Routledge
Taylor & Francis Group

EXPOSITORY TEXT COMPREHENSION: HELPING PRIMARY-GRADE TEACHERS USE EXPOSITORY TEXTS TO FULL ADVANTAGE

KENDRA M. HALL, BRENDA L. SABEY, and MICHELLE McCLELLAN

Brigham Young University, Provo, Utah, USA

This study investigated the effectiveness of an instructional program designed to teach expository text comprehension during guided reading. Participants included 72 second graders in six classrooms, organized into four guided reading groups in each class (n = 24). The six classes were randomly assigned to one of three groups: Text Structure, Content, and No Instruction. The Text Structure group focused on text structure awareness. The Content group focused on background knowledge and vocabulary. The No Instruction group carried out their regular instruction. Findings suggest that text structure is an effective strategy for promoting expository text comprehension and that young children benefit from well-structured texts.

Generally speaking there are two major types of text—narrative and expository. Although some characteristics of these categories overlap, these two types of texts serve unique and individual purposes. They also have different structural patterns, which refer to the organization of ideas in the text and the relationships that those ideas form to communicate meaning (Meyer & Rice, 1984).

Narrative Texts

Narrative, or "story" texts, depict events, actions, emotions, or situations that people in a particular culture experience (Graesser, Golding, & Long, 1991). Narrative texts typically have a hierarchical structure. Story grammar (setting, characters, problem, solution, and outcome) helps to highlight the hierarchical structure and to provide a framework for the placement of elements and episodes within the structure.

Address correspondence to Kendra M. Hall, Brigham Young University, Department of Teacher Education, 206-T MCKB, Provo, UT 84602. E-mail: kendra_hall@byu.edu

Expository Texts

Expository, or "informational" texts convey and communicate factual information. These texts contain more unfamiliar vocabulary and concepts, fewer ideas related to the here-and-now, and less information directly related to personal experience. Both narrative and expository texts have hierarchical structures (Meyer & Poon, 2001), however, expository texts differ from narratives in their structural patterns. Narrative texts tend to follow one structural pattern (story grammar), whereas multiple structures are used in expository texts. Basic structural patterns include *description*, *sequence or procedure*, *enumeration*, *causation*, *problem/solution*, and *compare/contrast* (Meyer & Freedle, 1984).

Use of Expository Text in The Primary Grades

Most early childhood educators are neglecting expository texts in their classrooms while, perhaps, overemphasizing narrative texts (Duke, 2000). This is particularly disconcerting as we see many children entering upper elementary school unprepared to deal with the increasing comprehension demands. In fact, this neglect of expository text in the primary grades may be a major contributor to the prevalent decline in reading achievement after the third grade (Chall, Jacobs, & Baldwin, 1990; Chall & Snow, 1988).

Effective use of expository texts in early childhood classrooms may help to minimize what researchers have referred to as the "fourth-grade slump" (an overall decline in reading scores as children enter the fourth grade; Chall et al., 1990) and prepare children to comprehend the expository texts that are integral to success in later schooling and beyond. However, there are some difficulties associated with the appropriate use of expository texts in early elementary school classrooms. Young children tend to have difficulty comprehending expository texts, due in part to their limited cognitive development and experience. This difficulty, however, may also result from manipulable, controllable sources, such as (a) availability of well-written texts, (b) limited exposure to expository texts, and (c) teachers' lack of familiarity with expository instruction.

Limited Availability of Well-Written Expository Texts

The first controllable source of difficulty is the limited number of well-written expository texts. Many of the expository texts that do exist are poorly written, lack a clear structure, or switch frequently between structures (Calfee & Chambliss, 1988; Kantor, Andersen, & Armbruster, 1983). Expository texts for children also tend to lack sufficient signals such as overviews, topic or main idea statements, and summaries, or may even use these signals in inappropriate ways (Dickson, Simmons, & Kameenui, 1998; Meyer & Poon, 2001). Research suggests that well-structured expository texts facilitate comprehension of main ideas (Dickson et al., 1998). Thus poorly written texts most likely add to the comprehension difficulties of young students. At first glance this source of difficulty may not seem within a teacher's control; however, teachers can carefully select appropriate texts and/or provide appropriate support for texts that are not well-structured. There have been attempts to address this problem, and in recent years some attention seems to have been paid to improving expository texts for young children (Hiebert, 1999; Moss, 1997). Information book series for young children are now available in multiple subjects, as publishers are responding to the need for well-written expository texts (i.e., *Eyewitness Junior* published by Knopf Books for Young Readers, *Eye Wonder* by DK Publishing, *Let's-Read-and-Find-Out Science* by HarperTrophy, and *QuickReads* by Elfreda Hiebert). Although most of these books still have limited types of expository structures (mostly description, collection, and sequence), some include more complex structures with key content words and clear grammatical connections. Thus while expository texts from the past have been sparse, poorly written and/or lacked a salient structure, good quality texts are becoming more abundant, with more well-written, well-structured exposition.

