Rethinking Reading Comprehension Instruction: A Comparison of Instruction for Strategies and Content Approaches

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ABSTRACT

Reports from research and the larger educational community demonstrate that too many students have limited ability to comprehend texts. The research reported here involved a two-year study in which standardized comprehension instruction for representations of two major approaches was designed and implemented. The effectiveness of the two experimental comprehension instructional approaches (content and strategies) and a control approach were compared. Content instruction focused student attention on the content of the text through open, meaning-based questions about the text. In strategies instruction, students were taught specific procedures to guide their access to text during reading of the text. Lessons for the control approach were developed using questions available in the teacher's edition of the basal reading program used in the participating classrooms. Student participants were all fifth graders in a low-performing urban district. In addition to assessments of comprehension of lesson texts and an analysis of lesson discourse, three assessments were developed to compare student ability to transfer knowledge gained. The results were consistent from Year 1 to Year 2. No differences were seen on one measure of lesson-text comprehension, the sentence verification technique. However, for narrative recall and expository learning probes, content students outperformed strategies students, and occasionally, the basal control students outperformed strategies students. For one of the transfer assessments, there was a modest effect in favor of the content students. Transcripts of the lessons were examined, and differences in amount of talk about the text and length of student response also favored the content approach.

The pursuit of more precise understandings of comprehension instruction has been an active, ongoing area of research, at least since Dolores Durkin's (1978–1979) well-known criticism that very little went on in classrooms that could be called comprehension instruction. The research reported here addresses the need for more precise understandings of present-day comprehension instruction through the implementation of standardized lessons on common texts for two approaches to comprehension instruction, a strategies approach and a content approach, and a comparison of their effects. The strategies approach centers on the direct teaching of specific procedures, such as summarizing, making inferences, and generating questions, and using them in working with text. The other approach to comprehension, which we have labeled a content approach, focuses on keeping students' attention directed toward the content of what they are reading and working through the text to build a representation of the ideas through discussion.

Given that comprehension is such a complex cognitive endeavor and is affected by, at least, the reader, the text, and the context, comprehension research has considered many features as contributing to student outcomes. Here we will provide a glimpse into some major areas of comprehension instructional research as a way of illustrating the ancestry of the approaches we are investigating. The framework that we will use to provide this glimpse is the traditional perspective of before, during, and after reading.

Considerations of what activities should happen before reading have centered on upgrading background knowledge as a way to support students as they read. Studies have examined background knowledge both in terms of how it functions (Anderson & Pearson, 1984; Johnson-Laird, 1983; Van Dijk & Kintsch, 1983) and

how it can be upgraded. The majority of studies that have examined effects of background knowledge has demonstrated that upgrading can enhance students' comprehension. This result has been found with primary-grade children (Beck, Omanson, & McKeown, 1982; Pearson, Hansen, & Gordon, 1979), intermediate-grade students (McKeown, Beck, Sinatra, & Loxterman, 1992), middle school students (Graves, Cooke, & LaBerge, 1983), and high school students (Hood, 1981). Two other prominent facets that have been pursued in the before-reading arena are purpose for reading and instruction of vocabulary to be encountered in an upcoming selection. Research on providing students, or asking students to develop, a purpose for reading is sparse, but the studies that have been done show positive effects (Tierney & Cunningham, 1984). Despite the scant amount of research, purpose for reading has become an ingrained practice in conventional reading lessons. Teaching vocabulary can enhance comprehension of text if the kind of instruction provided helps students build meaningful associations to their knowledge base and more than a brief definition is provided (Baumann, Kame'enui, & Ash, 2003).

Before considering during-reading activities, which are the focus of this paper, we will touch on after-reading activities. After-reading activities often involve one or another form of questioning. After Anderson and Biddle (1975) reported that questions asked after reading yielded better comprehension than merely reviewing the text did, attention turned to investigating which kinds of questions were most effective. Examples of questions singled out for being more effective include those that ask about the most important text information (Rickards, 1976), application questions (Rickards & Hatcher, 1977–1978), and high-level questions (Yost, Avila, & Vexler, 1977). Beck and McKeown (1981) developed a procedure to help teachers create questions based on the most important information and the sequence of that information throughout the text.

Another avenue explored in developing effective after-reading activities is interpretive discussion. Such discussions typically focus on prompting students to respond to a "big question" that arises from the text, with an eye toward fostering critical-reflective thinking about text ideas (Wilkinson, Soter, & Murphy, in press). Approaches to interpretive discussion that are backed by evidence of success include Junior Great Books (Great Books Foundation, 1987), Collaborative Reasoning (Anderson, Chinn, Waggoner, & Nguyen, 1998), Philosophy for Children (Sharp, 1995), and Grand Conversations (Eeds & Wells, 1989).

During-reading interventions emerged as efforts to influence readers' ongoing interactions with text. The historical roots of during-reading interventions are manifested in studies of inserted questions. Studies by Watts and Anderson (1971) and Rothkopf (1966, 1972) suggested that when students respond to questions during reading, their understanding of the text is stronger than it is if they simply read the text. Tierney and Cunningham (1984), in their review of comprehension instruction, suggested that deeper understanding of during-reading questions was a worthy avenue to pursue but that it needed to be tied to models of the text, of the reader, or of mental processes.

Theoretical Foundations and Current Status of Strategies and Content Approaches

The development of the two approaches used in the research reported here—strategies and content—came in response to considering models of mental processing as suggestions of ways to intervene for comprehension development. Specifically, as is discussed in the next section, the strategies approach developed from models of thinking and learning processes and the content approach from models of text processing. A crucial implication of processing models is that learners need to be mentally active to process text successfully. A common feature of both the strategies and content approaches is that they aim to engender active student engagement with reading.

A major distinction between the two approaches is that strategy instruction encourages students to think about their mental processes and, on that basis, to execute specific strategies with which to interact with text. In contrast, content instruction attempts to engage students in the process of attending to text ideas and building a mental representation of the ideas, with no direction to consider specific mental processes.

Strategies

The notion of providing instruction in strategies, routines for dealing with text, arose from work in developmental psychology that had established the active, strategic nature of learning that developed as children matured. Studies were then conducted that taught strategies for general learning tasks. The strategies used in such studies included rehearsal, categorization, and elaboration (Brown, Bransford, Ferrara, & Campione, 1983).

Based on the developmental work, Brown and her colleagues investigated the extent to which students used various strategies for studying, such as note-taking and underlining (Brown, 1981, 1982b; Brown & Smiley, 1977). From their work, Brown and her colleagues surmised that it might be possible to improve comprehension of young children or less-able learners

by teaching them effective study strategies (Brown & Smiley, 1978). The eventual manifestation of this line of work in relation to reading was reciprocal teaching, an approach that taught young students to apply strategies of summarizing, questioning, clarifying, and predicting (Palincsar & Brown, 1984).

Strategies instruction also finds roots in models of thinking. Symons, Snyder, Cariglia-Bull, and Pressley (1989) traced notions of strategy teaching to the theories of Baron (1985) and Sternberg (1979, 1982), both of whom emphasized that during the process of thinking in problem-solving, competent thinkers employ strategies such as identifying their goal, monitoring their progress, and evaluating evidence. The reasoning that followed was that providing young students with some procedures they could employ while reading could facilitate their comprehension. These roots led Pressley et al. (1992) to develop transactional strategies instruction, an approach in which the teacher explains and models strategies and uses these strategies to guide dialogue about text.

In addition to reciprocal teaching (Palincsar & Brown, 1984) and transactional strategies (Pressley et al., 1992), programs of strategy instruction by Paris, Cross, and Lipson (1984) and Duffy and Roehler (1989) have also had a sustained impact on the area of strategies instruction. Paris et al. focused their instructional approach, informed strategies for learning, on developing awareness of the goals of reading and the value of using strategies to pursue those goals. Their approach is designed to teach students to evaluate, plan, and regulate as they build awareness of their processing. The strategies taught in the informed strategies for learning approach include understanding the purposes of reading, activating background knowledge, allocating attention to main ideas, evaluating critically, monitoring comprehension, and drawing inferences. The work of Duffy (1987) emphasized self-regulation and self-monitoring, focusing on using strategies to remove blockages to comprehension. They emphasized the role of direct explanation of strategies and the role of explicit modeling in the instruction. Beyond these influential programmatic approaches to strategies instruction, the strategies literature comprises additional strategies programs (see, e.g., Anderson & Roit, 1993; Block, 1993; Klingner, Vaughn, & Schumm, 1998) and numerous smaller studies on a variety of strategies—implemented both individually and in combination.

The most prominent review of the strategies literature was part of the National Reading Panel (NRP) report (National Institute of Child Health and Human Development [NICHD], 2000) that concluded that "the past two decades of research appear to support the enthusiastic advocacy of instruction of reading strategies" (p. 4-46). The report identifies seven individual strategies that the panel found to be supported by solid evidence for improving comprehension: comprehension monitoring, cooperative learning, graphic and semantic organizers, question answering, question generation, story structure, and summarization. The report summarizes the effectiveness of the studies in each area, providing a picture of overall success with using the strategies.

Content

Although models of thinking and general learning underlie strategies instruction, models developed to explain specifically how a reader processes text (see, e.g., Graesser, Singer, & Trabasso, 1994; Kintsch, 1974; Trabasso, Secco, & van den Broek, 1984; van den Broek, Young, Tzeng, & Linderholm, 1998) are the roots of a content approach to comprehension. Text-processing models take the perspective that the mental processes in reading focus on the development of coherence based on organizing the meaningful elements of the text. From a text-processing perspective, a reader moves through text identifying each new piece of text information and deciding how it relates to information already given and to background knowledge (see Kintsch & van Dijk, 1978). The focus is on what readers do with text information to represent it and integrate it into a coherent whole.

A text-processing perspective on comprehension suggests that a content orientation may be a productive direction for instructional intervention. That is, comprehension enhancement might derive from a focus on continually striving for meaning as reading of the text moves along rather than considering when and how to call up specific routines to deal with new information. A number of researchers have speculated that such an approach might be an alternative to direct strategies teaching (Baker, 2002; Carver, 1987; Dole, Duffy, Roehler, & Pearson, 1991; Gersten, Fuchs, Williams, & Baker, 2001; Kucan & Beck, 1997; Pearson & Fielding, 1991).

The body of research on content-focused approaches is smaller than that of strategies approaches, and questioning the author (QtA; Beck & McKeown, 2006; Beck, McKeown, Sandora, Kucan, & Worthy, 1996) may be the approach that is most explicitly oriented toward a text-processing view. The text-processing approach that QtA connects with most directly is Kintsch's (1998) construction–integration model, in which there are two phases: the construction phase, in which readers activate textual information, and the integration phase, in which the activated ideas are integrated.

Other approaches that center on meaningful talk about a text include in their orientation a sociocognitive perspective, where the group is seen as forming an interpretive community that jointly constructs meaning. Such approaches generally fall under the label

collaborative discussion and typically initiate discussion by focusing on a theme from the text or an issue-related question, such as a question about a character's motives. These approaches include instructional conversations (Saunders & Goldenberg, 1999), collaborative reasoning (Chinn, Anderson, & Waggoner, 2001), dialogic instruction (Nystrand, 1997), and Junior Great Books (Dennis & Moldof, 1983).

