, illustrations, diagrams, charts, etc.). Although this is not an inclusive list of informational text features, these seven have been identified as organizational features that offer signals of top-level informational text structure (Armbruster & Anderson, 1988; Cauchard, Eyrolle, Cellier, & Hyönä, 2010; Jonassen, 1985; Meyer, 1981).

Each of these variables were addressed in the coding form, which included sections for the five conventional informational text structures and the seven text features to identify organizational patterns that represented use of a single text structure or multiple text structures. A final classification of the top-level structure was based on analysis of the text features signaling the top-level structure. As Meyer et al. (1980) explained, the top-level structure is the text structure pattern that can subsume the greatest amount of text. For example, a text could be absent of headings that signal the top-level structure. Readers would then have to infer these relationships. The lack of headings will not change the top-level structure of the text, but will make it more difficult for readers (especially young readers or struggling readers) to recognize the top-level structure.

Development of the coding scheme extended over several months. The coding scheme was used in several rounds of pilot coding to refine the coding form and to standardize the coding process. Questions from each round of pilot coding were discussed and determinations were made in regard to revisions of the coding scheme. Reliability checks were conducted during the development of the coding form. Analysis of intercoder reliability was used to establish reliability of the coding scheme (Neuendorf, 2002). Intercoder reliability on the final pilot of the coding form with 15% text subsample was Cohen's kappa $= .91$, $p = .000$ for the classification of top-level text structure and for the number of features signaling the top-level structure. Cohen's kappa levels above .80 are generally acceptable and indicative of high reliability (Ellis, 1994; Krippendorff, 2013; Neuendorf, 2002; Popping, 1988). The Coding Form is presented in Figure A1 in Appendix A.

Sampling of Content

Content analysis for this study focused on informational texts currently available for use in elementary school classrooms. To identify children's informational texts,

we contacted the top five world publishers (Wischenbart, 2010) of children's books (Benchmark, Lerner, Sundance/Newbridge, Rigby, and Scholastic) for a listing of their current informational text titles for grades 1–5. To increase the sampling validity of representation of informational books used in elementary classrooms, we asked experts in children's literature to identify additional publishers that should be included in the sample. This resulted in the inclusion of other well-known publishers of children's informational texts (National Geographic, Dorling Kindersley, and HarperCollins). In total, this resulted in a listing of 5,620 children's informational texts. Each of the informational text listings from the publishing companies was then sorted by the number of texts available per grade level, based on the publishers' identified grade level. A grade-level stratified 5% sample from each publishing company was included in the analysis (see Table 2 for an example of the stratified sampling). Although there is no universally accepted set of criteria for selection of sample size (Neuendorf, 2002), a 5% sampling was deemed appropriate for a small-scale study. In total, 281 books were ordered from the publishers' lists of 5,620 informational texts for the random sampling of informational texts for this study.

Coding of Content

The sample was analyzed using the coding form to analyze the identified affordances offered by currently available children's informational texts. The 281 informational texts were randomly assigned to two coders for independent coding. As recommended (Neuendorf, 2002), a final reliability assessment was conducted on a randomly selected 20% subsample of the informational texts; Cohen's kappa remained above .90, $p = .000$, for the classification of top-level text structure and for the number of features signaling the top-level structure. As an additional check of coding accuracy, the researchers discussed all texts for which either coder had questions or potential concerns about the text's coding. Finally, all texts identified as single structure were analyzed for accuracy by each researcher for confirmation of a single top-level structure and the text features representing the top-level structure.

Reporting of Results

Of the 281 texts ordered from the publishers' lists of informational books, 223 texts met the definition of informational text for inclusion in the content analysis (Table 3). Analysis of the 223 informational texts focused on affordances as: (1) single-

Table 2. Example of Stratified Random Sampling by Publisher

Publisher	No. of Books by Publisher	No. of Books by Grade		5% Sample of Books in Analysis
A	1,565	1	918	46
		2	277	14
		3	195	9
		4	91	5
		5	84	4

Table 3. Classification of 281 Books Ordered for Content Analysis

Classification	No. of Books	% of Total
Not factual content (I spy, riddles)	5	1.8
Narrative	3	1.0
Biography	25	8.9
Mixed (narrative & informational)	21	7.5
Poetry	4	1.4
Informational	223	79.4
Total	281	100

structure model texts for each of the five conventional informational text structures, and (2) offered by the inclusion of seven features of informational texts as signals of text structure.

Analysis of the top-level structure to identify single-structure model texts for each of the five conventional informational text structures (descriptive, sequence, problem/solution, compare/contrast, cause/effect) revealed 23% (52) of the 223 text sampling represented a single structure and 77% (171) used multiple structures within the text. Of the 52 texts utilizing a single top-level text structure, description structure (54%) was used most frequently, followed by sequence (27%), problem/solution (17%), and compare/contrast (2%). This random sampling of informational texts did not locate any texts organized around a cause/effect top-level structure (Fig. 1).

In preparation for analysis of informational text features as signals of text structure, the 223 texts were first examined for inclusion of the seven features (title, table of contents, headings, introduction, paragraphs/sentences, conclusion, and graphical features). The informational texts sampled in this study included on average 5.72 text features ($SD = 1.17$), with title, paragraphs/sentences, and graphic features

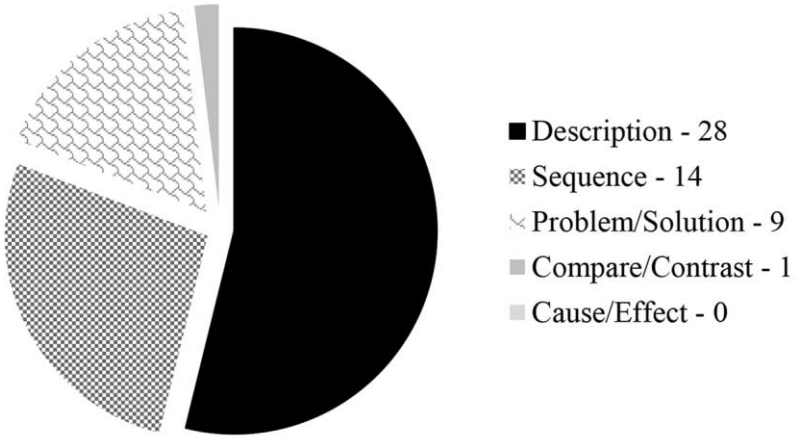

Figure 1. Distribution of single top-level organizational texts by the five conventional structures.

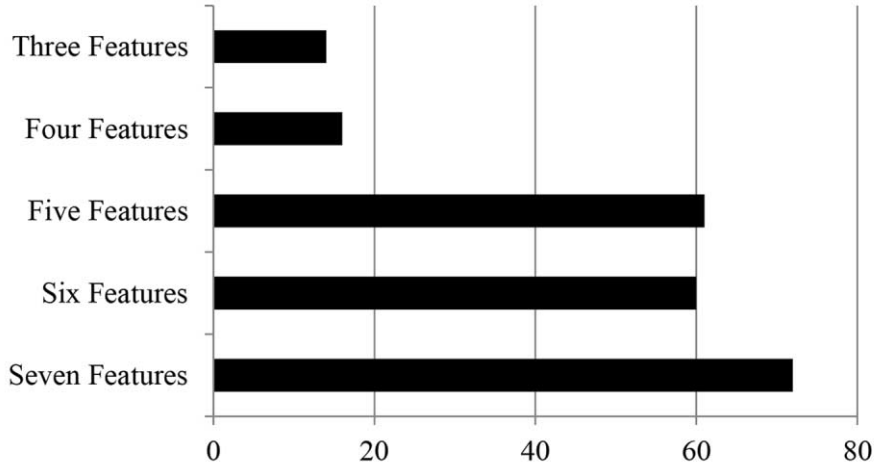

Figure 2. Number of informational text features per text.

accounting for three of these 5.72 features (Figs. 2, 3). Sixty-four percent (142) of the texts included a table of contents and 64.5% (144) had headings. As a table of contents is generally expected to parallel the headings in an informational text, analysis was conducted to evaluate the number of books that used a table of contents and headings. Of the sampled texts, 59% (132) contained both a table of contents and headings, 10% (22) had either a table of contents or headings, and 31% (69) had neither text feature. Eighty-one percent (181) of the informational texts sampled had an introduction or preview statement to begin the text; however, only 66% (146) had a conclusion or summary statement. Only 58% (129) of the sampled texts had both an introduction and a conclusion, 28% (63) had one or the other feature, and 14% (31) had neither an introduction nor a conclusion.