Limited Exposure to Expository Texts

The second controllable source of difficulty is children's limited exposure to expository texts. The amount of experience that children receive with expository texts certainly impacts their ability to deal effectively with this type of text. Substantial experience with a genre is necessary for knowledge of that genre to develop (Duke,

2000). Children must see, hear, read, and write expository materials before they can be expected to comprehend the content and structure of these texts.

For children in elementary grades, lack of exposure to expository instruction may be manifest in writing as well as reading. Although students in the older elementary grades often encounter content-based texts and written directions and procedures, they are not often required to write expository texts (Moss, Leone, & Dipillo, 1997). Inexperience with expository texts can cause difficulty when students are expected to write demanding texts such as lengthy explanations or term papers. Deficits due to inadequate exposure to these texts and structures spill over from reading to writing.

Limited Teacher Familiarity with Instruction

The third controllable source of children's difficulty with expository texts is limited teacher familiarity with instruction using expository texts. When surveyed, educators of young children admitted that they were more comfortable using story narratives and seldom used expository texts with their students (Davinroy & Hiebert, 1984). Many teachers appear to be unsure of how to help children deal with expository texts. This includes the teachers knowledge of how to: (a) alter expository texts for young children, (b) support children's comprehension through oral and visual means, and (c) teach children to productively work with the specific text structures. Educating teachers to effectively use expository text strategies may also help alleviate some of the comprehension difficulties children face.

Helping Address Children's Difficulty with Expository Texts

As discussed, children's difficulty with expository text comprehension is attributable, at least in part, to limitations in availability, exposure, and limited teacher familiarity. Fortunately, these difficulties can be addressed and potentially resolved. Perhaps the best way to address these difficulties is through quality instructional programs designed to teach comprehension strategies using expository texts. These programs should be explicit but not scripted

(Wilder & Williams, 2001; Williams et al., 2002) and should embody current research about comprehension instruction.

Instructional programs that are designed to improve young children's comprehension of expository texts could have one of several areas of focus, such as vocabulary, text structure, or text signals. Further research is needed in each of these areas, particularly as they relate to young children. The focus of the instructional program developed for this study was text structure awareness. Text structure awareness has been shown to be an important foundation for facilitating text comprehension and recall (Dickson et al., 1998; Englert & Thomas, 1987; Meyer, 1975; Meyer & Freedle, 1984; Oakhill & Yuill, 1996; Richgels, McGee, Lomax, & Sheard, 1987; Taylor, 1982). Readers who understand a text's organizational structure typically find greater success in identifying important information and relationships between ideas. Several intervention studies aimed at teaching text structure illustrate the benefits of structure knowledge for older readers (Armbruster, Anderson, & Ostertag, 1987; Englert & Hiebert, 1984; Henk, 1988; McGee & Richgels, 1985; Meyer, Brandt, & Bluth, 1980; Meyer et al., 2002; Meyer & Poon, 2001; Weaver & Kintsch, 1991). The benefit of text structure knowledge for younger children is only beginning to be considered (Hall et al., in press). Such research has been conducted in the context of whole class instruction; however, there has been no study of instructional programs focused on expository texts in the context of small groups, more specifically during guided reading. With the National Reading Panel (2000) findings on the benefits of guided reading, these strategies need to be adjusted and tested within this context. In fact, expository text comprehension strategies may be taught more effectively when children are instructed in small groups (grouped by reading ability) where the teacher can address the specific needs of the individual readers.

Purpose of the Present Study

The purpose of the present study was to investigate the effectiveness of an instructional program designed to teach second graders an expository text comprehension strategy during small-group (guided-reading) instruction. The instructional program has been proven successful in the context of whole class instruction in an

urban setting (Hall et al., in press). The present study extends those findings to the context of guided reading in a suburban setting. Each-guided reading group consisted of 3–4 homogeneously grouped second graders. The teacher met with each group for 20–25 minutes/two or three times per week. The instructional program was compared to a traditional guided-reading instructional program with focus on background knowledge and vocabulary, as well as a no-treatment control.

Method

Six second-grade classrooms were randomly assigned to one of three conditions: Text Structure, Content, and No Instruction. A pre/post multi-group comparison design was used. Pre- and post-assessments consisted of audio taped, individual interviews. Dependent measures were derived from interview responses.

Participants

Seventy-two second graders in six classrooms in one elementary school in the Mountain West participated in this study. The school, which has been designated as a Title 1 school, is considered highly impacted when compared to surrounding schools. Approximately 46% of the students in the school receive state aid in the form of free or reduced-rate lunch. The school's population is approximately 87% Caucasian, 11% Hispanic, 1% Pacific Islander, and 1% Asian/Other. Approximately 12% of the student body has limited English proficiency.

Classrooms

Six second-grade teachers volunteered to have their classrooms participate in the study. Each of the classrooms had between four and six guided-reading groups. One of the classrooms (4 guided-reading groups) was dropped from the study because of problems with fidelity of treatment. Some of the classrooms with five or six groups often had groups with just one child. These groups were dropped from the study to ensure that all instruction was taking place in small groups rather than in a one-on-one instructional setting. As a result, the final analysis included 5 classrooms and

20 guided-reading groups. The Text Structure group included 31 students in eight guided-reading groups. The Content group included 17 students in four guided-reading groups. The No Instruction group included 24 students in eight guided-reading groups.