Summarizing approaches that focus on meaningful talk about text, Applebee, Langer, Nystrand, and Gamoran (2003) noted that although the approaches have different vocabulary and routines, the form and focus of the interventions significantly overlap, and "results converge to suggest that comprehension of difficult text can be significantly enhanced by replacing traditional I-R-E [Initiation-Response-Evaluation] patterns of instruction with discussion-based activities" (Applebee et al., 2003, p. 693). Other researchers have found that discussion around text can promote problem-solving, comprehension, and learning (Anderson et al., 1998; Nystrand, 1997; Wegerif, Mercer, & Dawes, 1999). Discussion that leads to such outcomes features open questions, student control of interpretive authority, more student than teacher talk, and teacher responses that are based on students' responses (see, e.g., Beck et al., 1996; Chinn, O'Donnell, & Jinks, 2000; Nystrand, Wu, Gamoran, Zeiser, & Long, 2003). Thus, there appears to be a convergence of results that discussion-based practices are effective for comprehension improvement, similar to the convergence of results on the effectiveness of strategies instruction.

What We Still Don't Know About Both Approaches

An issue with both approaches is that there is still not clear guidance on how to proceed instructionally. In the case of strategies instruction, it seems that to make instructional decisions we need to know which strategies to use, how they should be taught, and how they should be used in the course of reading. The available research leaves all these factors in doubt. In terms of which strategies are key, a large number of candidates have been identified, with the National Reading Council report (Snow, Burns, & Griffin, 1998) and the NRP report (NICHD, 2000) listing overlapping but different sets of strategies that claim effectiveness. The more recent work on strategies has advocated the instruction of multiple strategies and the flexible coordination of them. But which set of strategies should go into the mix is not clear.

How strategies should be taught is not easily derived from the research. One problem here is that what goes on under a strategy label is not consistent from study to study. In some cases, the same strategy label is given to very different sets of activities. Our analysis of the 18 studies highlighted in the NRP report (NICHD, 2000) as having shown positive results from instruction in summarizing showed a variety of tasks and activities. For instance, in one summarization study, students were taught steps for creating a summary, including the following: (1) select main information, (2) delete trivial information, and (3) relate to supporting information (Rinehart, Stahl, & Erickson, 1986). In another summarization study, students were asked direct questions about the literal content of the text for the purpose of leading students to draw an inference about a character's actions (Carnine, Kame'enui, & Woolfson, 1982).

A similarly confounded picture emerges from examination of the studies labeled comprehension monitoring. A study in that category by Schmitt (1988) instructed students in activating prior knowledge, setting purposes, generating and answering prequestions, forming hypotheses, verifying or rejecting hypotheses, evaluating predictions, and summarizing. In contrast, a study by Miller (1985) in the same category included teaching students to ask themselves questions as they read, such as "Is there anything wrong with the story?" and to underline problems they found. Thus, not only do activities under comprehension monitoring vary widely but studies also include activities that are the domain of another strategy, such as summarizing and asking questions.

The foregoing discussion casts no aspersions on the quality of the activities used within the studies but rather points out that the sum total of studies leaves us without a consistent picture of which strategies are effective and what is effective about them. Typically, research in content approaches to comprehension provide only general directives on how students were brought into discussion or how teachers learned to question and to respond to students' contributions in ways that were productive toward building a coherent representation. It may be that practice focusing on what is important and making connections initiates readers' mental engagement with such strategies as summarization and inference, but they are not dealt with explicitly. Graesser (2007) suggested that in the construction–integration model, "strategies exist but they do not drive the comprehension engine. Instead, the front seat of comprehension lies in the bottom-up activation" (p. 11) of text ideas and the integration of those ideas.

Outcomes measured in content approaches include quality of discussion and comprehension of a story that students had read and discussed and only rarely investigate subsequent achievement. For one content approach, QtA, although the focus of research has been on changes in classroom discourse, three studies have also included investigations of achievement (Beck et

al., 1996; Beck & McKeown, 1998; Sandora, Beck, & McKeown, 1999). Sandora et al. compared the effects on students' comprehension of QtA and Junior Great Books and found that students in the QtA approach had greater recall and higher scores on answers to interpretive questions than did those in the Great Books group. The Beck et al. and Beck and McKeown studies included an individually administered comprehension task on a novel text passage that measured growth in comprehension monitoring and comprehension of the text. Both the Beck et al. and Beck and McKeown studies showed advantages for QtA students; in Beck et al., students improved in monitoring, and in Beck and McKeown, both monitoring and comprehension increased. However, the results are limited. In the Beck et al. study, there was no control group—students were given a pretest and posttest. In Beck and McKeown, fifth and sixth graders were compared with business-as-usual control students from the same school. QtA fifth graders showed improvement in monitoring, and sixth graders showed improvement in both monitoring and comprehension. But because of the transitory nature of the school population, there were only 11 students in each approach in fifth grade and 13 in each approach in sixth grade.

Thus, the findings about a content-oriented approach are limited by the number of studies, the small sample size of those studies, and the sparse evidence of improvement on tasks beyond the classroom discussions. This last characteristic is the opposite of a drawback of the strategies findings. That is, for QtA and discussion-based approaches, the results center on interactions during discussion, whereas in strategies research, there are few examples of what the classroom interactions were like and thus little insight about what led to the results.

Rationale for the Study

A limitation of the evidence for both strategies and content approaches is that, with the exception of the Sandora et al. (1999) study, the approaches have been compared with only traditional instruction or unknown instruction—whatever happened to be going on in those other classrooms at the time. Little information is available on what the instruction or texts were like in the comparison groups. Additionally, strategies and content approaches have never been compared with each other.

Most importantly, studies of both types of approaches suffer from lack of standardization of what teachers tell students, what students do, and how the interactions proceed. In comparison, in research on lower-level reading processes, the evidence for the role of phonics was not simply that "phonics instruction is good" but that, to be good, instruction needed to be systematic and sequential and include activities such as blending (NICHD, 2000). Of course, teacher variation plays a large role even with prepared materials, but in the case of strategies and content approaches, the teacher is the only instructional agent. Thus, the research on strategies and content approaches provides little guidance on what in the instruction was responsible for the outcomes. It could be the case that simply more time and attention to text is the key that leads to improvement (Carver, 1987), and the instructional activities and prompts do not matter. We doubt that is the case; it is more likely that some activities are more effective than are others.

Overview of the Study

The research reported here involved a two-year study in which we developed, implemented, and compared standardized instruction for representations of two major approaches targeted to enhance comprehension. Student comprehension of common texts was examined under the following approaches: strategies instruction, content instruction, and basal instruction. Lessons were designed around texts being used in the classrooms, and thus students in all approaches dealt with the same texts. These texts were the five core selections that made up one theme within the basal reader in use in the school. Each selection was the core text in a weekly lesson plan that also included reading of another shorter text and activities in fluency, writing, vocabulary, word study, self-selected reading, and other typical language arts practices.

The part of the five-day lesson plan labeled *guided comprehension* consisted of reading the core text with program-provided, scripted teacher questions. In this study, we used the guided comprehension slice of the weekly lesson plan to implement the lessons that we developed. Each lesson occupied a total of 45 to 75 minutes a week within one of the daily 90-minute reading blocks. During the other reading periods over the week, the teachers engaged in whatever other activities they chose from the basal reader, in accordance with their customary classroom practice. Thus, this study was situated within authentic contexts of classroom reading instruction.

In the first year of the study, this comprised lessons for five narrative selections. For the second year of the study, the same lessons for the five narrative selections were implemented with a new cohort of students and three expository text lessons were added. We hypothesized that this longer period of instruction might make it feasible to evaluate the effects of the instruction on comprehension of texts beyond those used in the classroom. Thus a task for assessing transfer was developed.

The goal of this work is a greater understanding of the extent to which instruction focused on content or on strategies enhances students' comprehension of specific texts and their independent comprehension ability. Findings from the study have the potential to yield greater understanding because the use of standardized lessons on common texts that represent both approaches allows a rather precise picture of what students do during instruction and are able to do following instruction. Transcripts of videotaped lessons within the two approaches afford opportunities to identify the kinds of interactions that seem to be the most productive for enhancing students' abilities to deal with text ideas. Investigation of comprehension of texts beyond those used in instruction provides insight about the potential long-term effects of the approaches.

Year 1

Method

The purpose of the study was to compare the effectiveness of two experimental comprehension instructional approaches and a control approach. One experimental approach, the content approach, centered on readers' development of a coherent representation of the text. The other experimental approach, the strategies approach, involved direct teaching of explicit comprehension strategies. The control approach, the basal approach, was based on the instruction presented in the 2003 basal reader that was used in the school district.

Materials

Lessons for each of the three approaches were developed based on 5 fifth-grade narrative text selections from the basal reading program in use. The titles of the five stories and a brief description of each story are provided in Appendix A.

Lesson Design

The format in each approach was teacher-directed, whole-class instruction in which portions of the text were read aloud, mostly by students, and were interrupted with questions that elicited student discussion. This is in keeping with customary guided comprehension provided in basal programs to the extent that questions are scripted for the teacher to deliver, and their placement is designated within the reading selection.

The number of stops—points at which reading was stopped and discussion initiated—was similar for each of the two experimental approaches. For the basal lessons, we used questions supplied in the teacher's edition and their associated stopping points. Thus all three approaches included questions interspersed within the reading. The design of the questions for initiating and guiding discussion in each approach is discussed in the following sections. An example of a script for each approach is presented in Appendix B.

Content Approach

Content instruction focused student attention on the content of the text through general, meaning-based questions about the text. Reading was stopped and discussion initiated at purposely selected points when, for example, a key character was introduced, some important event had occurred, or where we judged some confusion might arise for readers. This method is based on the QtA approach (Beck & McKeown, 2006; Beck et al., 1996). At each stopping point, the teacher provided an initiating question to start the discussion. These open-ended questions were designed to make public the important idea in a text segment (e.g., "What's going on here?" "How does all this connect with what we read earlier?"). Most stops also included a follow-up question that the teacher could use to focus on the key ideas from that portion of text. These follow-ups (e.g., "Can anyone add to that?" "What does that mean?") were used as needed to elicit additional information.

Strategies Approach

In strategies instruction, students were taught to use specific procedures to guide their access to text during reading. An important notion behind teaching strategies is that strategies instruction is productive because it can be applied to any piece of text. At stopping points, the teacher used a strategy to prompt discussion and reminded students how to apply the strategy.

Strategies Selection

We chose the strategies to use for the present study after considering those highlighted in two recent reports on reading, the National Reading Council report (Snow et al., 1998) and the NRP report (NICHD, 2000). The National Reading Council report focuses on the following strategies: summarizing, predicting, drawing inferences, and monitoring for coherence and misunderstandings. The NRP report lists seven individual strategies for which there was evidence of improved reading comprehension after instruction: comprehension monitoring, summarization, question generation, question answering, cooperative learning, story structure, and graphic and semantic organizers.

In selecting among recommended strategies, we considered which procedures might most naturally be called on as a reader works through a text to understand the content and also which strategies were most appropriate for a discussion-based lesson. Our thinking was that readers may summarize important information as

they move through text, develop a sense of what may be coming next, draw inferences to create connections, and form questions to check that they are on track. Additionally, effective readers monitor their understanding. We therefore selected summarizing, predicting, drawing inferences, question generation, and comprehension monitoring for strategy-based lessons.