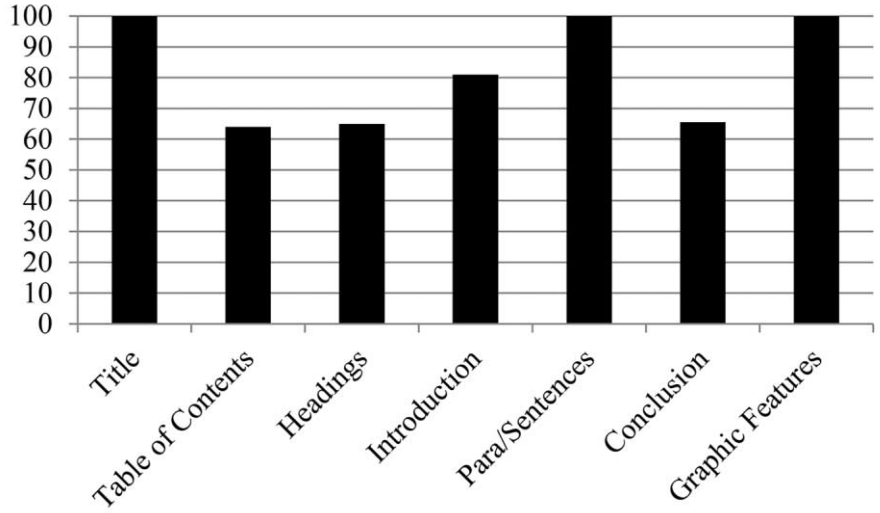

Figure 3. Percentage of informational texts that include the specified text features.

Table 4. Distribution of Text Features as Signals of Text Structure

	Title	Table of Contents	Headings	Introduction/ Preview Statement	Paragraphs/ Sentences	Conclusion/ Summary Statement	Graphic Features
Description	**157***	73*	69*	**82***	36	78*	70
Sequence	33	7	10	4	16	10	16
Problem/solution	25	11	14	51	10	30	6
Compare/contrast	8	2	2	9	1	6	2
Cause/effect	0	0	0	0	0	1	0
Multiple	0	49	49	31	**160***	19	**129***
Not included in text	0	**81**	**79**	46	0	**79**	0

Note.—Bold font = majority of texts sampled; asterisk = most frequently signaled structure.

Analysis of the features of informational texts as signals of text structure in the sample of 233 informational texts (Table 4) showed that a description text structure was signaled most often by the content of the book title (70% of texts) and by the introduction (38% of texts). Although the majority of informational texts analyzed lacked a table of contents, headings, and a conclusion, the structure signaled most often by the texts with these features was also description (33%, 31%, and 35%, respectively). In the majority of texts, paragraphs/sentences and graphic features did not signal a single text structure. Paragraphs/sentences and graphic features would signal one conventional text structure and then abruptly change to another structure. Paragraphs/sentences in 72% of the texts and graphic features in 58% of the texts signaled multiple structures.

The 52 texts identified as single structure were further analyzed for the ratio of signaling features to total text features. The number of text features that signaled the top-level single structure ranged from two through seven, with a mean of 4.48 ($SD = 1.18$), with ratios ranging from 57% to 100% of the included text features signaling the top-level text structure.

Discussion

This study examined the affordances of currently available informational texts as models of well-structured texts. The content analysis focused on identification of single-structure model texts for each of the five conventional informational text structures and on the inclusion of seven informational text features as signals of text structure.

Affordances of Informational Texts as Single-Structure Model Texts

The importance of informational text structure is emphasized in the Common Core State Standards, and elementary teachers are encouraged to teach informational text structure using exemplary model texts that use a clear, explicitly marked, single-structure text organization (NGA Center & CCSSO, 2010; Shanahan et al., 2010; Williams, 2005). Results of this content analysis reveal that the majority (77%) of the sampled children's informational texts use multiple text structures rather than a single-structure text organization. Previous research has demonstrated that

such texts place greater demands on the reader in regard to extensive use of background knowledge and highly proficient reading skills (Anderson et al., 1980; Chambliss & Calfee, 1989; Meyer & Rice, 1984; Moss, 2008; Ness, 2011). Conversely, single-structure texts enable young readers, struggling readers, or readers lacking sufficient background knowledge of the topic to more readily access, recall, and understand the information presented in the text, aiding students' earlier acquisition of content knowledge (Hall et al., 2005; Kintsch & Kintsch, 2005; Marinak & Gambrell, 2009). Texts that offer a single top-level organizational structure are also important for use in elementary classrooms as teachers can initially focus text-structure instruction on each of the structures using model texts to prepare students for the increased demands of informational texts that use multiple structures. If initial text-structure instruction with young children fails to provide explicit instruction and clear examples of individual text structures, it is more difficult for students to later experience success using text-structure knowledge as an aid for comprehension with more complex texts (Williams, 2005). Thus, it is critical for informational texts to offer affordances of single-structure model texts and that such texts are identified through studies such as this content analysis or by teacher committees.

Similar to previous research (Brandt, 1978; Meyer & Freedle, 1984), a description text structure was used most frequently in this information text sampling. Of the 23% of texts classified as a single-structure text, 54% were description structure, 27% sequence structure, 17% problem/solution, 2% compare/contrast, and 0% cause/effect. A description text structure is the least sophisticated level of organization, as the information is presented in a catalog approach with each point representing the same or a relatively equal order of importance. In reading texts using description structure, the reader is left to his/her own accord to retrieve, organize, and store the information. As a model text for writing instruction, a description structure is generally portrayed using a webbing or cluster graphic organizer, with each descriptive element presented in a random ordering unique to the author. A description structure often results in a "list of ideas" that neither aids learning nor retention, but promotes recall of peripheral rather than essential ideas (McGee, 1982; Meyer, 1979).

It appears that for some time the majority of texts written for children have used a description structure (Niles, 1965). Although a description structure may be the most appropriate structure for presenting information about some topics, it is essential that students are presented with model texts demonstrating each of the five conventional structures to advance their abilities to read and write increasingly complex texts (Armbruster & Anderson, 1988; Donovan & Smolkin, 2011; Meyer & Wijekumar, 2007; NGA Center & CCSSO, 2010). Based on this content analysis, current children's informational texts are lacking in affordances of single-structure model texts for several of the informational text structures, particularly compare/contrast and cause/effect.

Affordances of Informational Text Features as Signals of Text Structure

The features of informational text provide the reader with aids for navigating, previewing, outlining, summarizing, understanding, and learning the information

presented in the text. Additionally, the more clearly the text features signal a single top-level structure, the greater the benefits to the reader (Armbruster & Anderson, 1988; Jonassen, 1985; Meyer, 1981). Well-written informational texts for adults typically include features to aid navigation of the text, such as tables of contents, headings, introductions, and conclusions. Unfortunately, many informational texts written for children do not include these important features of informational texts. To illustrate this point, Ness (2011) noted that the 2010 NSTA "outstanding science book" lacked a table of contents, headings, a glossary, and diagrams.