Teachers

Participation in this study by teachers was voluntary. The teachers' classroom experience ranged from 1 to 5 years. Teachers were provided with all of the materials necessary to carry out the lessons. Each teacher also received a book store gift certificate and a collection of twenty-four informational books for the school's guided-reading library.

Administration of Pre- and Post-Assessments

Each of the participating children was administered the pre- and post-assessments. The pre-assessment consisted of two major components: (a) Word Knowledge and Comprehension subtests of the Gates-MacGinitie Reading Test (MacGinitie, MacGinitie, Maria, & Dreyer, 2000), and (b) a pre-assessment specifically written to assess the particular aspects of the instructional program (summary of compare/contrast text, clue words, matrix, and vocabulary). The post-assessment consisted of the same measures as the pre-assessment as well as several transfer measures. The Gates-MacGinitie Reading Test was administered only at the beginning of the study and was used to determine whether differences in comprehension abilities existed among groups at the outset of the study.

Introducing the Program to Teachers

Small group or individual instructional sessions lasting about thirty minutes were held to familiarize teachers with the program. During these sessions, the first author reviewed the lessons with the teachers step by step and discussed the program's overall instructional goals. The teachers were asked to tailor the instruction

> Dolphins and roadrunners are interesting animals. Dolphins and roadrunners are both warm-blooded. Dolphins communicate using grunts and clicks. Roadrunners lay eggs. Dolphins are different; they have babies. Roadrunners can run as fast as 15 miles an hour. Roadrunners live on the land; however, dolphins live in the water. Dolphins and roadrunners are alike; they eat other animals.

FIGURE 1 Sample of a well-structured compare/contrast paragraph.

according to their individual teaching styles and professional judgment (Wilder & Williams, 2001).

Materials

Both instructional programs used two types of text: (a) informational books from a guided-reading collection, and (b) well-structured compare/contrast paragraphs written by the authors (see Figure 1). Books were selected based upon the level of readers in each guided-reading group, appropriateness of content (i.e., how well they addressed the key components of animal classification), and quality of photographs. Well-structured paragraphs, written by the authors for the purpose of this study, were also used to compare and contrast the animal characteristics related to classification (i.e., body covering—hair, scales, smooth, feathers, etc.; see Figure 1). Other materials for both programs included graphic organizers and paragraph frames.

Instructional Programs

The Text Structure Program

The Text Structure program consisted of three main sections: (a) introducing the text to students, (b) reading the text, and (c) discussing and revisiting the text.

INTRODUCING THE TEXT TO STUDENTS
    Before reading the text, the teacher introduced the children to the content of the book, major vocabulary words, and clue words

(key words that highlight comparisons—*alike, both, similar, but, different, however, contrast*). Vocabulary words were introduced and defined, and students were asked to look for these words while reading the text. Students reviewed and identified the list of clue words and then used them in practice sentences. As the lessons progressed, the students were also reminded to try and use clue words in other situations and with other content.

READING THE TEXT

Following the introduction of the text, the students read the text aloud. Each student was given his or her own copy of the text, and all students were asked to mumble read. "Mumble reading" is a strategy used during guided reading to allow the teacher to "listen in" on the individual students reading (Fountas & Pinnell, 1996). The teacher would point out clue words, help identify difficult vocabulary words, and assist students with any other word identification difficulties.

DISCUSSING AND REVISITING THE TEXT

After reading the text, the teachers discussed and revisited the text with the students. The purpose of this section was to help the students understand the text, make comparisons, and show what they had learned. First, the teachers discussed and reviewed vocabulary words and concepts. In lessons with the well-structured compare/contrast paragraphs the students completed a graphic organizer (matrix) that highlighted the compare/contrast structure (see Figure 2). After completing the matrix, the teacher prompted the students to reiterate the comparisons they had read in the text. The students completed between 1–4 matrices—one matrix for each comparison in the text. The final step was to create a written summary of the text. In the beginning, students were given paragraph frames to support the writing of their summary. Once the students understood the process of writing a summary, they wrote summaries without a paragraph frame.

The Content Program

The lessons for the Content program were similar to the Text Structure program in terms of materials, length of instruction, and overall lesson sequence. Like the Text Structure program, the Content program consisted of three main sections: (a) introducing the text

Animal Matrix
Finding out how animals are the same and different

Animal	Is the animal warm-blooded or cold-blooded?	
	Warm-blooded	Cold-blooded
Lion	X	
Snakes		X

Lions and snakes are:

the same   (different)

How?
Lions are warm-blooded, but snakes are cold-blooded.

FIGURE 2 Sample matrix with well-structured comparison statement.

to the students, (b) reading the text, and (c) discussing and revis-iting the text. The major difference between the two programs was in the overall focus of the instruction. The focus of the Text Structure program was to highlight the structure of the text as a means for facilitating comprehension. In contrast, the main focus of the Content program was content; or factual information about animal classification, and associated vocabulary.