The strategy to be used at each stopping point was selected depending on which strategy fit best at that point in the text (e.g., if the story reached a turning point, we would ask the students to predict, or if the story presented confusing information, we asked the students to check their understanding).

Expert Review

Because our expertise is in content instruction, to develop the strategy lessons, an intensive process of lesson review and revision was undertaken. We designed a three-stage review process that elicited feedback from strategies experts on how well our strategy lessons represented strategies instruction as understood within the reading research community and from teachers on issues of classroom implementation.

The first review cycle involved three strategies experts from the national research community. This cycle was designed to elicit extensive open-ended comments on strategy selection and early drafts of the lessons. Based on the comments, lessons were revised. The second cycle involved 10 reading specialists/coaches. This stage was designed to elicit reading practitioners' evaluation of ease of lesson use. The third cycle involved six additional nationally recognized strategies experts. This stage was designed to elicit more structured responses from a larger group of strategies researchers on our most complete version of the lessons.

Thus, in the first stage of review, the experts provided comments on our initial strategy lessons in terms of usability and fidelity to strategies instruction. In the second and third stages, reviewers were asked to rate strategies instruction in the lessons on the following six dimensions, as well as to provide written comments:

1. Coherent, student-friendly language
2. Adequate representation of the strategy
3. Teachers' ability to instruct the strategy
4. Students' ability to follow teacher directives
5. Adequate practice using the strategy
6. Appropriate student scaffolding toward independent strategy use

Reviewers were asked to rate, on a 4-point scale, how well each of the five implemented strategies (e.g., summarize) was operationalized across each of the six dimensions, providing 30 ratings from each reviewer.

The scale was as follows: 4 = almost always, 3 = usually, 2 = sometimes, 1 = does not occur. The average rating from the reading practitioners across the six dimensions for the five strategies (second stage of review) was 3.73. The six nationally recognized strategies experts (third stage of review) were more critical (as was expected). Their ratings averaged 3.26. See Table 1 for means and standard deviations of the ratings from reading practitioners and national experts for each of the six dimensions. The experts provided specific feedback about the lesson, noting that if their suggestions were incorporated their ratings would be higher. Lessons were revised accordingly.

Basal Approach

For the lessons in the basal approach, we developed scripts based on the questions in the teacher's edition of the basal reading program used in the participating classrooms. Because so much material is presented in the teacher's edition, we included only questions that were presented for use during reading of the selection

Table 1. Practitioner and Expert Ratings of Strategy Lessons by Dimension on a 4-Point Scale

Dimension	Reading practitioners *M* (*SD*)	Strategy experts *M* (*SD*)
Coherent language	3.65 (0.41)	3.80 (0.40)
Adequate strategy representation	3.85 (0.35)	3.37 (0.69)
Teachers' ability to instruct	3.92 (0.21)	3.13 (0.79)
Students' ability to follow directives	3.60 (0.41)	3.17 (0.67)
Adequate strategy practice	3.73 (0.30)	3.25 (0.81)
Appropriate scaffolding	3.63 (0.52)	2.83 (0.58)

and limited the questions to those directed to comprehension. For example, we omitted questions about word recognition, grammar, and so on, but asked the questions about text indicated at the stopping points in the teacher's edition. Thus the approach we created was not a business-as-usual control and thus was more accurately called basal comprehension because we may have provided a stronger focus on comprehension during the reading of the basal's major weekly text.

Participants

Students

Student participants were all fifth graders from six intact classrooms who took reading in their regular classroom in one school in a small, urban district in southwestern Pennsylvania. The district in which the study took place had been under court-ordered desegregation from 1981 until 2000. In 2004–2005, the school was identified as "in need of improvement" by the Pennsylvania System of School Assessment, with 48% of the fifth graders scoring at basic or below basic in reading according to the 2005 assessment. A majority of the students were African American (58%) and about half of the students (49%) qualified for free or reduced-price lunch.

To the best of our knowledge, the students' reading experiences had been through commercial basal programs. We base this on knowledge of the curriculum in the district, mobility patterns in the district, and the curriculum in adjoining districts. First, there was mobility among the student population within the district, but the same basal program was used throughout the district. Second, there was some mobility with two adjoining districts, a large urban district and a small, high-poverty urban district. Both of these districts also had basal programs in place.

Assignment to Approach

Three sets of test results were used to determine comparability of the six classrooms and to assign two classrooms to each of the three instructional approaches. The first were the Terra Nova reading comprehension (McGraw-Hill, 2000) scores for 132 students who had taken the test in the spring of their fourth-grade year and were expected to enter fifth grade in the fall. After we removed from the study pool students who transferred out of the school before fifth grade began and special education students who did not take reading with their regular class and added 13 students who transferred into the school to begin fifth grade, we had a final sample size of 119 students, with Terra Nova reading comprehension scores for 105 of these students. We then administered two Woodcock-Johnson (Woodcock, Mather, & Schrank, 2004) decoding tests (Word Identification and Word Attack) to these 119 students.

To evaluate whether there were significant differences among the classes in reading ability, one-way analyses of variance (ANOVAs) were done for the two Woodcock-Johnson tests and the Terra Nova test. There was not a significant difference among the six classes for the Word Identification test, $F(5, 111) = 1.39$, $p = .234$, or for the Word Attack test, $F(5, 111) = 1.64$, $p = .156$. For the Terra Nova scores, the ANOVA indicated that classes were not equivalent, $F(5, 100) = 2.64$, $p < .03$. Post-hoc tests revealed that one classroom's scores differed from two other classrooms at a $p = .08$ level of significance. See Table 2 for the pretest scores for all individual measures.

To assign the six classes (and the corresponding teachers) to the three instructional approaches and to make them as comparable as possible, we ranked

Table 2. Mean (*SD*) Scores for Three Baseline Assessments and Overall Standard Scores of Reading Ability for Each Approach for Year 1

Approach	Class #	Word Identification test *M* (*SD*)	Word Attack test *M* (*SD*)	Reading comprehension *M* (*SD*)	Standard score *M* (*SD*)
Content	1	4.95 (1.33)	5.99 (3.40)	8.84 (8.13)	
	2	5.08 (1.67)	5.54 (3.87)	5.40 (3.61)	
	Overall	5.02 (1.51)	5.75 (3.63)	6.73 (5.93)	0.25 (2.70)
Strategies	3	6.13 (2.71)	8.04 (5.25)	9.40 (5.70)	
	4	4.72 (1.53)	5.41 (3.95)	6.05 (3.01)	
	Overall	5.38 (2.25)	6.65 (4.73)	7.68 (4.76)	0.39 (2.64)
Basal comprehension	5	5.60 (1.93)	6.96 (4.79)	6.85 (3.15)	
	6	5.04 (1.91)	4.58 (2.94)	5.07 (2.28)	
	Overall	5.33 (1.91)	5.81 (4.12)	5.96 (2.85)	0.10 (2.57)

the classrooms from highest (Classroom 1) to lowest (Classroom 6) according to the mean classroom scores on the Terra Nova and Woodcock-Johnson tests. We also observed the classrooms to get a sense of classroom dynamic (e.g., student behavior, teacher discipline style), and these factors were considered when yoking the classrooms. In particular, when the classes were close on the other criteria, we took into account classroom dynamic, especially student behavior. Given that three classrooms exhibited a relatively high number of student disruptions, we included one of these classrooms in each approach.

To test for comparability across the three pairs of classrooms for the two Woodcock-Johnson subtests and the Terra Nova assessment, we combined the three scores into one standard score by converting each individual score from each of the three tests into a *z* score and then summing the three *z* scores. After a standard score was computed for each student, an ANOVA was conducted. Standard scores by approach are shown in Table 2 on page 224. No significant differences among the three approaches were found, $F(2, 116) = 0.620$, $p = .540$.

Teachers

All six fifth-grade classroom teachers and three support teachers were invited to participate in the study and all agreed to do so. The nine teachers each received a $300 stipend for their participation, which included a half-day initial training, three after-school meetings, preparation time for conducting the lessons, e-mail correspondence with research staff, and exit interviews.

Each of the classroom teachers was assigned to approach by virtue of the class he or she taught, per the process described above. Each pair of classes (and the corresponding teachers) was randomly assigned to one of the three approaches. The three supporting teachers (two Title I teachers and one special education inclusion teacher) who would conduct make-up lessons were also assigned to approaches. One teacher, the special education inclusion teacher, had already been assigned to one of the classrooms by the school district so she had to be kept with that classroom and the other in the pair. The other two support teachers were not previously assigned, so they were randomly assigned to the remaining two approaches.

Eight teachers were women (one was a man); all were European American. The number of years of teaching experience ranged from 2 years to 23 years. Specifically, the two teachers in the content approach had 2 years' and 18 years' experience; the two teachers in the strategies approach had 15 years' and 23 years' experience, and the two teachers in the basal-comprehension approach had 5 years' and 21 years' experience. All teachers had spent their entire teaching careers in the district in which the study occurred.

As mentioned, a basal reading program was in use in the district and basal readers had been the core of the reading curriculum for decades. However, to get a sense of how the teachers implemented the guided comprehension portion of the weekly reading lesson, two members of the research staff observed a guided reading lesson for each teacher. The observations focused on the kinds of questions teachers asked, the extent to which they engaged students in discussion, and how they dealt with student responses. The observations indicated the following:

- Five of the six teachers used predominately questions from the basal. The sixth teacher did not use the basal questions but asked questions that elicited student experiences and inserted a good many of his own experiences that were tangentially related to the text (this teacher was assigned to the content approach).
- Four of the five teachers that used basal questions conducted the lesson mainly through an Initiate-Respond-Evaluate pattern. That is, they posed the basal question; accepted a brief, mostly literal, response from a student; and went on.
- The fifth basal questioning teacher frequently followed up student responses by elaborating on them or probing students for more information (this teacher was assigned to the basal approach).

The points above indicated that in four of the six classrooms, there was essentially no discussion. In the classroom in which the teacher focused on students' experiences, the discourse was a collection of student experiences but was not a discussion, in that there was no building of relationships among student comments. In the remaining classroom, the teacher's follow-up of student responses provided some threads of connection, and thus the discourse had elements of a discussion, in contrast to the Initiate-Respond-Evaluate pattern.

Measures

We used a variety of measures to assess the outcomes of the three approaches. There were two categories of assessments: lesson-text comprehension and beyond-lesson-text-assessments. The lesson-text comprehension assessments included the sentence verification technique (SVT; Royer, Hastings, & Hook, 1979) for each text of the five lessons implemented in this study and included story recall for two of those lesson texts. We selected the two lesson-comprehension measures to represent different levels of comprehension. The SVT requires recognition of text content, and recall requires recalling content from memory and constructing language to express it. We also analyzed transcripts of classroom discussions from two of the five lessons to

consider differences in discourse during the lessons among the approaches. The beyond-lesson assessments included a comprehension-monitoring task and a task that assessed knowledge of strategies.

Lesson-Text Comprehension

SVT

The SVT was developed and used extensively by Royer and his colleagues (1979). Because of its extensive track record and because it is a measure that can be developed for specific texts, it fit our purposes well. In this task, students examine sentences and determine whether each is true about the text (Royer, Carlo, Dufresne, & Mestre, 1996).