This content analysis examined the affordances offered by inclusion of seven informational text features that can aid identification of top-level text structure: title, table of contents, headings, introduction or preview statement, paragraphs/sentences, conclusion or summary statement, and graphical features (photographs, illustrations, diagrams, charts, etc.). Analysis of these informational text features indicated that most texts did not fully utilize these seven features. Furthermore, these text features could be used more effectively in conjunction with one another to signal structure. Of the texts sampled, only 32% included all seven of these features. The features used least often were table of contents, headings, and a conclusion. Text features that are generally considered related (table of contents reflecting headings and an introduction and conclusion reflecting the beginning and ending of a text) were used together in less than 60% of the texts. The limited inclusion of tables of contents, headings, introductions, and conclusions restricts affordances offered for students and for teachers as these features have been shown to increase recall, improve comprehension, lessen demands of complex text, and strengthen content memory of the topic (e.g., Cauchard et al., 2010; Lorch & Lorch, 1996; Lorch et al., 2001; Ritchey, Schuster, & Allen, 2008; Surber & Schroeder, 2007). It is also interesting to note that writing instruction (from elementary to college level) typically emphasizes the need for an introduction and conclusion; yet, based on the findings of this study, elementary students are frequently encountering informational texts that lack these basic features.

This analysis of affordances of text features as signals of text structure has demonstrated a pronounced need for authors and publishers to carefully consider the use of text features in a coordinated manner to signal top-level text structure in children's informational text. Although exclusion of some text features may appear to reduce the measured complexity level of informational text, the absence of these features often serves only to increase cognitive demands as the reader is left to create or infer the structure and the relationship between ideas—daunting tasks for young or struggling readers seeking to gain content knowledge.

Implications for Instruction

The importance of informational text has risen to the forefront of educational standards in an effort to better prepare students for college and career (NAGB, 2008; NGA Center & CCSSO, 2010). The Institute of Educational Sciences and the *CCSS ELA/Literacy Standards* recommend that elementary school teachers use *model texts* that have a clear, explicitly marked single text structure to teach students to identify and use text structure to increase comprehension, retain informational text content, and improve writing (NGA Center & CCSSO, 2010;

Shanahan et al., 2010). However, if elementary students and teachers are to reap the benefits of using model texts, informational texts must offer *affordances* to the user (Cummins, 2013; Duke et al., 2013; NGA Center & CCSSO, 2010).

This content analysis has identified three limited affordances for identification of model texts: (1) most currently available informational texts use multiple text structures, (2) single-structure examples of some informational text structures appear to be severely limited, and (3) there is a lack of consistent and coordinated use of text features as signals of text structure. These limited affordances seem to be persistent in children's informational texts, with research as early as the 1960s (Niles, 1965) suggesting similar limitations. Researchers in the 1980s conducted substantial work with informational text (even creating examples of well-structured informational texts) and recommended that authors and publishers address these limitations to facilitate student learning (e.g., Anderson et al., 1980; Englert & Hiebert, 1984; Meyer, 1981, 1982). Even with the recent influx of informational texts published for children, these limitations seem to linger. Perhaps the purposeful use of text structure and text features is not yet viewed by publishers as a critical component of children's informational texts, or the use of a single structure is viewed by authors as secondary to content presentation. Perhaps it is because, as Armbruster and Anderson (1984) expressed, "We [were] humbled by the difficulty of writing 'considerate' text. We now wholeheartedly endorse a comment attributed to Nathaniel Hawthorne: 'Easy reading is damned hard writing'" (p. 3). Whatever the reason for these recurring limitations, we present in Table 5 recommendations to increase the affordances for model texts that exemplify a clear, explicitly marked organizational structure for teaching young students how to read and write informational texts.

Finally, as a means to begin addressing these recommendations, this content analysis has resulted in identification of informational texts that offer increased affordances as single-structure model texts and inclusion of informational text features as signals of top-level text structure. A listing of these texts is presented in Table 6. Full references for children's informational texts are presented in Appendix B.

Limitations

This content analysis was limited to the process and the proportion of the informational texts sampling. Children's informational texts were selected from listings provided by well-known publishing companies. This sampling does not encompass all publishing companies of children's informational text, and results obtained from other publishers may vary. Additionally, the sample size was 5% of the of 5,620 children's informational texts published by these selected companies. Although this grade-level stratified randomly selected sample is intended to be representative of these publishers' informational texts, results could potentially vary with other random text selections. A second limitation of this content analysis study was the conceptualization of variables. This particular content analysis focused on five conventional informational text structures and seven informational

Table 5. Recommendations to Increase Affordances of Children's Informational Text

Challenge	Recommendation
Of the texts ordered from publishers' lists of informational texts, 21% did not meet the criteria based on Duke's (2000) well-respected definition of informational texts. Thus, teachers cannot be confident that the texts purchased as informational texts will indeed be informational texts.	Publishers and teachers carefully examine informational text lists for potential misclassification. Publishers provide separate lists of biographical texts and informational texts.
The majority of informational texts analyzed used multiple organizational structures. Students will experience texts that use multiple organizational patterns throughout their lives, and multiple organizational patterns can be most appropriate for the presentation of information. However, to prepare students for multiple-structured texts, teachers need access to exemplary single-structured texts.	Publishers and authors consider text structure as an important component of informational text, with an increased focus on creation of more single-structured texts. Teacher identification of text structure of informational texts currently available in classroom and school libraries. Teacher identification of lengthy subsections from multiple-structured texts that utilize a single structure for use as model text. (However, students may not obtain the full benefits offered by an entire text that utilizes a single structure.)
Of the identified single-structured texts, description structure was predominant and examples of several structures were limited to nonexistent.	Publishers and authors consider the five organizational patterns of informational text and how each of these organizational patterns can be used to present content information. Publisher identification and labeling of text structure organization to increase creation of model texts for each structure. Teacher collaboration to identify single-structured informational texts for each of the five text structures. Distribution of lists of identified model texts for each of the five text structures.
Children's informational texts lacked important text features and text features often did signal structure.	Publishers and authors demonstrate renewed focus to include text features to signal structure in informational text. Teacher identification of informational texts that effectively use text features to signal structure.

text features. Results are limited to the conceptualization as presented for this study.

Conclusion

This content analysis has examined current children's informational texts to determine affordances within texts to teach young students how to read and write informational texts using model texts. Instruction that begins with clear, single-structured model texts scaffolds student learning as young children can more readily identify the organizational pattern to aid comprehension and composition. Students can

Table 6. Top-Level, Single-Structure Informational Texts and Signaling Text Features