INTRODUCING THE TEXT TO THE STUDENTS

The text was first introduced to the students. During this part of the lesson, the teacher discussed vocabulary words and concepts, in an effort to activate the children's prior knowledge about the topic(s). There was no discussion of clue words or examination of comparisons.

READING THE TEXT

After the introduction, the students read the text. Like the students in the Text Structure program, the students in the con-tent program were organized into guided-reading groups. Each student was given a copy of the text and asked to "mumble read" independently. As students read, the teacher would "listen in" and provide appropriate support with difficult vocabulary words, and any other word identification difficulties.

DISCUSSING AND REVISITING THE TEXT

Once the text was read, the teacher discussed and revisited the text with the students. Then, the teacher reviewed the target vocabulary words and major concepts found in the text. Next, the students organized the information in the text using a graphic organizer (a topical web—which highlights main topics and subtopics rather than comparisons). At the conclusion of the lesson, the students wrote a summary of the text using the information they organized in the topical web. Students initially completed their summaries with paragraph frames and then, in later lessons, wrote their summaries on their own without a frame.

Observations and Fidelity of Treatment

Several observations were conducted by the authors to ensure fidelity of treatment and to get an overall sense of how the lessons were being implemented. Each teacher was observed for 45 to 60 minutes approximately once per week during the 6 weeks of instruction. Observers recorded three things: (a) how closely the teacher followed the lesson outline (each part of the lesson was recorded as occurring or not occurring—i.e., background information/clue words, vocabulary, reading of text, review, matrix/topical web, and paragraph frame); (b) time spent on the lesson; and (c) student engagement, measured by the average number of students on task at 5-minute intervals during the lesson. No observations were conducted in the No Instruction classrooms.

In terms of fidelity of treatment, both treatment groups were comparable. Lessons from both groups had six components: background information/clue words, vocabulary, reading of the text, lesson review, matrix/topical web, and paragraph frame. Fidelity observers looked for the presence or absence of each of the six lesson components. From these observations, it appeared that all but one of the teachers were operating within the established guidelines: 76% of the lesson components in the Text Structure program and 72% of the lesson components in the Content program were taught. Given that teachers had been told to use the lessons as a general guideline rather than as a script (Wilder & Williams, 2001), compliance to the lesson guidelines was considered good. Fidelity of treatment observations revealed that one of the two teachers in the Content group was not following the lesson outline (only 60%

of the lesson components were being taught). This teacher was also adding content and placing particular focus on text structure during each lesson. After several attempts to encourage her to follow the lesson outline, we decided to drop her class from the study.

In terms of time and student engagement, there were no differences between the Text Structure and Content groups. The groups spent comparable amounts of time on instruction: The Text Structure group averaged 21.2 ($SD = 6.09$) minutes, and the Content group averaged 18.3 ($SD = 7.54$) minutes ($t = 1.23$, $p = .227$). Both groups also had high levels of student engagement. The Text Structure group averaged 98% of students on task, and the Content group averaged 92% of students on task.

Teacher Debriefing

At the conclusion of the post-assessments, the authors met with all of the teachers, as a whole group and in groups of two, to explain the purpose of the study and receive feedback. The whole-group meeting was used to reveal the purpose of the study, including details about what all three groups had been teaching and to answer any questions. Following the meeting with the whole group, the small-group meetings (2 teachers) were conducted to get more detailed feedback about the teacher's experience with the instructional program they had been asked to teach. Teachers who had participated in the No Instruction group were asked to describe content and strategies they had focused on during guided reading.

Pre- and Post-Assessments

Pre-Assessment

The pre-assessment included the following four measures: 1) *summary of a compare/contrast text,* 2) *identification of clue words in a paragraph,* 3) *matrix,* and 4) *vocabulary.* The first measure, *summary of a compare/contrast paragraph*, was used to measure students' ability to create a well-structured summary of a compare/contrast text. The second measure, *identification of clue words in a paragraph*, was used to measure students' knowledge of words that indicate how something is the same or different. The third measure, the *matrix*, was used to measure students' ability to complete a graphic organizer

and generate a well-structured comparison statement. The fourth measure, *vocabulary*, was used to measure students' ability to define key vocabulary words related to animal classification (e.g., *mammal, reptile, amphibian, bird, fish, hair, scales, feather, oxygen, warm-blooded, cold-blooded*).