Task Development. In the SVT version we developed, the items were either paraphrases (PPs) or inferences of ideas from the text. This format was developed because theory suggests that performance on paraphrased items represents a more text-bound level of comprehension, whereas performance on inference items represents comprehension of gist. For each item, a true and false (PP), local inference (LI), and global inference (GI) of an idea from the text were designed. An LI required students to draw an inference about a localized portion of the text, whereas a GI required students to make a connection across a large portion of the text.

Because the stories were of different lengths, the number of items across the tests varied, ranging from 36 items to 60 items. To exemplify the types of items on our SVTs, we created items for a well-known story, The Three Little Pigs, and those items are presented in Appendix C.

Pilot Work. We conducted two phases of pilot work on the SVTs. The first involved students from a different school in the same district in which the present study was implemented. We administered the assessment to a group of students who read one of the stories within a strategies lesson and a group who did so within a content lesson. There were 14 students in each group. Additionally, we piloted the SVT items for all five texts with students from a similar demographic who were attending a summer school program. We divided the 40 students into two groups and administered the strategies lessons to one group and the content lessons to the other. With information from the pilot results, we revised the measures, removing floor and ceiling items and adding new items as necessary.

Administration. For three of the lessons, the SVT was administered immediately following the reading lesson. For the two stories for which oral recalls were taken, the SVT was administered after oral recalls were collected. The SVTs were administered to an entire class by a research team member who read each item aloud.

Scoring. Each SVT was scored for total items correct, GIs correct, LIs correct, and PPs correct. Overall, SVT comprehension scores of the texts were calculated by averaging the scores from the five stories, and this was done for each scoring dimension. This yielded four scores, one for each item type (GI, LI, PP) and a total score. Internal consistency of the total scores for the five narrative SVTs, as assessed by Cronbach's Alpha, was equal to .901.

Oral Recall

Oral recalls were collected from all students for two of the five stories used in the lessons, *Off and Running* (Soto, 2005) and *The Fun They Had* (Asimov, 2005).

Administration. After each class had completed the lesson for the two recall-targeted stories, research team members took recalls from each individual student. The recall protocol involved four prompts: one initiating prompt and three additional prompts to encourage students to recall as much as possible. Recalls were recorded and subsequently transcribed.

Scoring. Recalls were scored for length and quality. Scoring for both dimensions involved dividing the story texts and student recalls into content units. Content units are units of text about one clause in length (Omanson, 1982), a unit length we have used in previous work (Beck et al., 1982). The number of content units in each student recall that represented a text content unit was used as the length measure, and the level of importance of each of these units was the basis for the quality measure.

Importance was determined by categorizing each unit as major, support, or detail. A major unit was defined as containing ideas that are very important to the story and a key component of a good summary. A supporting unit, although not necessarily key, holds main ideas together and adds elaborative information to the major units. A summary could do without these ideas, but it would be less complete. A detail unit was defined as less-essential information. These ideas do not hold the story together, and a summary would be complete without them.

Off and Running was divided into 282 content units, with 17 major ideas, 36 supporting ideas, and the rest considered detail units. *The Fun They Had* was divided into 182 content units, with 12 major ideas, 21 supporting ideas, and the rest detail units. The units were defined and labeled (as major, support, or detail) by one researcher, after which all researchers discussed the categorization and reached consensus.

Prior to scoring, the recalls were blinded as to instructional approach. After blinding, each student recall

was divided into content units, and those that mentioned a text content unit were counted and used as the length score.

For quality scoring, points were assigned to each unit: major units were assigned a value of three points, supporting units two points, and details one point. Recalls were scored by one team member and 20% were rescored by a second team member to determine inter-rater reliability. Differences for the 20% were then resolved through consensus. For *Off and Running*, 88% agreement was reached, and for *The Fun They Had*, 86% agreement was reached.

As was done for the SVTs, an overall comprehension score was calculated for each student for the recalls. This score was calculated by averaging the recall scores from the two stories.

Pilot Work. To get a sense of how student recalls would align with the text content units, we collected oral recalls for *Off and Running* and *The Fun They Had* from the same group of summer school students with whom we had piloted the SVTs. The information gathered contributed to the development of rules for scoring students' wording that did not match text wording but represented text ideas.

Lesson Discourse

As a way to understand the role of discussion during the lessons in promoting comprehension, we examined transcripts of the lessons on the texts for which students had provided recalls. We viewed promoting comprehension as the extent to which the discussion focused on building meaning from the text and used two metrics to capture this. One was the proportion of the discussion that was text based, which was instantiated as talk that matched any of the content units, and the other was the length of student responses, which was instantiated as number of words per student response. Proportion of text-based talk seemed a direct measure of focus on the text. Regarding length of student response, we have noted in previous research that as discussion becomes more meaning focused, students' responses become longer (Beck et al., 1996; McKeown, Beck, & Sandora, 1996).

Beyond-Lesson-Text Assessments

Comprehension Monitoring

To explore whether students' awareness of their comprehension (i.e., comprehension monitoring) was different across the three instructional approaches, we used a task based on one we have used previously in which students read a short text containing some inconsistencies, were stopped at several intervals, and asked whether there was anything that did not make sense (Beck et al., 1996). The rationale for this comprehension-monitoring task is that the ability to make decisions about whether comprehension is proceeding successfully would seem to be a precursor to being able to take steps to address problems. We assessed whether there was any change in students' comprehension monitoring through a pre- and posttest on nonlesson stories that were counterbalanced.

Task Development. Two 473-word stories with a Flesch-Kincaid 3.3 grade-level readability (Flesch, n.d.) were developed. Each had five paragraphs, with three of the paragraphs including one inconsistency, one paragraph including two inconsistencies, and one paragraph with no inconsistencies. The stories were composed in a familiar, fable-like style using student-friendly language.

Administration. The comprehension-monitoring task was individually administered, audiotaped, and subsequently transcribed. The researcher read the text aloud as the student followed along, a format that was used to prevent decoding from confounding comprehension. The researcher stopped after each paragraph and asked whether anything did not make sense. If the students did not detect an error in the paragraph, the researcher prompted them further by rereading two adjacent sentences, one of which contained an error for the four paragraphs that had errors, and asking the student to explain those sentences.

Scoring. The comprehension-monitoring measure was scored on a 2-point scale for each paragraph. In the error paragraphs, students were given two points if they detected the target error without additional prompting and one point if they detected the error only after the researcher reread the sentences in which the error existed. For the error-free paragraphs, two points were awarded if students recognized there were no errors and also were able to explain two important target sentences. A second rater scored 20% of the responses and an inter-rater reliability of 95% was obtained.

Strategies Task

The strategies approach provided intensive instruction and practice during which each strategy was explicitly named, described, and discussed. Given this instruction, we might expect the students in the strategies approach to show greater knowledge of strategy terms and ability to apply them to text. Yet, strategy terms are also introduced in basal reading lessons, including the basal series used in our study, and from our interactions with school personnel, we learned that the fifth-grade students had been exposed to this instruction. Thus we wondered whether knowledge of strategies would indeed differ across approaches.

To compare strategies knowledge across approaches, we developed an additional task that was administered as a posttest. The task was designed to measure each student's knowledge of strategies used in this study. The task was based on one developed by Kozminsky and Kozminsky (2001).

Task Development. Six stories were developed, averaging 349 words, with an average 3.6 Flesch-Kincaid grade level (Flesch, n.d.). For each story, a corresponding four-question multiple-choice test was developed. The questions covered four of the five strategies taught in the strategies approach: asking a question about important information, predicting, inferring, and summarizing. We did not include comprehension monitoring because it did not lend itself to multiple-choice questions (and it was assessed with a separate comprehension-monitoring test, as described above).

The test questions were identical for all stories and presented in the same order:

1. Which question might a teacher ask to know if a student had understood the important ideas from the story?
2. What would be a good prediction about what might happen next in the story?
3. Reading between the lines, what could you infer from this story?
4. Which of these is a good summary of the story?

Administration. All six strategy-task stories were administered, two per classroom, in the first year of the study. Four different stories were tested per approach, so that every story was administered in two classrooms, each in a different approach of the study. The task was administered to the whole class. To prevent decoding issues from confounding students' strategy knowledge, the stories, the four questions, and four choices were read aloud.

Scoring. Scoring was straightforward. Students were given one point for each correct answer, with a possible total of eight points across two tests.

Procedures

Teacher Training

Prior to implementation of the study approaches, the research team provided training to teachers. Training began with a short overview of the study's purpose. Then teachers for each approach met separately for a half day to receive intensive training in their assigned approach—content, strategies, or basal comprehension. Teachers received a notebook containing all lesson materials for their approach. Finally, the scripted lessons were reviewed and discussed. Teachers were asked not to share their lessons and materials with teachers in the other approaches, and we found no indication that they had done so.

One week after training, each participant group observed a demonstration lesson of their approach by one researcher in one of their fifth-grade classrooms. The teachers had a copy of the scripted lesson and an observation sheet that prompted them to attend to certain features of the instruction. A question-and-answer session followed.

Student Preparation

Students were prepared for the two experimental approaches through practice lessons developed by the research team and delivered by the teachers. Student preparation for the strategies approach consisted of three 45-minute lessons over three days. Each of the five strategies targeted for the study was introduced and practiced first with several sentences and then with a short piece of text. Two strategies were introduced and practiced in the first lesson and two more in the second lesson. For the final lesson, the last strategy was introduced and all five strategies were practiced. Students were given a reminder sheet that briefly described each strategy. Students were told to use these sheets during the preparation lessons as well as in their classrooms when the five story lessons were implemented.

Student preparation for the content approach was done in one session in which the teacher told students that during some upcoming reading lessons they would be going through a story together, reading a portion of the text, and stopping to talk about what they had read. They then practiced doing this on a short text. There was no preparation for the basal-comprehension approach because the lessons were based on the comprehension questions available in the guided comprehension portion in the teacher's edition of the basal reader being used.

Implementation of Lessons and Assessments

The three instructional approaches were implemented in the six fifth-grade classrooms within the selected school, with two classes per approach. The instruction began in the middle of January, and over the next five weeks, the teacher in each classroom taught a story lesson at the beginning of each week. Every lesson was observed by a researcher. During observations, the researcher compared the script of the lesson to the implementation in the classroom. Feedback was only called for after the initial lesson, in which one teacher in the content approach and one teacher in the strategies approach made minor deviations from the script. During all subsequent observations, we judged the lessons to be implemented with a high degree of fidelity for all teachers.

To check fidelity, the transcripts of two subsequent lessons, the second and the fifth, were analyzed for the percentage of scripted initial questions asked, the extent to which the questions elicited an appropriate response, and whether useful follow-up questions were asked. The analyses indicated that teachers implemented the lessons with a high degree of fidelity.

For both stories across all three approaches, the initial scripted question was asked 100% of the time and elicited an appropriate response from a student 89% of the time in the content approach and 100% of the time in the strategies and basal-comprehension approaches. Teachers posed a follow-up question when needed, which were scored appropriate 94% of the time for the content approach and 100% of the time for the strategies and basal-comprehension approaches. The results were virtually the same for the fifth story. These very high scores are not surprising given the scripted nature of the lessons.