	No. of Total Features	No. of Signaling Features	Ratio Signaling/Total
Description:			
Viking	6	6	1.00
Autumn	5	5	1.00
In the Dessert	5	5	1.00
Pyramids	5	5	1.00
The Planets	5	5	1.00
Tennis	5	5	1.00
Great Mammals	4	4	1.00
Shoes are Good to Wear	4	4	1.00
Signs	4	4	1.00
Using Fire	4	4	1.00
Animals in the Mountains	3	3	1.00
The World Around Us	3	3	1.00
Under the Ground	3	3	1.00
Unusual Machines	3	3	1.00
Trucks!	7	6	.86
Food in Colonial America	6	5	.83
More Than Man's Best Friend: The Story of Working Dogs	6	5	.83
Mountain Mammals	6	5	.83
Wonderfully Weird Animals	6	5	.83
Strength in Numbers	5	4	.80
Ants, Bees, and Other Social Insects	4	3	.75
Florida	4	3	.75
What is Touch?	7	5	.71
Caring for Pets	6	4	.67
Flags Flying	6	4	.67
Making Holes	3	2	.67
Using Tools	3	2	.67
Wild Weather	5	3	.60
Sequence:			
Life Cycles	6	6	1.00
From Tadpole to Frog	5	5	1.00
Make an Animal Mobile	5	5	1.00
Re-Cycles	5	5	1.00
From Grass to Milk (Sundance)	3	3	1.00
An Earthworm's Life	5	4	.80
March of the Penguins	5	4	.80
From Cane to Sugar	7	5	.71
From Cocoa Bean to Chocolate	7	5	.71
From Grass to Milk (Lerner)	7	5	.71
Make Mine Ice Cream	6	4	.67
Coming to America	5	3	.60
The Four Seasons	5	3	.60
From Seed to Dandelion	7	4	.57
Problem/solution:			
We Use Numbers	6	6	1.00
Sand	5	5	1.00
Did President Grant Really get a Ticket for Speeding in a Horse-drawn Carriage?	6	5	.83
Top 50 Questions: Skeletons	4	3	.75
If You Traveled on the Underground Railroad	7	5	.71
How's the Weather?	6	4	.67
Measuring Tools	6	4	.67
Why Do Snakes Hiss?	6	4	.67
Why Do Volcanoes Blow Their Tops?	6	4	.67
Compare/contrast:			
Now It's Hot	3	2	.67

then apply their knowledge of text structure with more complex texts that may use multiple structures or lack explicit signals or text features. Although some affordances are limited, this work seeks to expand the focus of publishers and authors on these features and to provide teachers with information on currently available texts with increased affordances as potential model texts.

Appendix A

Rater: _____ Title of text: _____

Descriptive (D)	Sequence (S)	Compare/Contrast (CC)	Cause & Effect (CE)	Problem/Solution (PS)
☐**Title:** signals a single topic label or category label of multiple topics.	☐**Title:** signals a time order, process, cycle, timeline, chronology, procedure, steps, and directions.	☐**Title:** signals how people, places, things, or actions are alike and different.	☐**Title:** signals how an initiating event leads to other events that culminate in an outcome or effect.	☐**Title:** signals that something went wrong and how it was or could be fixed or asks a question and provides an answer.
☐**Table of Contents:** signals a series of descriptions about single or multiple topics. -or- ☐No table of contents	☐**Table of Contents:** signals a time order, process, cycle, timeline, chronology, procedure, steps, and directions. -or- ☐ No table of contents	☐**Table of Contents:** signals how people, places, things, or actions are alike and different. -or- ☐No table of contents	☐**Table of Contents:** signals how an initiating event leads to other events that culminate in an outcome or effect. -or- ☐No table of contents	☐**Table of Contents:** signals that something went wrong and how it was or could be fixed or asks a question and provides an answer. -or- ☐No table of contents
☐**Headings:** signal a single topic label or category label of multiple topics. -or- ☐No headings	☐**Headings:** signal a time order, process, cycle, timeline, procedure, steps, or directions. -or- ☐ No headings	☐**Headings:** signal how people, places, things, or actions are alike and different. -or- ☐ No Headings	☐**Headings:** signal how an initiating event leads to other events that culminate in an outcome or effect. -or- ☐ No Headings	☐**Headings:** signal what went wrong and how it was or could be fixed or asks a question and provides an answer. -or- ☐ No Headings
☐**Introduction:** signals a single topic label or category label of multiple topics. -or- ☐No introduction	☐**Introduction:** signals a time order, process, cycle, timeline, procedure, steps, or directions. -or- ☐ No introduction	☐**Introduction:** signals how people, places, things, or actions are alike and different. -or- ☐No introduction	☐**Introduction:** signals how an initiating event leads to other events that culminate in an outcome or effect. -or- ☐No introduction	☐**Introduction:** signals what went wrong and how it was or could be fixed or asks a question and provides an answer. -or- ☐No introduction
☐**Paragraphs/sentences:** organized to describe a single topic label or category label of multiple topics.	☐**Paragraphs/sentences:** organized to explain a process, cycle, timeline, chronology, procedure, steps, and directions.	☐**Paragraphs/sentences:** organized to explain how people, places, things, or actions are alike and different.	☐**Paragraphs/sentences:** organized to explain how an initiating event leads to other events that culminate in an outcome or effect.	☐**Paragraphs/sentences:** organized to explain what went wrong and how it was or could be fixed or asks a question and provides an answer.
☐**Conclusion:** signals a single topic label or category label of multiple topics. -or- ☐No conclusion	☐**Conclusion:** signals a time order, process, cycle, timeline, procedure, steps, or directions. -or- ☐No conclusion	☐**Conclusion:** signals how people, places, things, or actions are alike and different. -or- ☐No conclusion	☐**Conclusion:** signals how an initiating event leads to other events that culminate in an outcome or effect. -or- ☐No conclusion	☐**Conclusion:** signals what went wrong and how it was or could be fixed or asks a question and provides an answer. -or- ☐No conclusion
☐**Graphical Features:** organized to represent a single topic label or category label of multiple topics.	☐**Graphical Features:** organized to explain a process, cycle, timeline, chronology, procedure, steps, and directions.	☐**Graphical Features:** organized to explain how people, places, things, or actions are alike and different.	☐**Graphical Features:** organized to explain how an initiating event leads to other events that culminate in an outcome or effect.	☐**Graphical Features:** organized to explain what went wrong and how it was or could be fixed or asks a question and provides an answer.

Classification:
Multiple Text Structures (More than one box checked here) D ☐ S ☐ CC ☐ CE ☐ PS ☐ Total # of text features included in text: _____
Single Text Structure (Only one box checked here) D ☐ S ☐ CC ☐ CE ☐ PS ☐ Total # of text features that signal or represent the top-level single structure:_____

Figure A1. Coding form for identification of top-level structure of informational text.

Appendix B

References for Children's Informational Text

Description Text Structure

Bacon, F. (2005). *Strength in numbers*. Austin, TX: Rigby.
Berger, M. (1993). *Wild weather*. Marlborough, MA: Newbridge.
Berger, M., & Berger, G. (2004). *Autumn*. New York: Scholastic.
Boothroyd, J. (2010). *What is touch?* Minneapolis: Lerner.
Bredeson, C. (2002). *Florida*. New York: Scholastic.
Canizares, S., & Chanko, P. (2004) *Signs*. New York: Scholastic.
De Mornay, D. (2003). *Shoes are good to wear*. New York: Scholastic.
Hill, C. (1998). *Great mammals*. Washington, DC: National Geographic.
Hirschman, K. (2004). *Ants, bees, and other social insects*. New York: Scholastic.
Jose, I. (2003). *In the desert*. New York: Scholastic.
Klingel, C., & Noyed, R. B. (2003). *Tennis*. Northborough, MA: Sundance.
Landau, E. (1996). *Mountain mammals*. New York: Scholastic.
Love, C., & Mack, L. (2007). *Viking*. New York: DK.
Mara, W. (2009). *Trucks!* Washington, DC: National Geographic.
Mooney, M. (2000). *Flags flying*. New York: Newbridge.
O'Keefe, M. (2004). *The planets*. New York: Sundance.
O'Sullivan, R. (2006). *More than man's best friend: The story of working dogs*. Washington, DC: National Geographic.
Parkes, B. (2007). *Using tools*. Marlborough, MA: Newbridge.
Pike, K. (2004). *Caring for pets*. New York: Sundance.
Ring, S. (2007). *Wonderfully weird animals*. Marlborough, MA: Newbridge.
Sloan, P., & Sloan, S. (1995). *Unusual machines*. Northborough, MA: Sundance/Newbridge.
Sloan, P., & Sloan, S. (1996). *The world around us*. Northborough, MA: Sundance/Newbridge.
Sloan, P., & Sloan, S. (1999). *Using fire*. Northborough, MA: Sundance.
Sullivan, E. A. (2004). *Pyramids*. Pelham, NY: Benchmark.
Thomas, M. (2002). *Food in colonial America*. New York: Scholastic.
Windsor, J. (1999). *Under the ground*. Austin, TX: Rigby.
Windsor, J. (2002). *Animals in the mountains*. Austin, TX: Rigby.
Windsor, J. (2003). *Making holes*. Austin, TX: Rigby.