Post-Assessment

The post-assessment included the same four measures as the pre-assessment, as well as five additional measures, for a total of nine: 1–3) *three summaries of compare/contrast text,* 4) *summary of an unstructured text,* 5) *recall of clue words,* 6) *matrix,* 7) *overall use of clue words,* 8) *vocabulary,* and 9) *conceptual understanding of compare/contrast.* The first three measures *three summaries of compare/contrast text,* represented various levels of transfer: The first summary was used to measure far transfer (content unrelated to the instructional program—e.g., trees); the second summary was used to measure near transfer (content related to the instructional program but not seen during instruction—e.g., polar bears and turtles); the third summary was used to measure instruction (a paragraph seen during instruction—e.g., alligators and lions). The fourth measure, *summary of an unstructured text,* measured the student's ability to impose the learned structure (compare/contrast) on an unstructured text: that is, to make comparisons using information in the text. The fifth measure, *recall of clue words,* measured the student's ability to recall a list of clue words (e.g., "What words tell you how something is the same or how something is different?"). The sixth measure, *matrix,* was used to measure the student's ability to correctly complete the matrix and create a well-structured comparison statement based on the information from the matrix (see Figure 2). The seventh measure, *overall use of clue words,* was used to measure the student's use of clue words across all of the four summaries (e.g., count of clue words correctly used in the three initial summaries and in the summary of an unstructured text). The eighth measure, *vocabulary,* was used to measure a student's ability to define key *vocabulary* words related to animal classification (e.g., *mammal, reptile, amphibian, bird, fish, hair, scales, feather, oxygen, warm-blooded, cold-blooded*). The ninth and final measure, *conceptual understanding of compare/contrast,* was a measure of the student's ability to correctly define compare

and contrast (e.g., What does compare mean? What does contrast mean?).

Scoring Procedures

See Table 1 for a complete description of scoring procedures.

RELIABILITY

In order to determine inter-rater reliability, scoring for protocols was divided between two scorers. The pair of scorers scored 10% of the post-interviews to establish reliability. Two or three protocols were randomly chosen from each classroom to ensure equal representation among the three treatment groups. Inter-rater reliability was 90% or higher for all measures. After reliability had

TABLE 1 Description of Scoring

Measure	Scoring
Three summaries of compare/contrast text	Number of well-structured comparison statements (correct information with a clue word) in student-generated summary of paragraph. Scored 0–4.
Summary of unstructured text	Number of well-structured comparison statements (correct information with a clue word) in student-generated summary of paragraph. Scored 0–4.
Recall of clue words	Number of clue words recalled. Scored 0–7.
Matrix	Correct completion of matrix and generation of a well-structured statement based on matrix information (correct information and use of a clue word). Each matrix scored 0–2. There were a total of four matrices with a total score 0–8.
Overall use of clue words	Number of clue words used in summaries (three summaries of compare/contrast text and summary of unstructured text). No max score.
Vocabulary	Number of vocabulary words correctly defined. Scored 0–9.
Conceptual understanding of compare/contrast	Accurate definition of *compare* and *contrast*. Scored 0–2.

been established, the protocols were divided into two groups and scored by one of the two scorers. Protocols were divided by classroom so that both scorers scored an equal number of protocols from each of the three treatment groups.

Results

Characteristics of the Participants

A total of 72 students in six classrooms, consisting of 20 guided reading groups, participated in the study, including 46 males and 26 females. The Word Knowledge and Comprehension subtests of the Gates-MacGinitie Reading Test (MacGinitie et al., 2000) were given at the beginning of the study. There were no significant differences between the three treatment groups (Text Structure, Content, and No Instruction) on (a) mean score on the Word Knowledge subtest, $F(2, 8) = 2.31$, and (b) mean score on Comprehension subtest, $F(2, 8) = 4.38$. There was a level effect for both Word Knowledge and Comprehension $F(3, 8) = 10.75$ ($p < .05$), and $F(3, 8) = 10.48$ ($p < .05$), respectively. There was no group × level interaction. All statistical analyses were performed with guided reading group (intact groups as they received instruction) as the unit of analysis.

Pre-Interview

There were no significant differences on any of the pre-interview measures. Table 2 presents the means and standard deviations of the pre-interview scores as a function of instructional treatment, as well as summary statistics.

All of the five measures on the pre-interview were used to evaluate students' performance prior to instruction. This was important to ensure that students were not already competent on instructional tasks. Although the vocabulary scores were higher than expected, there was still room for growth, and all of the other mean scores for the five pre-interview measures were close to zero. Most importantly, there were no significant differences as a function of instructional condition.

TABLE 2 Pre-Interview—Mean and *SD*

	Text Structure $n = 8$	Content $n = 4$	No Instruction $n = 8$	*F*
Summary	0.26	0.19	0.20	0.16
Well-structured comparative statements—oral (max. = 4)	(0.28)	(0.23)	(0.23)	
Clue words	0.34	0.21	0.35	0.09
(max. = 4)	(0.44)	(0.31)	(0.69)	
Graphic organizer: Matrix	2.36	2.60	1.91	1.06
(max. = 6)	(0.63)	(0.43)	(0.72)	
Vocabulary concepts	5.53	5.38	5.16	0.18
(max. = 9)	(0.72)	(1.07)	(1.23)	

Note. n = # of guided reading groups.
* = $p < .05$, ** = $p \leq .01$, *** = $p \leq .001$.

Post-Interview

Table 3 presents means and standard deviations of the post-interview scores, as well as summary statistics. Post-interview measures included the following nine measures: (1–3) *three summaries of compare/contrast text*, (4) *summary of an unstructured text*, (5) *recall of clue words*, (6) *matrix*, (7) *overall use of clue words*, (8) *vocabulary*, and (9) *conceptual understanding of compare/contrast*. The measures were divided into three categories: (1) summaries, (2) strategies, and (3) concepts.