Two of the stories were completed within one classroom period of 45 minutes; the other three stories were divided into two parts that were delivered on consecutive days. All lessons were audiotaped for later transcription. Two of the lessons were also videotaped. At the completion of three of the lessons (lessons 1, 3, and 4) all students were administered the SVT by a research team member. After the other two lessons (lessons 2 and 5), students were first individually administered oral recalls, which were audiotaped for subsequent transcription. When the oral recalls were completed for a class, the students were administered the SVT.

After all story lessons and their corresponding assessments were completed, the strategies test was administered to each classroom by a research team member. Finally, students were individually administered the posttest of the comprehension-monitoring task.

Results

Questions of interest in the first year included two questions addressed to lesson comprehension:

1. Were there differences in comprehension among approaches for lesson texts?
2. Did patterns in the lesson discourse help to explain any differences found?

Two other questions addressed more general outcomes:

3. Were there differences in students' ability to monitor comprehension on nonlesson texts among approaches?
4. Were there differences in students' knowledge of comprehension strategies among approaches?

Using the student as the unit of analysis, data were analyzed with one-way ANOVAs (analyses of covariance were also run using the calculated standard score of reading ability as a covariate; all findings were consistent with the ANOVA results), with Tukey's honestly significant difference (HSD) tests run for post-hoc differences (we examined our data for classroom effects with a nested analysis, and there were no significant effects; in considering this, we decided to maintain our one-way ANOVA because our power would be drastically reduced due to the small number of classrooms in our study if we analyzed our data using a nested analysis). The exception was the comprehension-monitoring pre- and post measure, which was analyzed with a repeated measures ANOVA with approach (content, strategies, basal comprehension) as the between-subjects variable and test time (pre or post) as the within-subjects variable. Effect sizes are reported using a Cohen's *d* standardized effect size, which is calculated as the difference in group means divided by the pooled standard deviation.

Lesson-Text Comprehension Measures

Two comprehension assessments were used for lesson texts: SVT and story recall. The SVT was administered after each of the five lessons. Story recalls were collected after two of the lessons. Scores for these assessments were calculated by averaging scores across stories.

SVT

The SVT data for each of the five stories were analyzed for differences in four areas: total score, GIs correct, LIs correct, and PPs correct. Analyses showed that there were no significant differences across approaches for any of the four areas. The results are presented in Table 3.

As can be seen from the table, all three groups did moderately well on the SVT tests, with a mean high of 81.20% correct and a low of 76.94% correct. Additionally, 98% of the scores were above 50%, and about half of the scores were above 80%.

Recall

The oral recalls collected for two of the five stories were analyzed on two dimensions: length of recall and quality of recall. The results of these analyses are presented in Table 4.

As indicated in the table, the approaches had significantly different recall lengths and quality scores. Post-hoc tests (Tukey's HSD) on these results indicated that the recalls of the content group (M = 16.20) were significantly longer than were those of the strategies group (M = 10.33; p = .001). The length of the basal-comprehension students' recalls (M = 14.13) was also significantly higher than was that of the strategies group (p = .05). The length of the basal-comprehension

students' recalls was not significantly different from that of the content students' recalls (p = .373; d = .270).

Analysis of data for quality of the oral recalls, presented in Table 4, revealed that the scores of the approaches also differed significantly on this dimension. Post-hoc analyses indicated that content students (M = 33.40) produced higher quality recalls than did the strategies students (M = 22.97; p = .001). The quality score of the basal-comprehension students (M = 29.20) was not significantly different from the average scores of the content group (p = .292; d = .310) or the strategies group (p = .09; d = .627).

Lesson Discourse

The analysis of lesson transcripts from the two lessons from which we had recalls involved examining two patterns. The first was the proportion of talk that directly reflected text ideas. The two lessons were combined, and the number of text-based words was tallied at each stop. The second was the amount of talk in each student turn during the discussion. Differences were analyzed separately for student and teacher talk.

As seen in Table 5, the ANOVA for text-related student talk revealed a significant difference. Post-hoc tests (Tukey's HSD) indicated that content lessons had a significantly higher proportion of text-based student comments (94%) than did strategies lessons (75%; p = .005) and that the basal-comprehension lessons also had a significantly higher proportion of text-based comments (86%) than did the strategies lessons (p = .002). The content and basal-comprehension lessons were not significantly different from each other (p = .209; d = .463).

Table 3. Mean (*SD*) Scores and Analysis of Variance Results for Percent of Sentence Verification Technique Items Correct for Narrative Texts by Approach for Year 1

	Content (n = 44)	Strategies (n = 37)	Basal comprehension (n = 38)			
Score type	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	F	p	*d*[a]
Total %	78.30 (9.75)	78.42 (9.07)	79.41 (9.05)	0.168	.846	.107
Global inferences %	76.94 (9.63)	77.03 (8.11)	78.13 (8.67)	0.281	.804	.139
Local inferences %	78.52 (9.69)	78.83 (10.02)	78.61 (10.20)	0.010	.990	.026
Paraphrases %	79.17 (11.42)	79.22 (10.40)	81.20 (9.44)	0.474	.624	.181

[a]*d* = Cohen's *d* standardized effect size, calculated as the difference in group means divided by the pooled standard deviation.

Table 4. Means (*SD*) and Analysis of Variance Results of Length (by Number of Idea Units) and Quality of Recall Scores for Narrative Texts by Approach for Year 1

	Content (n = 44)	Strategies (n = 37)	Basal comprehension (n = 38)		
Score type	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*	*p*
Length	16.20 (8.96)	10.33 (4.55)	14.13 (6.14)	7.29	.001
Quality	33.40 (16.14)	22.97 (9.61)	29.20 (10.27)	6.91	.001

Table 5. Mean (*SD*) Percent and Analysis of Variance Results of Words About Text per Stop by Students and Teachers for Year 1

	Content (n = 32)	Strategies (n = 30)	Basal comprehension (n = 35)		
Participant	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*	*p*
Student %	94.08 (12.08)	74.88 (23.24)	85.86 (21.99)	7.36	.001
Teacher %	50.36 (25.84)	26.79 (16.74)	47.18 (28.76)	8.35	.000

Note. n = total number of stops across both stories.

Table 5 also presents the amount of teacher text-based talk, which showed similar results. In the content lessons, teachers used a significantly higher proportion (50%) of words about the text than the strategies teachers did (27%; $p = .000$). The proportion of teacher talk about the text in the basal-comprehension lessons (47%) and the strategies lessons was also significantly different ($p = .000$; $d = .866$). The content and basal-comprehension lessons were not significantly different from each other ($p = .858$; $d = .116$).

Examination of the second pattern, words per student response, is presented in Table 6. The average number of words that a student spoke during each response in the discussion differed by approach. Students averaged many more words per response on average in the content lessons ($M = 24.38$) than they did in the strategies lessons ($M = 11.74$) and the basal-comprehension lessons ($M = 13.29$; $p = .000$). The strategies lessons and basal-comprehension lessons were not significantly different ($p = .802$; $d = .180$)

Table 6. Means (*SD*) and Analysis of Variance Results of Number of Words per Student Response in Narrative Lessons for Year 1

Approach	*n*	*M* (*SD*)	*F*	*p*
Content	32	24.38 (11.99)	15.523	.00
Strategies	30	11.74 (9.18)		
Basal comprehension	35	13.29 (8.14)		

Note. *n* = total number of stops across both stories.

Table 7. Mean (*SD*) Comprehension-Monitoring Pre- and Posttest Scores by Approach for Year 1

		Pretest	Posttest
Approach	*n*	*M* (*SD*)	*M* (*SD*)
Content	43	5.14 (2.61)	5.72 (2.72)
Strategies	37	4.97 (2.57)	6.20 (2.46)
Basal comprehension	38	4.90 (2.76)	5.71 (2.58)
Marginal	118	5.01 (2.63)	5.87 (2.59)

Table 8. Mean (*SD*) Strategies-Knowledge Test Scores by Approach for Year 1

Condition	*n*	*M* (*SD*)	*F*	*p*
Content	40	4.53 (1.32)	1.86	.16
Strategies	39	4.90 (1.62)		
Basal comprehension	37	4.24 (1.50)		

Outcomes Beyond Lesson Texts

In addition to assessments of comprehension of the lesson texts and an analysis of lesson discourse, two assessments that were independent of the lesson texts were developed to compare student ability to transfer knowledge gained in the study lessons. Specifically, we collected data on student ability to monitor reading comprehension and student knowledge of and ability to apply the comprehension strategies stressed in the strategies approach.

Comprehension Monitoring

Table 7 presents data on the comprehension monitoring pre- and posttest, which had a total possible score of 12 points. These data were analyzed with a two-way, repeated measures ANOVA. The interaction between time and approach was not significant, $F(2, 115) = 0.451$, $p = .638$, which indicates that the mean change from pre- to posttest was not significantly different across approaches. However, there was a significant main effect of time, $F(1, 115) = 9.40$, $p = .003$, meaning that, regardless of approach, there was a significant score increase from pretest ($M = 5.01$) to posttest ($M = 5.87$). The main effect for approach was not significant, $F(2, 115) = 0.169$, $p = .845$, but was of little interest because the change across approaches was the focus of this analysis.

Strategies Task (Posttest Only)

The purpose of this task was to compare students' strategies knowledge across the three approaches. This assessment had a total possible score of eight points. The ANOVA revealed that the scores on these tests were not significantly different for the three approaches following the study implementation. These results are presented in Table 8.

Discussion

The results from the first year showed no differences on one measure of lesson-text comprehension, the SVT, but did show differences on the other lesson-text measure, recall. On this measure, both content students and basal-comprehension students outperformed strategies students in terms of length, and content students outperformed strategies students in terms of overall quality. These results are not necessarily in conflict, as recall is a productive measure that may capture a higher level of comprehension than would a multiple-choice test, such as the SVT. Even though the differences among approaches were limited to the recall measure, we view these results as meaningful because the contrast

between the lessons was restricted, providing a very stringent test. All three approaches had the same lesson format of interspersed questions and discussion during reading, and the lessons were scripted and followed with fidelity. Thus, the differences in the lessons were limited to the type of questions asked at the specified stops. Viewing the recall results as meaningful also makes sense in light of findings from the analysis of lesson discourse, which showed that discussion in the content approach was more focused on the text and students gave longer responses.

The lack of difference on the SVTs may indicate that all approaches achieved adequate comprehension of the texts. As noted in the Results section, the means on the SVTs were fairly high. Moreover, in looking at the spread of the scores across the stories, 98% of the student scores were above 50% and about half of the scores were above 80%. One interpretation of high scores is that the test was easy for the students. As for the assessments that tapped abilities beyond the specific lessons, we found no differences among approaches for either the comprehension-monitoring task or the strategies task. For comprehension monitoring, we did find gains from pretest to posttest across approaches. This gain suggests that all three instructional approaches had positive effects on students. However, the fact that this change occurred for all students regardless of approach is in contrast to previous findings with a similar task where we found differences for students in QtA classrooms but no differences in control classrooms in which instruction was business as usual (Beck & McKeown, 1998).

As for the strategies task, the lack of difference seems to suggest that the strategies approach did not provide students an advantage for applying the specific strategies independently. It seems that students in all approaches had equal familiarity with the strategy terms and how to apply them.