Sequence Text Structure

Braithwaite, J. (2004). *From cane to sugar*. Minneapolis: Lerner.
The four seasons. (2007). Marlborough, MA: Sundance/Newbridge.
French, C. (2002). *Make an animal mobile*. Pelham, NY: Benchmark.
Himmelman, J. (2000). *An earthworm's life*. New York: Scholastic.
Kottke, J. (2000). *From tadpole to frog*. New York: Scholastic.
Maestro, B. (1996). *Coming to America: The story of immigration*. New York: Scholastic.
Make mine ice cream. (2007). Marlborough, MA: Newbridge.
Nelson, R. (2003). *From cocoa bean to chocolate*. Minneapolis: Lerner.
Roberts, J. (2004). *March of the penguins*. New York: National Geographic.
Ross, M. E. (2001). *Life cycles*. Minneapolis: Lerner.

Ross, M. E. (2002). *Re-cycles*. Minneapolis: Lerner.
Sloan, P., & Sloan, S. (1999). *From grass to milk*. Marlborough, MA: Sundance/Newbridge.
Taus-Bolstad, S. (2004). *From grass to milk*. Minneapolis: Lerner.
Weiss, E. (2008). *From seed to dandelion*. New York: Scholastic

Problem/Solution Text Structure

Burton, M., French, C., & Jones, T. (1999). *We use numbers*. Pelham, NY: Benchmark.
Clyne, M., & Griffiths, R. (2005). *Sand*. New York: DK.
Cusick, P. (2008). *How's the weather?* Austin, TX: Rigby.
Daronco, M., & Presti, L. (2011). *Measuring tools*. Pelham, NY: Benchmark.
Donovan, S. (2011). *Did President Grant really get a ticket for speeding in a horse-drawn carriage?* Minneapolis: Lerner.
Levine, E. (1988). *If you traveled on the underground railroad*. New York: Scholastic.

Compare/Contrast Text Structure

Haydon, J. (2002). *Now it's hot!* Barrington, IL: Rigby.

Multiple Text Structure

Aberg, R. (2003). *Map keys*. New York: Scholastic.
Adkins, J. (1997). *The wonder of light*. Marlborough, MA: Newbridge.
Adler, D. A. (2009). *Money madness*. New York: Scholastic.
Anman, Z. (2006). *Six simple machines*. Northborough, MA: Sundance.
Apte, S. (2010). *The Aztec empire*. New York: Scholastic.
Bair, D., & Wright, P. (2006). *Make your own crystals*. Austin, TX: Rigby.
Baker, L. (1990). *Life in the oceans*. New York: Scholastic.
Bauer, M. D. (2004). *Clouds*. New York: Scholastic.
Behr, A. (2008). *Lost in time*. Northborough, MA: Sundance.
Bennett, K. (2006). *Chesapeake Bay*. New York: Scholastic.
Berger, M. (1994). *Life in a coral reef*. New York: Newbridge.
Berger, M. (2007). *An apple a day*. Marlborough, MA: Newbridge.
Berger, M. (2007). *Life in the sea*. Marlborough, MA: Newbridge.
Berger, M. (2007). *Light*. Marlborough, MA: Newbridge.
Berger, M. (2007). *The world of dinosaurs*. Marlborough, MA: Newbridge.
Berger, S., & Chanko, P. (1999). *The boat book*. New York: Scholastic.
Bingham, C. (2003). *Human body*. New York: Dorling Kindersley Limited.
Bingham, C. (2003). *Whales and dolphins*. New York: DK.
Bingham, C. (2004). *Rocks and minerals*. New York: DK.
Blevins, W. (2004). *Where does food grow?* New York: Scholastic.
Boothroyd, J. (2010). *What is sight?* Minneapolis: Lerner.
Boothroyd, J. (2010). *What is smell?* Minneapolis: Lerner.
Boothroyd, J. (2010). *What is taste?* Minneapolis: Lerner.
Boothroyd, J. (2011). *What holds us to earth? A look at gravity*. Minneapolis: Lerner.
Branley, F. M. (1975). *Day light, night light*. New York: HarperCollins.
Branley, F. M. (1990). *Earthquakes*. New York: HarperCollins.
Brocker, S. (2003). *What a century!* Austin, TX: Rigby.
Carney, E. (2009). *Frogs!* Washington, DC: National Geographic.
Carson, M. K. (2005). *The mighty Mississippi*. New York: Sundance/Newbridge.
Cherry, L. (1992). *A river ran wild*. New York: Scholastic.

Costain, M. (2000). *Golden lion Tamarin monkeys*. Northborough, MA: Sundance.
Costain, M. (2006). *Into the earth*. Washington, DC: National Geographic.
Craig, C., Dalgleish, S., & Rohr, I. (2003). *The edge of extinction*. Northborough, MA: Sundance.
Craney, E. (2009). *Mummies*. Washington, DC: National Geographic.
Currie, S. (2003). *How animals communicate*. Marlborough, MA: Newbridge.
Davidson, A. (2005). *Our changing planet*. Austin, TX: Rigby.
Davidson, A. (2005). *Power-packed plants*. Austin, TX: Rigby.
Davis, S., & Wilson, J. (2001). *Living and growing*. Austin, TX: Rigby.
Davis, S., & Wilson, J. (2001). *Our bodies*. Austin, TX: Rigby.
De Capua, S. (2002). *We need directions!* New York: Scholastic.
De Capua, S. (2004). *Being a governor*. New York: Scholastic.
Dell, C. (2004). *What's for dinner?* Northborough, MA: Sundance.
Dobeck, M., & Bowman, C. (2006). *Our American folklore*. Northborough, MA: Sundance.
Einspruch, A. (2006). *Mysteries of the universe*. Washington, DC: National Geographic.
Feely, J. (2004). *Dragons*. Northborough, MA: Sundance.
Fern, A. (2001). *The bicycle book*. Austin, TX: Rigby.
Fowler, A. (1997). *Energy from the sun*. Danbury, CT: Children's Press.
Fowler, A. (1999). *Can you see the wind?* Danbury, CT: Children's Press.
Freeman, M. S. (2007). *Predators and prey*. Marlborough, MA: Newbridge.
Freeman, M. S. (2007). *The properties of materials*. Marlborough, MA: Newbridge.
Freeman, M. S. (2007). *Watching the weather*. Marlborough, MA: Newbridge.
Fridell, R. (2009). *Earth-friendly energy*. Minneapolis: Lerner Publications.
Gans, R. (1996). *How do birds find their way?* New York: HarperCollins.
Gibson, B. (2004). *A safe place to sleep*. Austin, TX: Rigby.
Goodfriend, A. (2008). *A day in the life of a computer*. Orlando, FL: Rigby.
Goodman, S. E. (2008). *Saving the whooping crane*. Minneapolis: Lerner.
Grams, K. (2006). *From your home to the world*. Northborough, MA: Sundance.
Gray, S., Holland, S., Lofthouse, A., Mack, L., Stamps, C., Star, F., . . . & York, P. (2009). *Animals around the world*. New York: DK.
Green, J. (2006). *Countries of the world: China*. Washington, DC: National Geographic.
Green, J. (2008). *Jamaica*. Washington, DC: National Geographic.
Halpern, M. (2007). *Underground towns, treetops, and other animal hiding places*. Washington, DC: National Geographic.
Hammonds, H. (2001). *Giant balloons*. Barrington, IL: Rigby.
Hammonds, H. (2001). *Wetlands*. Austin, TX: Rigby.
Hammonds, H. (2003). *Rubber*. Austin, TX: Rigby.
Haydon, J. (2001). *Homes around the world*. Austin, TX: Rigby.
Haydon, J. (2005). *Sea habitats*. Austin, TX: Rigby.
Heiligman, D. (2002). *Honey bees*. Washington, DC: National Geographic.
Heiligman, D. (2007). *Celebrate Passover with matzah, maror, and memories*. Washington, DC: National Geographic.
Hereford, N. (2007). *Life along the food chain*. Marlborough, MA: Newbridge.
Hirschmann, K. (2004). *Ants, bees, and other social insects*. New York: Scholastic.