SUMMARIES

The first three measures were *three summaries of compare/contrast texts*, each representing a different level of transfer. The first summary was far transfer, or the student's ability to summarize a compare/contrast paragraph about content unrelated to the instructional program. There was no overall effect of treatment, $F(2, 8) = 2.08$ ($p = 0.187$). There was no level effect and no group × level interaction.

The second summary was near transfer, or the student's ability to summarize a compare/contrast paragraph about content related to the instructional program, but not seen during instruction. There was an overall effect of treatment, $F(2, 8) = 6.17$ ($p = .024$). Specific comparisons indicate that the Text Structure group scored significantly higher than the Content group or the

TABLE 3 Post-Interview—Mean and *SD*

	Text Structure $n = 8$	Content $n = 4$	No Instruction $n = 8$	*F*
Summaries				
1. Summary				
Content <u>unrelated</u> to instruction	1.73	0.74	1.15	2.08
Well-structured comparative	(0.68)	(0.52)	(0.69)	
statements—oral (max. = 4)				
2. Summary				
Content <u>related</u> to instruction	1.73	0.81	0.91	6.17*
Well-Structured Comparative	(0.48)	(0.24)	(0.36)	
Statements—oral (max. = 4)				
3. Summary				
Content <u>in</u> instruction	1.99	0.51	0.62	21.15***
Well-structured comparative	(0.47)	(0.34)	(0.33)	
Statements—oral (max. = 4)				
4. Summary				
Unstructured text	0.94	0.83	0.91	.193
Well-structured comparative	(0.24)	(0.47)	(0.28)	
statements—oral (max. = 4)				
Strategies				
5. Recall of clue words	5.32	0.45	0.41	
(max = 7)	(1.39)	(0.61)	(0.86)	28.28***
6. Matrix	7.13	2.62	3.02	
(max = 8)	(0.58)	(0.95)	(0.74)	74.11***
7. Use of clue words	8.78	4.41	5.24	
(no max score)	(2.15)	(1.12)	(1.44)	7.76*
Concepts				
8. Vocabulary words	7.39	6.05	6.56	0.83
(max = 9)	(1.25)	(1.07)	(1.79)	
9. Compare/contrast	1.19	0.31	0.45	9.11**
(max = 2)	(0.31)	(0.28)	(0.44)	

Note. n = # of guided reading groups.

* = $p < .05$, ** = $p < .01$, *** = $p < .001$.

No Instruction group, $p < .05$ and $p < .05$, respectively. There was no significant difference between the Content and No Instruction groups. There was also no level effect and no group × level interaction.

The third summary was no transfer, or the student's ability to summarize a compare/contrast paragraph seen during the instructional program. There was an overall effect of treatment,

$F(2, 8) = 21.15$ ($p = .001$). Specific comparisons indicate that the Text Structure group scored significantly higher than the Content group or the No Instruction group, $p < .001$ and $p < 001$, respectively. There was no significant difference between the Content and No Instruction group. There was also no level effect and no group × level interaction.

The final summary, *a summary of unstructured paragraph*, was intended to determine whether or not students could impose the learned structure on an unstructured text. There was no overall effect of treatment, $F(2, 8) = .193$ ($p = 0.828$). There was also no level effect and no group × level interaction.

STRATEGIES

The first of the three strategy measures was *recall of clue words*. This was a measure of the student's ability to recall a list of clue words. There was an overall effect of treatment, $F(2, 8) = 28.28$ ($p = .000$). Specific comparisons indicate that the Text Structure group scored significantly higher than the Content group and the No Instruction group, $p < .001$ and $p < .001$, respectively. There was no significant difference between the Content and No Instruction group. There was also no level effect and no group × level interaction.

The second strategy measure was the *matrix*, or the student's ability to use a graphic organizer to organize information from the text. There was an overall effect of treatment, $F(2, 8) = 74.11$ ($p = .000$). Specific comparisons indicate that the Text Structure group scored significantly higher than the Content group and the No Instruction group, $p < .001$ and $p < .001$, respectively. There was no significant difference between the Content and No Instruction group. There was also no level effect and no group × level interaction.

The third and final strategy measure was *use of clue words*, or the student's ability to use the clue words in their summaries. There was an overall effect of treatment, $F(2, 8) = 7.759$ ($p = .013$). Specific comparisons indicate that the Text Structure group scored significantly higher than the Content group and the No Instruction group, $p < .05$ and $p < .05$, respectively. There was no significant difference between the Content and No Instruction group. There was also no level effect and no group × level interaction.

CONCEPTS

The first concept measure was *vocabulary,* or the student's ability to define key vocabulary words related to animal classification. There was no overall effect of treatment, $F(2, 8) = 0.83$ ($p = 0.471$). There was also no level effect and no group × level interaction.

The second concept measure was the *conceptual understanding of compare/contrast* (e.g., What does compare mean? What does contrast mean?). There was an overall effect of treatment, $F(2, 8) = 9.11$ ($p = .009$). Specific comparisons indicate that the Text Structure group scored significantly higher than the Content group and the No Instruction group, $p < .01$, $p < .01$, respectively. There was no significant difference between the Content and No Instruction group on this measure. There was also no level effect and no group × level interaction.