A final question is why results for the basal-comprehension approach did not differ significantly from the content approach or the strategies approach. In trying to create an appropriate comparison approach, we may have inadvertently made teachers' use of the basal program more effective. Our development of these lessons stems from our observation of each of the six teachers' presentations of a story lesson before the study began. We noted that none of them followed the kind of lesson we planned to provide—that is, reading interspersed with questions about the story and discussion. Our thinking was that such a format needed to be held constant in all approaches. Further, we provided teachers in the basal-comprehension approach with a script that contained only the during-reading questions from the basal guided comprehension section. Asking teachers to follow our script also alleviated decisions about other kinds of activities that surround the story in the basal that could compete with story reading and discussion. Thus, our format may have provided a streamlined and focused approach to the story lesson.

Year 2

Method

Year 2 of the study was designed to replicate our methodology from Year 1, with the addition of random assignment of students to classrooms. We also investigated the effects of the three instructional approaches with expository text and explored transfer to texts that students read without instructional support. Additionally, we included a passage-comprehension baseline test, a pretest in addition to a posttest assessment of strategies use, and teacher exit interviews.

Participants

Year 2 implementation took place in the same school with the same six fifth-grade teachers as in Year 1. In Year 1 of the study, classrooms were intact at the start of the study implementation and, therefore, random assignment of students was not possible. For Year 2, however, we received permission from the school district to randomly assign students to classrooms, with the stipulation that we maintain balance by race and special education status (including gifted students) among classrooms. First, we randomly assigned the minority students in the district (European American and Asian American students) to the classrooms. The remaining students (African American) were then randomly assigned to the six classrooms. Classroom assignments were then reviewed to check that special education students were represented equally in the six classrooms. Given that the six fifth-grade teachers kept their Year 1 instructional-approach assignments for Year 2, student assignment to classroom was, in essence, assignment to approach. Total sample size was equal to 116 participants.

To test for equivalence in reading ability across approaches, we used the same Woodcock-Johnson tests of decoding (Word Attack and Word Identification) used in Year 1 of the study. In addition, we assessed comprehension ability using the Woodcock-Johnson Passage Comprehension test. Standard scores were calculated, and a one-way ANOVA was not significant, indicating that reading ability and comprehension were not significantly different across the six classrooms or three approaches.

To evaluate whether there were significant differences among approaches in reading ability, one-way ANOVAs were done for the three Woodcock-Johnson tests. There was not a significant difference among

the three approaches for Word Identification, $F(2, 113) = 0.17$, $p = .844$; Word Attack, $F(2, 113) = 0.292$, $p = .748$; or Passage Comprehension, $F(2, 113) = 0.41$, $p = .665$. See Table 9 for the pretest scores for all individual measures and the standard score of overall reading ability.

Measures

Expository Lessons

To investigate the effects of the instructional approaches on the learning of content material, three lessons using expository texts were developed from the book *Bees Dance and Whales Sing* by Margery Facklam (1992). The topic, animal communication, did not overlap with the topics students were studying in their science or social studies classes. These additional lessons were implemented in the classrooms after the completion of the five narrative lessons.

Additional Measures

Expository Data

For all three expository texts, students were assessed with the SVT. Internal consistency of the total scores for the three expository SVTs, as assessed by Cronbach's Alpha, was equal to .57. Oral recalls were also collected for two of the three expository texts. To assess learning of specific scientific concepts in the texts after students completed their recall, three knowledge-probe questions were presented (e.g., "What are infrasonic sounds?").

To develop a scoring scheme, we listed the major text concepts that addressed each question, assigning each one point. Then for each major text concept, supporting ideas were listed, and each was assigned one half point. The total possible score was 17.75, which was far from what we anticipated students would obtain. But we needed to include every possible detail that students might mention. Answers to probed questions were scored by one team member, and 20% were rescored by a second team member to determine inter-rater reliability. Differences for the 20% were resolved through consensus. For the chapter "Barks, Chirps, and Melodies," 85% agreement was reached, and for "Messages by the Mile," 85% agreement was reached.

Transfer Task

One new goal for Year 2 was to assess transfer effects. Successful transfer involves being able to recognize elements in a new situation that are similar to those from the learning situation, something that young and less able learners find difficult to do (Brown, 1982a; Brown & Campione, 1981; Rumelhart & Norman, 1981). Thus, for young learners, transfer of learning may be unlikely unless there is explicit instruction aimed at transfer (Brown et al., 1983). To facilitate students' abilities to transfer the effects of the instructional approaches, we designed a sequence of five lessons about such topics as lighthouses, the Chicago fire, and the "War of the Worlds" radio broadcast. The first four lessons were designed to scaffold students to transfer what they had learned from teacher-led text discussions to building comprehension on their own. The sequence of lessons allowed for gradual release of responsibility to students by fading teacher-led discussion prompts and increasing prompts for silent thinking. The final lesson was used to assess transfer through individual oral recall after the final text was read silently. The number and type of prompt for each lesson in the sequence is shown in Table 10.

The prompts followed the format of the instructional approach being implemented in the classroom:

- In the content approach, the teacher reminded students that they were trying to understand what they had just read and prompted them to describe what they were thinking about.
- In the strategies approach, students were asked to choose a strategy that would fit best at each stopping point, followed by discussion of how the strategy had been applied.
- In the basal-comprehension approach, the teacher prompted students to think about a strategy that could be used at each stop or a question that could

Table 9. Mean (*SD*) Scores for Three Baseline Assessments and Overall Standard Scores for Each Approach for Year 2 Students

Approach	Word Identification test *M* (*SD*)	Word Attack test *M* (*SD*)	Passage Comprehension test *M* (*SD*)	Standard score *M* (*SD*)
Content	5.0 (1.4)	6.0 (2.8)	4.2 (2.0)	–0.05 (2.26)
Strategies	5.2 (2.3)	5.7 (3.6)	4.4 (2.0)	0.06 (2.96)
Basal comprehension	5.1 (1.7)	6.3 (3.7)	4.0 (1.3)	–0.01 (2.47)

be asked. This was followed by a discussion of how to apply the strategy or answer the question.

Prompts for silent thinking were similar, but interactions did not include oral responses or discussion. Students were given time to consider how they would respond and then reading resumed.

At the end of each lesson in the sequence, students were reminded that the kind of thinking they had done during the lessons should be done when reading on their own. For all of the lessons, students were allowed to refer to a reminder sheet designed by the researchers to prompt students to use the instructional approach used in their classroom. The transfer lessons were presented by the classroom teachers toward the end of the study and were spread over a two-week period.

Strategies Task

For Year 2, revisions to the strategies task were made to items that showed floor and ceiling effects, and the four texts with the strongest sets of items were identified. We judged strong items to be those that had either performed well in Year 1 or had been easy to revise, that is, we had been able to hypothesize why a particular item had been problematic and could readily overcome the problem.

The other change from Year 1 was that we administered the strategies task in a pre- and posttest design. Each classroom administered two of the stories for the pretest and the other two as the posttest, with the stories counterbalanced within approach.

Exit Interviews

At the conclusion of the study, teachers were interviewed to determine their overall satisfaction with their prescribed instructional approach. To ensure honest responses, we hired an individual experienced in conducting interviews who was not associated with the study. All teachers were told that their names would not be connected to their comments. The interviewer used a protocol of eight questions that encouraged teachers to talk about their overall experience while implementing the study. The interviews were audiotaped and then transcribed, and each teacher's comments were blinded to ensure anonymity.

Results

As in Year 1, we collected data in two areas: lesson comprehension and comprehension beyond the lessons. Questions of interest in the second year included three questions addressed to lesson comprehension:

1. Were differences in comprehension of narratives found in Year 1 among approaches replicated?
2. Did patterns in the lesson discourse help to explain any differences found?
3. Were there differences in comprehension among approaches on the expository texts and in the learning of expository material?

Table 10. Type of Prompt in Transfer Lessons

Lesson	# of oral-discussion prompts	# of silent-thinking prompts
1	5	0
2	3	2
3	2	3
4	0	5
5	0	5

Note. Lesson 5 was assessed for transfer.

Three further questions related to outcomes beyond the lesson texts—Were there differences among approaches on any of the following:

4. The comprehension-monitoring task?
5. The transfer task?
6. The strategy task?

All data, with the exception of the comprehension-monitoring task and the strategies task, were analyzed with one-way ANOVAs, with Tukey's HSD tests computed for post-hoc differences. The comprehension-monitoring data and strategies-task data were analyzed with two-way repeated measures ANOVAs, with approach as the between-subjects variable and test time (pre or post) as the within-subjects variable.

Lesson-Text Comprehension Measures

As in Year 1, two comprehension assessments were used for lesson texts: SVT and story recall. The SVT was administered after each of the five narrative lessons and three expository lessons. Story recalls were collected for two of the narrative lessons and two of the expository lessons.

SVT Comprehension Assessment

SVT scores were averaged across tests for the five narratives and separately for the three expository texts. The scores were analyzed with one-way ANOVAs for four different measures: percent correct for the total score, GIs, LIs, and PPs. The average scores were not significantly different among approaches for any of these measures. The results of these analyses are presented in Table 11 for the narrative lessons and Table 12 for the expository lessons.

Table 11. Means (*SD*) and Analysis of Variance Results for Percent of Sentence Verification Technique Items Correct for Narrative Texts by Approach for Year 2

	Content (n = 41)	Strategies (n = 38)	Basal comprehension (n = 37)			
Score type	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*	*p*	*d*[a]
Total %	77.17 (8.72)	76.02 (11.34)	76.66 (7.37)	0.15	.86	.103
Global inference %	76.72 (9.21)	75.21 (11.18)	76.53 (7.65)	0.29	.75	.143
Local inference %	76.22 (9.86)	76.71 (11.03)	75.12 (7.78)	0.27	.77	.138
Paraphrase %	77.57 (10.15)	75.92 (13.45)	78.09 (8.60)	0.41	.67	.170

[a]*d* = Cohen's *d* standardized effect size, calculated as the difference in group means divided by the pooled standard deviation.

Table 12. Means (*SD*) and Analysis of Variance Results for Percent of Sentence Verification Technique Items Correct for Expository Texts by Approach for Year 2

	Content (n = 41)	Strategies (n = 38)	Basal comprehension (n = 37)			
Score type	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*	*p*	*d*[a]
Total %	77.38 (8.83)	75.26 (9.12)	75.08 (7.67)	0.88	.42	.250
Global inference %	75.92 (10.29)	73.83 (10.54)	74.11 (10.40)	0.48	.62	.184
Local inference %	73.07 (10.88)	72.63 (10.35)	71.93 (8.71)	0.13	.88	.096
Paraphrase %	83.46 (10.01)	80.38 (10.44)	80.26 (10.98)	1.19	.31	.290

[a]*d* = Cohen's *d* standardized effect size, calculated as the difference in group means divided by the pooled standard deviation.

Narrative Recall

The results of the analyses from the oral recalls for the narrative texts are presented in Table 13. The results from the length analysis (by number of content units recalled) for Year 2 showed overall significance for the narrative texts. Post hoc tests indicate that, as in Year 1, the mean length of the content recalls (M = 17.32) was significantly higher than was the mean length of the strategies recalls (M = 11.77; p = .005). The mean length of basal-comprehension students' recalls (M = 15.63) was not significantly different from the content recalls (p = .59; d = .20) or the strategies recalls (p = .08; d = .66).