Hock, P. (2009). *Our earth making less trash*. New York: Scholastic.
Hodge, J. (2010). *Plants we use*. Pelham, NY: Benchmark.
Hodgkins, F. (2007). *How people learned to fly*. New York: HarperCollins.
Hunter, A. (1998). *Cross a bridge*. New York: Scholastic.
Jakab, C. (2003). *Looking at worms*. Austin, TX: Rigby.
Jose, I. (2003). *Water*. New York: Scholastic.
Josephson, J. P. (2003). *Growing up in pioneer America*. Minneapolis: Lerner.
Kelley, J. A. (2010). *Meteor showers*. New York: Scholastic.
Kennedy, M. (2009). *Having fun at the White House*. New York: Scholastic.
Klingel, C., & Noyed, R. B. (2002). *The revolutionary war*. Northborough, MA: Sundance.
Klobuchar, L. A. (2008). *How Government works: The three branches*. Austin, TX: Rigby.
Koponen, L. (2009). *North America*. New York: Scholastic.
Kops, D. (2006). *Fireworks and other Chinese inventions*. Marlborough, MA: Newbridge.
Landau, E. (2008). *Ellis Island*. New York: Scholastic.
Landau, E. (2008). *The national anthem*. New York: Scholastic.
Landau, E. (2008). *The sun*. New York: Scholastic.
Landau, E. (2008). *Venus*. New York: Scholastic.
Leslie, T. (2005). *Divide it up!* New York: Scholastic.
Lord, S., & Epstein, J. (1986). *A day in space*. New York: Scholastic.
Lyons, S. (2004). *Electricity adds up*. Pelham, NY: Benchmark.
Macdonald, F. (2004). *You wouldn't want to be a medieval knight!* New York: Scholastic.
Mack, L. (2006). *Arctic and Antarctic*. New York: DK.
Mack, L. (2009). *Ancient Rome*. New York: DK.
Maestro, B. (1992). *How do apples grow?* New York: HarperCollins.
Magloff, L. (2003). *Volcano*. New York: DK.
Maloy, J. (2010). *The ancient Maya*. New York: Scholastic.
Markle, S. (2008). *Stick insects*. Minneapolis: Lerner.
Mataira, R. (2004). *Animals in the snow*. Austin, TX: Rigby.
McEvoy, P. (2002). *Birds*. New York: Newbridge.
Meadows, G. (2003). *Eating*. New York: Scholastic.
Medearis, A. (2008). *Cowboys on a ranch*. Orlando, FL: Rigby.
Meredith, S. M. (2010). *All work, no play*. Pelham, NY: Benchmark.
Miller, G. (2003). *Money: Then and now*. Northborough, MA: Sundance.
Miller, G. (2005). *Animal tool time*. Northborough, MA: Sundance.
Miller, G. (2005). *Chomper champs*. Northborough, MA: Sundance.
Milton, A. (2007). *Alive or not alive?* Marlborough, MA: Newbridge.
Moran, M. (2004). *Cowhands and cattle trails*. Pelham, NY: Benchmark.
Morris, A. (1989). *Bread, bread, bread*. New York: Scholastic.
Morrison, I. (2003). *Shifting sands*. Austin, TX: Rigby.
Nayer, J. (2001). *Communities*. New York: Newbridge.
Osborne, P., & Boyce, N. P. (2005). *Sabertooths and the ice age*. New York: Scholastic.
Parker, A., & Parker, C. (2000). *Antarctic seals*. Austin, TX: Rigby.
Parkes, B. (2007). *All kinds of change*. New York: Newbridge.

Petersen, C., & Petersen, D. (2001). *Cuba*. New York: Scholastic.
Pike, K. (2002). *Insects*. Marlborough, MA: Newbridge.
Pike, K. (2004). *My toys*. New York: Sundance/Newbridge.
Pike, K., & Turner, G. (2006). *Bar graphs*. Marlborough, MA: Newbridge.
Pike, K., & Turner, G. (2006). *Weight*. Marlborough, MA: Newbridge.
Porell, J. (2005). *Fire!* Northborough, MA: Sundance.
Randell, B. (1997). *Cattle*. Austin, TX: Rigby.
Randell, B., & Harper, C. (1998). *Goats*. Austin, TX: Rigby.
Ransom, C. (2011). *What was the Continental Congress?* Minneapolis: Lerner.
Ransom, C. (2011). *Why did English settlers come to Virginia?* Minneapolis: Lerner.
Riley, P. (1998). *Light and color*. New York: Scholastic.
Robb, A. (2006). *Tattoos, clothes, and body art*. New York: Sundance/Newbridge.
Rossi, A. (2004). *Cultures collide: Native Americans and Europeans 1494–1700*. Washington, DC: National Geographic.
Rothman, C. (2002). *Our flag*. New York: Scholastic.
Rubin, A. A. (2005). *Rock a remarkable resource*. New York: Sundance/Newbridge.
Rushby, P. (2006). *Mysteries of the fossil dig*. Washington, DC: National Geographic.
Sargent, B. (2006). *How much does it hold?* New York: Scholastic.
Schaefer, L. M. (2001). *We are all alike*. Pelham, NY: Benchmark.
Schmauss, J. K. (2008). *The water planet*. New York: Scholastic.
Shulman, L. (2004). *Ways of measuring: Then and now*. Northborough, MA: Sundance.
Sipiera, P. P. (1997). *Constellations*. New York: Scholastic.
Sloan, S. (1999). *Floating*. Northborough, MA: Sundance.
Sloan, P., & Sloan, S. (1998). *Ships and boats*. Littleton, MA: Sundance.
Sorensen, L. (2003). *The statue of liberty*. Marlborough, MA: Newbridge.
Stamper, J. B. (2003). *Pickles and preserves*. New York: Newbridge.
Stamps, C. (2010). *Horse*. New York: DK.
Star, F. (2009). *Shark*. New York: DK.
Stewart, M. (2011). *Is the Bermuda Triangle really a dangerous place?* Minneapolis: Lerner.
Storm, L. L. (2008). *Built below sea level: New Orleans*. New York: Scholastic.
Swartz, L., & Margolin, I. (2008). *The 10 coolest dance crazes*. New York: Scholastic.
Swinburne, S. R. (2001). *Guess whose shadow?* New York: Scholastic.
Taylor-Butler, C. (2008) *The respiratory system*. New York: Scholastic.
Thompson, G. (2006). *Serengeti journey: On safari in Africa*. Washington, DC: National Geographic.
Thomson, S. L. (2006). *Amazing snakes!* New York: Scholastic.
Tocci, S. (2004). *Oxygen*. New York: Scholastic.
Tocci, S. (2005). *Silicon*. New York: Scholastic.
Tomecek, S. (2002). *Dirt*. Washington, DC: National Geographic.
Tomecek, S. (2005). *Moon*. Washington, DC: National Geographic.
Trueit, T. S. (2007). *Thanksgiving*. New York: Scholastic.
Trumbauer, L. (2007). *Spinning a web*. Northborough, MA: Sundance.
Trumbauer, L. (2007). *What is matter?* Marlborough, MA: Newbridge.
Turner, K. (2007). *Australia*. Washington, DC: National Geographic.
Wade, M. D. (2003). *Cinco de Mayo*. New York: Scholastic.
Weber, R. (2004). *Lost cities*. Pelham, NY: Benchmark.