Effect Sizes

Effect sizes for the measures on which significant differences were found ranged from 0.61 to 0.95 all considered large effects (Cohen, 1988). This suggests that overall our text structure program was indeed effective.

Discussion

Results of this study suggest that text structure instruction is an effective strategy to improve second graders' comprehension of expository texts. Students who received text structure training were able to effectively use two expository text comprehension strategies (i.e., clue words and a graphic organizer), gain a conceptual understanding of compare and contrast, and produce well-structured summaries better than those students who received content instruction or no instruction. These strategies/abilities are necessary to organize expository information and ultimately make sense of expository texts.

It should also be noted that the instructional program lasted only 6 weeks. With this short intervention one may consider it somewhat unlikely to find differences. As such, the treatment differences found in this study may hint at the strength of the instructional program as well as what may be possible, in terms of student

gains, if the instruction were conducted over a longer period of time (6 months or 1 year).

Transfer

There were two measures of far transfer, *summary of a paragraph about content unrelated to instruction* and *summary of unstructured texts.* Results, which demonstrate no significant difference on these measures, may be related to two factors: 1) the length of instruction, and 2) the difficulty of dealing with unstructured texts. The instructional program took place in 10 lessons over the course of 6 weeks. As indicated by the results, this may be enough time to see differences on several of the measures, however, it may not be enough time for second graders to learn the target strategies in a way that allows for transfer. Hall et al. (in press) found that after 15 lessons over the course of 8 weeks of instruction, second graders were able to transfer these strategies. The contrast suggests that the students in this study needed more instructional time to be able to successfully transfer the learned skills/strategies. Similarly, the students' inability to transfer the strategies to an unstructured text in this study may also be related to the difficulty of dealing with unstructured texts (Chambliss & Calfee, 1989). This also suggests the need for teachers to use well-structured expository texts as the nature of structure appears to have an impact on comprehension.

Level Effect

Another point of interest was the lack of level effect. All of the guided reading groups were organized by ability, as described by the teachers and confirmed by the level effect on the Gates-MacGinitie Reading Test. Results suggest that the instructional program does not disadvantage those students in the lowest guided reading groups or those who typically struggle in school. While the procedure for homogenously grouping children is not necessarily standardized and is generally subjective, it is still important to note that those students who had been labeled as having low reading abilities performed as well as those students who had been labeled as having average or high abilities.

Implications

Several factors appear to be critical in terms of promoting young children's comprehension of expository text. The first factor is instruction in text structure awareness. This type of instruction, comprised of appropriate strategies such as clue words and graphic organizers, appears to improve children's comprehension of expository texts. The second factor is the structure of the text. The results of our study suggest that young children experience greater difficulty with unstructured texts. Teachers need to carefully select quality, well-structured texts for children in the early grades. The third factor is exposure. Children need appropriate and extensive exposure to expository texts with frequent opportunities to employ comprehension strategies. Without enough exposure and practice, children are not able to transfer these strategies to new content and/or to unstructured texts. The conclusion of the third factor "exposure" reaches beyond the scope of our data, although comparisons between the results of the current study and previous studies of text structure awareness (Hall et al., in press) suggest that students need ample exposure in order to be able to transfer strategies.

The new national reading initiatives are requiring that we look forward and anticipate some of the requirements that our students will face as they progress through elementary school grades (i.e. Elementary and Secondary Education Act, 2002). Other publications from federal government and professional associations also highlight the need for improved early literacy instruction (Hiebert & Taylor, 2000; Morrow & Asbury, 2003; National Reading Panel, 2000; Pearson & Duke, 2002). Quality expository text comprehension instruction as a part of literacy instruction in the early grades may play a part in providing young children with the preparation they need to meet these increasing requirements and succeed in both in school and their adult lives.

It should also be noted that text-structure awareness is only one of many strategies to promote expository text comprehension. Other strategies include vocabulary and text signals (i.e., headings, overviews, etc). Some research has suggested the importance of these strategies (Leung, 1992; Lorch & Lorch, 1995; Senechal, 1997); however, more research is needed to determine the best way to teach these strategies to young children.

References

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.

Calfee, R. C., & Chambliss, M. J. (1988). Beyond decoding: Pictures of expository prose. *Annals of Dyslexia, 38*, 243–257.

Chall, J. S., Jacobs, V. A., & Baldwin, L. E. (1990). *The reading crisis: Why poor children fall behind.* Cambridge, MA: Harvard University Press.

Chall, J. S., & Snow, C. E. (1988). Influences on reading in low-income students. *The Education Digest, 54*, 53–6.

Chambliss, M. J., & Calfee, R. C. (1989). Designing science textbooks to enhance student understanding. *Educational Psychologist, 24*, 307–322.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Davinroy, K. H., & Hiebert, E. H. (1984). An examination of teachers' thinking about assessment of expository text. In C. K. Kinzer & D. J. Leu (Eds.), *Multidimensional aspects of literacy research, theory, and practice* (pp. 60–71). Chicago: National Reading Conference.