Analysis of the data for quality revealed a similar pattern as that seen for length. The mean quality score for the students in the content approach (M = 33.76) was significantly higher than was the mean quality score for the students in the strategies approach (M = 24.79; p = .01). The basal-comprehension students' mean score (M = 31.15) was not significantly different from the content (p = .66; d = .19) or strategies (p = .10; d = .59) mean scores.

Expository Recall

We collected oral recalls for two expository texts that, just as for narratives, were scored in terms of length and quality. These data are presented in Table 14. Although the mean length and quality scores for the content group were slightly larger, differences were not significant. However, there were differences in the scores for the knowledge probes, which were direct questions that queried specific scientific content. These data are also presented in Table 14. As noted earlier, the total possible score was 17.75 points, which accounts for every possible detail about the probed content. The low scores need to be considered in light of the inflated maximum.

The average score on the probes of the content group (M = 4.27) was significantly higher than was the average score of the strategies group (M = 3.15; p = .02). The average score of the basal-comprehension group (M = 4.30) was also significantly higher than was the average of the strategies group (p = .02). The average scores of the content group and the basal-comprehension group were not significantly different (p = .99; d = .02).

Lesson Discourse

As in Year 1, the transcripts of the lessons assessed with oral recalls were analyzed. The two expository lessons for which recalls were collected were added to the analysis, for a total of four lessons. This analysis involved

Table 13. Means (*SD*) and Analysis of Variance Results for Length (by Number of Idea Units) and Quality of Recall Scores for Narrative Texts by Approach for Year 2

	Content (n = 41)	Strategies (n = 38)	Basal comprehension (n = 37)		
Score type	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*	*p*
Length	17.32 (10.12)	11.77 (5.71)	15.63 (5.98)	5.41	.01
Quality	33.76 (16.85)	24.79 (11.35)	31.15 (10.06)	4.75	.01

Table 14. Means (*SD*) and Analysis of Variance Results for Length and Quality of Recall Scores and Probes for Expository Texts by Approach for Year 2

	Content (n = 41)	Strategies (n = 38)	Basal comprehension (n = 37)		
Score type	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*	*p*
Recall length (number of units)	15.65 (8.60)	12.19 (5.80)	14.22 (5.33)	2.56	.08
Quality	29.19 (14.16)	23.98 (10.34)	27.31 (8.95)	2.08	.13
Probes	4.27 (1.86)	3.15 (1.98)	4.30 (1.53)	5.028	.008

Table 15. Means (*SD*) and Analysis of Variance Results for Percent of Words About Text per Stop by Student and Teacher in Four Lessons

	Content (n = 56)	Strategies (n = 52)	Basal comprehension (n = 54)		
Approach	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*	*p*
Student %	97.08 (5.59)	66.05 (26.09)	83.95 (22.83)	32.37	.00
Teacher %	41.83 (32.74)	29.73 (21.25)	26.70 (10.14)	5.43	.005

Note. n = total number of stops across both stories.

examining the same two measures examined in Year 1 (student and teacher words about text and length of student response). Data for words about the text are presented in Table 15.

The pattern of results for Year 2 was similar to the pattern seen in Year 1. As shown in Table 15, the ANOVA for student talk revealed a significant difference. Post-hoc tests (Tukey's HSD) indicated that content lessons had a significantly higher mean percent of text-based student comments (97%) than did strategies lessons (66%; $p < .0005$) and basal-comprehension lessons (84%; $p = .002$). The basal-comprehension lessons also had a significantly higher mean percent of text-based student comments than did the strategies lessons ($p < .0005$).

Table 15 also presents the amount of teacher text-based talk. The content lessons had a significantly higher mean percent of teacher talk about the text (42%) than did the strategies lessons (30%; $p = .04$) and the basal-comprehension lessons (27%; $p = .01$). The basal-comprehension lessons and the strategies lessons were not significantly different in terms of the mean percent of teacher talk about the text ($p = .815$; $d = .183$).

The data from analysis of length of student response are presented in Table 16. The average number of words per student response in the discussion differed by approach. Students produced significantly more words per response on average in the content lessons ($M = 26.55$) than they did in the strategies lessons ($M = 9.50$) or basal-comprehension lessons ($M = 13.84$; $p < .0005$).

Table 16. Means (*SD*) and Analysis of Variance Results for the Number of Words per Student Response in Four Lessons

Approach	*n*	*M* (*SD*)	*F*	*p*
Content	56	26.55 (17.23)	31.134	.00
Strategies	52	9.50 (8.29)		
Basal comprehension	54	13.84 (6.20)		

Note. *n* = total number of stops across both stories.

The strategies and basal-comprehension lesson means did not differ significantly ($p = .141$; $d = .59$).

Having obtained similar results in Years 1 and 2 for the oral-recall measures and for the analyses of lesson discourse, we conducted a further analysis to try to discern the roots of those differences within the discourse itself. This analysis was done using transcripts from one classroom in each of the experimental approaches of the discussion of Isaac Asimov's (2005) *The Fun They Had*. Below, we considered the initial 163-word text segment, which features two children, Margie and Tommy, in the year 2157 who discover an old printed book and are stunned by it because "the words stand still," in contrast to the books they read on their television screens. The text follows:

> Margie even wrote about it that night in her diary. On the page headed May 17, 2157, she wrote, "Today Tommy found a real book!" It was a very old book. Margie's grandfather once said that when he was a little boy his grandfather told him that there was a time when all stories were printed on paper. They turned the pages, which were yellow and crinkly, and it was awfully funny to read words that stood still instead of moving the way they were supposed to—on a screen, you know. And then, when they turned back to the page before, it had the same words on it that it had had when they read it the first time. "Gee," said Tommy, "what a waste. When you're through with the book, you just throw it away, I guess. Our television screen must have a million books on it, and it's good for plenty more. I wouldn't throw it away." ("The Fun They Had," copyright © 1957 by Isaac Asimov, from Isaac Asimov: The Complete Stories Of Vol. I by Isaac Asimov. Used by permission of Doubleday, a division of Random House, Inc.)

In the strategies approach, the discussion for this segment began with the teacher directing an activity for monitoring comprehension:

> Teacher: Oh, good. Stop there, Honey. This is a good place to stop and check our understanding. What might be confusing here? Holly.

In response, a student identified a line of text that offered a confusion. When the teacher followed up by asking what the student could do to help herself understand the confusion, the student replied with a strategic procedure rather than a way to address that particular confusion:

> Holly: On the page headed May 17, 2157.
>
> Teacher: Oh, 2157. That might be confusing to a person reading this and what could you do to help yourself understand 2157?
>
> Student: Ask a question.

The teacher called on another student, who offered a way to address confusion that is relevant to this particular confusion, which is about dates, but he framed it hypothetically:

> Kyle: Maybe you could like to tell if it's a date or what. Just like if it's a date, you could um, see how many years from now it is.

In acknowledging Kyle's comment, the teacher also took the opportunity to point out that he had made an inference. After Kyle confirmed doing so, the teacher returned to the original question of possible confusions in the text:

> Teacher: In the future, good. You made an inference. Did the author once say this is taking place in the future? Did the author state that?
>
> Students: No.
>
> Teacher: But yet you knew it, didn't you, Kyle?
>
> Kyle: Yeah.
>
> Teacher: Based on what you read. And then you even did some work in your mind, trying to figure out how far into the future it was so that was good. Is anyone in the room confused about anything we read here? What did you think about that business with the books having print?

Another student then offered a different potentially confusing text concept. Again, when the teacher asked how the student cleared up the confusion, the student replied procedurally:

> Student: I was confused about moving on the television screen...
>
> Student: Yeah, that one.
>
> Student: ...the part when it said they turned the pages, which were yellow and crinkly, and it wasn't, it was awfully funny to read the words that stood still instead of moving

the way that they were supposed to on a screen.

Teacher: That was confusing to you, huh? What did you do to clear up your confusion?

Student: Ask a question, read on, reread.

The teacher asked the student which he chose. In replying, the student offered a most authentic moment:

Teacher: You could do...which one would you pick?

Student: Ask a question.

Teacher: Yeah. What would you be asking yourself?

Student: What the heck are they talking about?

The teacher responded to the question and then asked students to make an inference:

Teacher: [Laughs] That's funny. That's good. Well, I think the, the irony of that part is that we read books where the print is on the pages and it stands still, don't we?

Students: Yes.

Teacher: Isn't that what we are doing now?

Students: Yes.

Teacher: So make an inference about...what these kids must be thinking in the future?

Students offered responses and then reading resumed:

Student: How weird they were.

Student: How dizzy.

Although the students in this discussion selected important concepts from the text, for the most part the concepts are not used for building meaning but rather are treated as instances of how a strategy could be applied.

In the content approach, the discussion for this segment began with the teacher posing a question and a student summarizing the text segment, including key ideas about how Tommy and Margie's concept of a book from their 2157 vantage point differs from the old book they found.

Teacher: So what's, what's this all about? What's going on here? What's going on? Tajae, what's going on?

Tajae: Tommy found a book and they're looking in it and they're saying the pages are crinkly and stuff and they're thinking that if you read the book, you can go back in and it will be totally different about it but it's all still the same and they say that after you read it one time, you might as well throw it away cause you'll, cause if you read it and you know what it's about, if [inaudible] TV one cause if you turn on the TV and then you watch something, the next day it won't be the same page.

The teacher briefly acknowledged the response and called on another student whose hand was raised who added other relevant ideas, including the future setting of the story:

Teacher: Yeah, all that's very true. Catherine.

Catherine: It's in the future. It says that it's 2157, so the book is really old because now, like in the future, it's saying that they don't read, um, books. They don't read books. They read like on television screens and they're shocked because the book is really old and stuff.

The teacher then responded in a way that integrated the two students' comments, followed by a third student who offered elaboration:

Teacher: Yeah, and you, you added to what Tajae already said. Yeah, this is set in the future. And the book and the screen are two totally different things.

Student: Um, the words don't, um, move around when they're like...the way, um, they think they're, they were supposed to.

In this discussion, students presented ideas from the text very much in their own language. Even though that language is a bit rough around the edges, each subsequent student contribution seemed to take account of and build on the prior ones, such that movement toward coherence is evident.

Outcomes Beyond Lesson Texts

As in Year 1, outcomes beyond the lesson texts were also assessed. In Year 2, this included comprehension monitoring, a strategies task, and a transfer task. The strategies task was administered as a pretest/posttest assessment rather than only the posttest used in Year 1.

Comprehension Monitoring

Table 17 presents data for the comprehension monitoring pre- and posttest. As in Year 1, the total possible score for this assessment was 12 points. These data were analyzed with a two-way, repeated, measures ANOVA.

The analysis of the Year 2 data revealed a similar pattern of differences as was seen in Year 1. The interaction between time and approach was not significant, $F(2, 113) = 0.830$, $p = .439$, which indicates that the

Table 17. Mean (*SD*) Comprehension-Monitoring Pre- and Posttest Scores by Approach

		Pretest	Posttest
Condition	*n*	*M* (*SD*)	*M* (*SD*)
Content	39	4.77 (2.73)	6.07 (2.96)
Strategies	38	4.81 (2.19)	5.88 (2.56)
Basal comprehension	37	4.42 (2.71)	4.92 (2.91)
Marginal	114	4.67 (2.54)	5.63 (2.84)

mean change from pretest to posttest was not significantly different across approaches. However, there was a significant main effect of time, $F(1, 113) = 13.57$, $p < .0005$, meaning that, regardless of approach, there was a significant increase from pretest ($M = 4.67$) to posttest ($M = 5.63$). The main effect for approach was not significant, $F(2, 113) = 1.215$, $p = .301$, but was of little interest as the change across approaches was the focus of this analysis.