Weiss, E. (2008). *From pinecone to pine tree*. New York: Scholastic.
White, K. (2003). *Music technology*. Austin, TX: Rigby.
White, N. (2010). *Why polar bears like snow and flamingos don't*. Pelham, NY: Benchmark.
Whiting, S. (2006). *All about ants*. Washington, DC: National Geographic.
Wilcox, C. (2009). *Earth-friendly waste management*. Minneapolis: Lerner.
Willi, D. (2005). *Apple country*. New York: Sundance/Newbridge.
Wilt, V. T. (2005). *Lowell: At work in the mill*. New York: Newbridge.
Windsor, J. (2003). *Dinosaur nests*. Austin, TX: Rigby.
Woolley, M. (2004). *The coast*. Northborough, MA: Sundance.
Zoehfeld, K. W. (2001). *Terrible tyrannosaurs*. New York: Scholastic.

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References

Alvermann, D. E. (1981). The compensatory effect of graphic organizers on descriptive text. *Journal of Educational Research*, **75**, 44–48.
Anderson, T. H., & Armbruster, B. B. (1984). Content area textbooks. In R. C. Anderson, J. Osborn, & R. J. Tierney (Eds.), *Learning to read in American schools: Basal readers and content texts* (pp. 193–226). Hillsdale, NJ: Erlbaum.
Anderson, T. H., Armbruster, B. B., & Kantor, R. (1980). *How clearly written are children's textbooks? Or of bladderworts and alfalfa* (Reading Education Report No. 15F). Champaign, IL: Center for the Study of Reading.
Armbruster, B. B., & Anderson, T. H. (1982). *Structures for explanations in history textbooks: Or so what if Governor Stanford missed the spike and hit the rail?* (Technical Report No. 252). Champaign, IL: Center for the Study of Reading.
Armbruster, B. B., & Anderson, T. H. (1984). *Producing "considerate" expository text: Or easy reading is damned hard writing* (Reading Education Report No. 46). Champaign, IL: Center for the Study of Reading.
Armbruster, B. B., & Anderson, T. H. (1988). On selecting "considerate" content area textbooks. *RASE*, **9**, 47–52.
Armbruster, B. B., Anderson, T. H., & Ostertag, J. (1987). Does text structure/summarization instruction facilitate learning from expository text? *Reading Research Quarterly*, **22**, 331–346.
Armbruster, B. B., Anderson, T. H., & Ostertag, J. (1989). Teaching text structure to improve reading and writing. *Reading Teacher*, **43**, 130–137.
Brandt, D. M. (1978). *Prior knowledge of the author's schema and the comprehension of prose*. Unpublished doctoral dissertation, Arizona State University.
Cauchard, F., Eyrolle, H., Cellier, J., & Hyönä, J. (2010). Vertical perceptual span and the processing of visual signals in reading. *International Journal of Psychology*, **45**, 40–47.
Chall, J., & Snow, C. (1988). Influences of reading in low-income students. *Education Digest*, **54**, 53–56.
Chambliss, M. J., & Calfee, R. C. (1989). Designing science textbooks to enhance student understanding. *Educational Psychologist*, **24**, 307–322.
Chemero, A. (2003). An outline of a theory of affordances. *Ecological Psychology*, **15**, 181–195.

Clark, S. K., Jones, C. D., & Reutzel, D. R. (2013). Using the text structures of information books to teach writing in the primary grades. *Early Childhood Education Journal*, **41**(4), 265–271.

Coker, D. L. (2013). Writing instruction in preschool and kindergarten. In S. Graham, C. MacArthur, & J. Fitzgerald (Eds.), *Handbook of writing research* (2nd ed., pp. 26–47). New York: Guilford.

Cummins, S. (2013). *Close reading of informational texts: Assessment-driven instruction in grades 3–8*. New York: Guilford.

Cummins, S., & Stallmeyer-Gerard, C. (2011). Teaching for synthesis of informational texts with read-alouds. *Reading Teacher*, **64**, 394–405.

Davison, A. (1984). Readability—appraising text difficulty. In R. C. Anderson, J. Osborn, & R. J. Tierney (Eds.), *Learning to read in American schools: Basal readers and content texts* (pp. 121–139). Hillsdale, NJ: Erlbaum.

Dickson, S. V., Simmons, D. C., & Kame'enui, E. J. (1998). Text organization: Research bases. In D. C. Simmons & E. J. Kame'enui (Eds.), *What reading research tells us about children with diverse learning needs* (pp. 239–278). Mahwah, NJ: Erlbaum.

Donovan, C. A., & Smolkin, L. B. (2011). Supporting informational writing in the elementary grades. *Reading Teacher*, **64**, 406–416.

Duke, N. K. (2000). 3.6 minutes per day: The scarcity of informational texts in first grade. *Reading Research Quarterly*, **35**, 202–224.

Duke, N. K., Halliday, J. L., & Roberts, K. L. (2013). Reading standards for informational text. In L. M. Morrow, T. Shanahan, & K. K. Wixson (Eds.), *Teaching with the common core standards for English language arts, preK–2* (pp. 46–66). New York: Guilford.

Duke, N. K., Pearson, P. D., Strachan, S. L., & Billman, A. K. (2011). Essential elements of fostering and teaching reading comprehension. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about reading instruction* (4th ed., pp. 51–93). Newark, DE: International Reading Association.

Ellis, L. (1994). *Research methods in the social sciences*. Madison, WI: WCB Brown & Benchmark.

Englert, C. S., & Hiebert, E. H. (1984). Children's developing awareness of text structures in expository materials. *Journal of Educational Psychology*, **76**, 65–74.

Gersten, R., Fuchs, L. S., Williams, J. P., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of research. *Review of Educational Research*, **71**, 279–320.

Gibson, J. J. (1977). The theory of affordances. In R. Shaw & J. Bransford (Eds.), *Perceiving, acting and knowing*. Hillsdale, NJ: Erlbaum.

Gibson, J. J. (1979). *The ecological approach to visual perception*. Hillsdale, NJ: Erlbaum.

Hall, K. M., Sabey, B. L., & McClellan, M. (2005). Expository text comprehension: Helping primary-grade teachers use expository texts to full advantage. *Reading Psychology*, **26**, 211–234.

Hiebert, E. H., Englert, C. S., & Brennan, S. (1983). Awareness of text structure in recognition and production of expository discourse. *Journal of Reading Behavior*, **15**, 63–79.

Jonassen, D. (1985). *The technology of text: Principles for structuring, designing, and displaying text* (Vol. **2**). Englewood Cliffs, NJ: Educational Technology Publications.

Kaplan, J. S. (2003). Nonfiction books in the classroom: Undervalued, underused, and oversimplified. *English Journal*, **93**, 91–94.

Kintsch, W. (1977). On comprehending stories. In M. A. Just & P. A. Carpenter (Eds.), *Cognitive processes in comprehension* (pp. 33–62). Hillsdale, NJ: Erlbaum.

Kintsch, W. (2013). Revisiting the construction-integration model of text comprehension and its implications for instruction. In D. Alvermann, R. Ruddell, & N. Unrau (Eds.), *Theoretical models and processes of reading* (6th ed., pp. 807–839). Newark, DE: International Reading Association.