Dickson, S. V., Simmons, D. C., & Kameenui, E. J. (1998). Text organization: Research bases. In D. C. Simmons & E. J. Kameenui (Eds.), *What reading research tells us about children with diverse learning needs: Bases and basics* (pp. 239–277). Mahwah, NJ: Erlbaum.

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

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

Englert, C. S., & Thomas, C. C. (1987). Sensitivity to text structure in reading and writing: A comparison between learning disabled and non-learning disabled students. *Learning Disability Quarterly, 10*, 93–105.

Fountas, I. C., & Pinnell, G. S. (1996). *Guided reading: Good first teaching for all children.* Portsmouth, NH: Heinemann.

Graesser, A., Golding, J. M., & Long, D. L. (1991). Narrative representation and comprehension. In R. Barr, M. L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of Reading Research* (Vol. II). New York: Longman.

Hall, K. M., Williams, J. P., Lauer, K. D., Stafford, K. B., DeSisto, L. A., & deCani, J. S. (in press). Expository text comprehension in the primary grade classroom. *Journal of Educational Psychology.*

Hierbert, E. H. (1999). Text matters in learning to read. *Reading Teacher, 52*, 552–567.

Hiebert, E. H., Taylor, B. M. (2000). Beginning reading instruction: Research on early interventions. In M. L. Kamil, P. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of Reading Research* (Vol. III). Mahwah, NJ: Erlbaum.

Henk, W. A. (1988). Effects of top-level comparison-contrast text structures on reading comprehension performance. *Reading Research and Instruction, 28*(1), 1–17.

Kantor, R. N., Andersen, T. H., & Armbruster, B. B. (1983). How inconsiderate are children's textbooks? *Journal of Curriculum Studies, 15*, 61–72.

Leung, C. B., (1992). Effects of word-related variables on vocabulary growth repeated read-aloud events. In C. K. Kinzer & D. K. Leu (Eds.), *Literacy research, theory, and practice: Views from many perspectives: Forty-first Yearbook of the National Reading Conference* (pp. 491–498). Chicago: The National Reading Conference.

Lorch, R. F., & Lorch, E. P. (1995). Effects of organizational signals on text-processing strategies. *Journal of Educational Psychology, 87*(4), 537–544.

MacGinitie, W. H., MacGinitie, R. K., Maria, K., & Dreyer, L. G. (2000). *Gates-MacGinitie Reading Tests (4th ed).* Itasca, IL: Riverside Publishing.

McGee, L. M., & Richgels, D. J. (1985). Teaching expository text structure to elementary students. *The Reading Teacher, 39*, 739–748.

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

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. O. (1984). Effects of discourse type on recall. *American Educational Research Journal, 21*, 121–143.

Meyer, B. J. F., & Poon, L. W. (2001). Effects of structure 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 R. Barr, M. L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of Reading Research* (Vol. I). New York: Longman.

Meyer, B.J. F., Theodorou, E., Brezenski, K. L., Middlemiss, W., 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.

Morrow, L. M., & Asbury, E. (2003). Current practices in early literacy development. In L. M. Morrow, L. B. Gambrell, & M. Pressley (Eds.), *Best practices in literacy instruction* (2nd ed., pp. 43–64). New York: Guilford.

Moss, B. (1997). A quantitative assessment of first graders' retelling of expository text. *Reading Research and Instruction, 37*, 1–13.

Moss, B., Leone, S., & Dipillo, M. L. (1997). Exploring the literature of fact: Linking reading and writing through information trade books. *Language Arts, 74*, 418–429.

Moss, B., & Newton, E. (1998, December). *An examination of the informational text genre in recent basal readers.* Paper presented at the National Reading Conference, Austin, TX.

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction.* Washington, DC: National Institute of Child Health and Human Development.

Oakhill, J., & Yuill, N. (1996). Higher order factors in comprehension disability: Processes and remediation. In C. Cornoldi and J. Oakhill (Eds.), *Reading Comprehension Difficulties.* Mahwah, NJ: Erlbaum.

Pearson, P. D., & Duke, N. (2002). Comprehension instruction in the primary grades. In C. C. Block & M. Pressley (Eds.), *Comprehension instruction: Research-based practices* (pp. 247–258). New York: Guilford.

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

Senechal, M. (1997). The differential effect of storybook reading on preschoolers' acquisition of expressive and receptive vocabulary. *Journal of Child Language, 24*(1), 123–138.

Taylor, B. M. (1982). Text structure and children's comprehension and memory for expository material. *Educational Psychology, 74,* 323–340.

Wilder, A. A., & Williams, J. P. (2001). Students with severe learning disabilities can learn higher-order comprehension skills. *Journal of Educational Psychology, 93*(2), 268–278.

Williams, J. P., Lauer, K. D., Hall, K. M., Lord, K. M., Gugga, S. S., Bak, S. J., Jacobs, P. R., & deCani, J. S. (2002). Teaching elementary school students to identify story themes. *Journal of Educational Psychology, 94*(2), 235–248.

Weaver, C. A., III, & Kintsch, W. (1991). Expository text. In R. Barr, M. L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 230–244). White Plains, NY: Longman.