Kintsch W., & Kintsch, E. (2005). Comprehension. In S. G. Paris & S. A. Stahl (Eds.), *Current issues in reading comprehension and assessment* (pp. 71–92). Mahwah, NJ: Erlbaum.

Krippendorff, K. (2013). *Content analysis: An introduction to its methodology* (3rd ed.). Los Angeles: Sage.

Kucan, L., Hapgood, S., & Palinscar, A. S., 2011). Teachers' specialized knowledge for supporting student comprehension in text-based discussions. *Elementary School Journal*, **112**, 61–82.

Lorch, R. F., Jr., & Lorch, E. P. (1996). Effects of organizational signals on free recall of expository text. *Journal of Educational Psychology*, **88**, 38–48.

Lorch, R. F., Jr., Lorch, E. P., Ritchey, K., McGovern, L., & Coleman, D. (2001). Effects of headings on text summarization. *Contemporary Educational Psychology*, **26**, 171–191.

Marinak, B. A., & Gambrell, L. B. (2009). Ways to teach about informational text. *Social Studies and the Young Learner*, **22**, 19–22.

Mayer, R. E. (1984). Aids to text comprehension. *Educational Psychologist*, **19**, 30–43.

McGee, L. M. (1982). Awareness of text structure: Effects on children's recall of expository text. *Reading Research Quarterly*, **17**, 581–590.

Meyer, B. J. F. (1975). Identification of the structure of prose and its implications for the study of reading and memory. *Journal of Literacy Research*, **7**, 7–47.

Meyer, B. J. F. (1979). Organizational patterns in prose and their use in reading. In M. L. Kamil & A. J. Moe (Eds.), *Reading research: Studies and applications* (pp. 109–117). Clemson, SC: National Reading Conference.

Meyer, B. J .F. (1981, April). *Prose analysis: Procedures, purposes, and problems* (Research Report No. 11). Paper presented at the American Educational Research Association convention, Los Angeles. (ERIC Document Reproduction Service ED201972)

Meyer, B. J .F. (1982). Reading research and the composition teacher: The importance of plans. *College Composition and Communication*, **33**, 37–49.

Meyer, B. J. F., Brandt, D. M., & Bluth, G. J. (1980). Use of top-level structure in text: Key for reading comprehension of ninth-grade students. *Reading Research Quarterly*, **16**, 72–103.

Meyer, B. J. F., & Freedle, R. D. (1984). Effects of discourse type on recall. *American Educational Research Journal*, **21**, 121–143.

Meyer, B. J. F., Middlemiss, W., Theodorou, E., Brezinski, K. L., McDougall, J., & Bartlett, B. J. (2002). Effects of structure strategy instruction delivered to fifth-grade children using the Internet with and without the aid of older adult tutors. *Journal of Educational Psychology*, **94**, 486–519.

Meyer, B. J. F., & Poon, L. W. (2001). Effects of structure strategy training and signaling on recall of text. *Journal of Educational Psychology*, **93**, 141–159.

Meyer, B. J. F., & Rice, G. E. (1984). The structure of text. In P. D. Pearson (Ed.), *Handbook of reading research* (Vol. **1**, pp. 319–351). Mahwah, NJ: Erlbaum.

Meyer, B. J. F., & Wijekumar, K. (2007). A web-based tutoring system for the structure strategy: Theoretical background, design, and findings. In D. S. McNamara (Ed.), *Reading comprehension strategies: Theories, interventions, and technologies* (pp. 347–375). Mahwah, NJ: Erlbaum.

Moss, B. (2008). The information text gap: The mismatch between non-narrative text types in basal readers and 2009 NAEP recommended guidelines. *Journal of Literacy Research*, **40**, 201–219.

National Assessment Governing Board (NAGB). (2008). *Reading framework for the 2009 National Assessment of Educational Progress*. Washington, DC: U.S. Government Printing Office.

National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards for English language arts and literacy in history/social studies, science, and technical subjects*. Washington, DC: Authors. Retrieved from www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf

National Institute of Child Health and Human Development (NICHD). (2000). *Report of the National Reading Panel: Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups* (NIH Publication No. 00-4754). Washington, DC: U.S. Government Printing Office.

Ness, M. (2011). Teachers' use of and attitudes toward informational text in K–5 classrooms. *Reading Psychology*, **32**, 28–53.

Neuendorf, K. A. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage.

Niles, O. S. (1965). Organization perceived. In H. H. Herber (Ed.), *Perspectives in reading: Developing study skills in secondary schools* (pp. 57–76). Newark, DE: International Reading Association.

Norman, D. A. (1988). *The design of everyday things*. New York: Doubleday.

Pace, A. J. (1982). Analyzing and describing the structure of text. In D. Jonassen (Ed.), *The technology of text: Principles for structuring, designing, and displaying text* (Vol. **1**, pp. 15–27). Englewood Cliffs, NJ: Educational Technology Publications.

Palmer, R. G., & Stewart, R. A. (2005). Models for using nonfiction in the primary grades. *Reading Teacher*, **58**, 426–434.

Pearson, P. B. (1974–1975). The effects of grammatical complexity on children's comprehension, recall, and conception of certain semantic relations. *Reading Research Quarterly*, **10**, 155–192.

Popping, R. (1988). On agreement indices for nominal data. In W. E. Saris & S. N. Gallhofer (Eds.), *Sociometric research: Vol. 1. Data collection and scaling* (pp. 90–105). New York: St. Martin's.

Raphael, T. E., Englert, C. S., & Kirschner, B. W. (1986). *The impact of text structure instruction and school context on students' comprehension and production of expository text* (Research Series No. 177). East Lansing: Michigan State University for Research on Teaching.

Richgels, D. J., McGee, L. M., Lomax, R. G., & Sheard, C. (1987). Awareness of four text structures: Effects in recall of expository text. *Reading Research Quarterly*, **22**, 177–196.

Ritchey, K., Schuster, J., & Allen, J. (2008). How the relationship between text and headings influences readers' memory. *Contemporary Educational Psychology*, **4**, 859–874.

Scarantino, A. (2003). Affordances explained. *Philosophy of Science*, **70**, 949–961.

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

Surber, J. R., & Schroeder, M. (2007). Effect of prior domain knowledge and headings on processing of informative text. *Contemporary Educational Psychology*, **32**, 485–498.

Taylor, B. M. (1992). Text structure, comprehension, and recall. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about reading instruction* (pp. 220–235). Newark DE: International Reading Association.

Taylor, K. K. (1986). Summary writing by young children. *Reading Research Quarterly*, **21**, 193–208.

van Dijk, T. A. (1979). Relevance assignment in discourse comprehension. *Discourse Processes*, **2**, 113–126.

Weaver, C. A., & Kintsch, W. (1996). Expository text. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. **2**, pp. 230–245). White Plains, NY: Longman.

Williams, J. P. (2005). Instruction in reading comprehension for primary-grade students: A focus on text structure. *Journal of Special Education*, **39**, 6–18.

Williams, J. P., Nubla-Kung, A. M., Pollini, S., Stafford, K. B., Garcia, A., & Snyder, A. E. (2007). Teaching cause-effect text structure through social studies content to at-risk second graders. *Journal of Learning Disabilities*, **40**, 111–120.

Williams, J. P., Stafford, K. B., Lauer, K. D., Hall, K. M., & Pollini, S. (2009). Embedding reading comprehension training in content-area instruction. *Journal of Educational Psychology*, **101**, 1–20.

Wischenbart, R. (2010). The global ranking of the publishing industry 2009. *Publishing Research Quarterly*, **26**, 16–23.