Strategies Task

The strategies data were analyzed with a two-way, repeated-measures ANOVA. Data for these results are presented in Table 18. The total possible score for this assessment was 8 points.

The interaction between test time and approach was not significant, $F(2, 113) = 1.21$, $p = .302$, which indicates that the mean change from pretest to posttest did not differ by approach. The main effect of time was not significant, $F(1, 113) = 0.340$, $p = .561$, which indicates that there was not an overall change in mean scores from pretest to posttest. The main effect for approach was also not significant, $F(1, 113) = 0.540$, $p = .584$.

Transfer Task

The transfer task consisted of individual student oral recalls collected after students silently read the final text in a sequence of five passages in which discussion over the first four texts was faded and then eliminated. The fifth selection was the transfer text.

Table 18. Mean (*SD*) Strategies-Knowledge Pre- and Posttest Scores by Approach

		Pretest	Posttest
Approach	*n*	*M* (*SD*)	*M* (*SD*)
Content	41	4.24 (1.69)	4.76 (1.92)
Strategies	38	4.87 (1.76)	4.76 (1.95)
Basal comprehension	37	4.57 (1.71)	4.49 (1.66)
Marginal	116	4.55 (1.72)	4.67 (1.84)

Data from the transfer task are presented in Table 19. The analysis of the length scores revealed a significant difference in the scores among the approaches. Further post-hoc analyses were conducted and although the approaches were not found to be significantly different at the $p = .05$ level, there appeared to be a trend of higher scores in favor of the content group over the strategies group ($p = .054$; $d = .490$). For the quality scores, the difference among approaches was not significant at the $p = .05$ level ($p = .055$; $d = .460$), but as seen for length scores, the score differences again suggested the trend of higher scores in favor of the content group over the strategies group.

Exit Interviews

To ascertain teachers' attitudes toward the lessons, we hired an experienced interviewer to conduct exit interviews. The interview was rather loosely structured around three major areas, teachers' comfort with the approach—or how natural it felt—its effect on students, and thoughts about the approach in comparison to other approaches they used or were familiar with. There were two or three follow-up questions for each area, with a total of eight questions. Because the conversation that each teacher had with the interviewer was open and free-ranging, all six teachers did not necessarily address each question. But they did all have responses about each of the three major areas. We summarize those responses below for the two teachers in each approach: strategies (S), content (C), and basal comprehension (B).

"How natural did the approach feel?"	
S1	The approach felt very natural to be honest.
S2	It was pretty natural to me because I think we touch those strategies in every lesson we do.
C1	Not natural at first, but the more I did them I felt a lot more comfortable. I always wanted to put my two cents in.
C2	It's not natural to not go deeper. It's hard to just let them think on their own and not pull the information from them.
B1	I really felt sort of restricted. I wasn't able to give the kids my background knowledge into the subject that we were reading or my experiences.
B2	Totally unnatural because I had to stick to that script. Because I'm constantly probing for more information and more meaning.

As can be noted above, the teachers' reactions ranged widely among approaches but was rather consistent

Table 19. Means (*SD*) and Analysis of Variance Results for Transfer-Task Length (by Number of Idea Units) and Quality Scores by Approach for Year 2

	Content (n = 40)	Strategies (n = 37)	Basal comprehension (n = 36)		
Score type	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*	*p*
Length	16.35 (8.40)	12.41 (7.31)	12.75 (6.16)	3.39	.037
Quality	31.72 (14.51)	25.08 (13.85)	25.75 (10.71)	2.98	.055

within approach. That is, the strategies teachers were quite satisfied, the content teachers were somewhat satisfied, and the basal-comprehension teachers were not satisfied as far as the approach feeling natural to them. It is interesting to note an issue that arose in each approach regarding why the approach was not completely natural to them. The teachers referred to their usual approach in a way that suggests that they often provide a great deal of information to the students (e.g., "my two cents"; "give the kids my background knowledge...or my experiences") or pose questions in a way that leads students to the responses ("pull the information from them").

"What was the effect on students?"	
S1	I think it helped reach out to some kids that were on the fence, and I think it definitely helped to push them over. There was still that percentage of kids that seemed clueless.
S2	I think it helped them a lot. Sometimes maybe the kids were a little confused, but it helped them with asking themselves the questions.
C1	Some responded quickly and they were on top of it. Others you could tell the thought process was taking place, so they didn't respond as well. But all in all, I think they responded pretty well.
C2	It wasn't just listing facts. They really had to think about what the author was trying to say. Some of them couldn't quite grasp what was being asked of them. They had a difficult time responding. The students that did respond did well.
B1	I believe it does help them to grasp the meaning, however, I believe that you also need to ask other questions.
B2	The discourse was labored. You'd think they were bored. I [usually] have those kids with an open notebook, and I stop and pose a question, and they got to respond, write something.

As can be noted above, five of the six teachers indicated that they saw some benefit in the approach for at least some of their students, even though it might have been difficult for students to respond at first.

"How did the approach compare with others you've used or know about?"	
S1	Prior to the strategy study, if we were reading a novel, I would focus on the story elements. But this was more meaty. This got them to follow a recipe that will never fail them.
S2	I thought it was very effective in getting them to engage in the story and then again to know what to do. I like this. I liked it a lot.
C1	[In my previous instruction] the children got to view the story three times. Once on audio, once I read it to them, and the third time we had the students read the story. I don't think that they need all that repetition. They need to realize that whenever you do the story, whether it's one time or three times, that you need to pay attention at all times.
C2	The basal has a wider range or variety of questioning. So the student that likes to stick straight to the point, that doesn't understand context deeply, there's stuff for them. And then there's also other types of questioning for the other students.
B1	My approach was close to the basal approach that I used, except that I found the approach to be limiting somewhat to the types of questions.
B2	The length of time that's spent on the story [was different]. With the basal series, they have the tapes, and I will often have them listen to the tape before we even read or partner read.

Two teachers referred to their habitual approach as "doing the story three times," including listening to it on tape initially. Two teachers referred to the need for "other types of questions," and the way that one of the content teachers explained it, it seems that she means that some students need more literal questions to be able to respond. The responses seem to indicate that both strategies teachers and at least one content teacher would be happy to continue to use aspects of the approach in their future teaching. Perhaps surprising is that the teachers using a modified version of their own basal were the least satisfied.

Discussion

We now summarize the results of Year 2 (a discussion of all aspects of the study follows). The second year of

the study showed a similar pattern as that found in the first year, despite having random assignment of students in the second year. That is, the content approach showed an advantage over the strategies approach in recall length and quality for narrative texts, but no differences were found for scores on the SVT. Also similar were the results of the lesson-discourse analysis, with content discussion being more focused on text than was strategies discussion and content students providing longer responses than did both strategies and basal-comprehension students. The lesson-discourse analysis included two expository texts that were added for the second year. Similarities were also found in beyond-lesson-texts assessments. That is, again, no differences were found among approaches for the comprehension monitoring or the strategies task.

The results for the expository texts reflected the pattern for the narrative texts in recall as well as lesson discourse. Scores for both length and quality of recall were higher for content than they were for strategies and about equal to that of the basal-comprehension group, although these differences were not significant. Analysis of the knowledge-probe data for the expository texts did show significant differences, however, for the content and basal-comprehension groups over the strategies group.

A beyond-lesson measure that was added for the second year of the study, recall of a transfer text, added to the picture of differences among approaches. Differences in quality scores and length of recall favored the content group, with mean scores of the strategies and basal-comprehension groups being nearly identical. Although these differences did not reach the $p = .05$ level of significance, they do seem to confirm an important trend throughout the data. That is, any differences in recall scores favored the content group.

General Discussion

The goal of the present study was to compare the results of two comprehension instructional approaches (strategies and content) and a control approach (basal comprehension) under circumstances that would allow fairly precise description of what was going on in classrooms within each approach. To do so, we implemented rigorously designed representations of the two approaches. The rigorous design included using common texts within each approach, scripting what the teacher said and asked students to do, providing teacher training and feedback, and conducting fidelity checks for every lesson in each approach. Thus, we attempted to ensure as much as possible that only the issues of interest were varied, specifically, how teachers prompted students to think about text and how teachers responded to students' comments during reading lessons.

Results were remarkably consistent across the two years, an indication that the lesson design held instructional approaches constant over two cohorts of fifth graders, despite lack of random assignment in the first year and whether it was the initial or second time through the lessons for the teachers. At a general level, our results lead us to conclude that all the instructional approaches provided for adequate comprehension, and a small but consistent pattern of differences occurred that favored the content approach.

In the discussion that follows, we consider what underlies the similarities and differences found, focusing on the two experimental approaches, content and strategies. We then discuss how the basal-comprehension approach functioned in this study and finally turn to limitations of the study and implications for research and practice.

SVT

Strategies and content did not differ on the SVTs, which are essentially recognition tests, for both years, and the findings, as noted earlier, suggest that students in all approaches were moderately successful (Tables 3 and 11). Our speculation for why there were no differences is that the format of interspersed oral reading and discussion that was held constant across approaches was a powerful influence. Certainly, oral reading of the texts helped to address decoding difficulties that might have hindered some students' understanding had the texts been read independently. A more interesting theoretical reason is that the interspersed reading-and-discussion format might have scaffolded components of text processing for students by giving students the opportunity to focus on important information and make connections to prior text and relevant outside information. Thus, for the level of comprehension assessed through a recognition test, such as the SVT, the substance of the questions that prompt discussion (e.g., a content prompt, such as "What's going on here?," or a strategies prompt, such as "What inference can you make here?") may be less important than the interspersed reading-and-discussion format.

Oral Recall

The substance of questions asked during lessons apparently did make a difference for the level of comprehension required by a recall task. Differences in recall for narratives favored the content group across both years in terms of length and quality of recall (Tables 4 and 13). Consider that a recall task requires a constructed response, in contrast to a recognition task. In constructing a response, a reader has to bring forth information

from memory, decide which information to use, and put it into language. A recognition task, on the other hand, calls for matching information provided with information stored in memory. Thus, recall represents a higher level of comprehension.

An answer as to why the content approach showed advantage on recall may lie in the nature of the discussions prompted by the substance of the questions. Discussions between approaches differed in terms of what students and teachers talked about and how much students said (Tables 5, 6, 15, and 16). As our findings demonstrate, in the content approach, a greater proportion of talk focused on text ideas, and students' responses were longer. To a large extent, this result suggests that students do what is asked of them. If questions directly prompt students to talk about text content, they talk about text content, and thus remember more text ideas than they do if questions prompt them to access text content through strategies. Indeed, strategies prompts may split focus between talking about strategies and talking about content.

Lesson Discourse

How the differences found in oral recall played out in discussion can be gleaned from transcripts of the lesson discussions in the strategies and content classrooms. The discourse excerpts that we examined suggested that the prompts to apply strategies may not lead students to consider text content directly but indirectly, taking them first through the strategy routine. For instance, when asked to summarize, students' focus may go to the who, what, when, where structure in contrast to "what's going on" in this section. Or when asked to think about a question to ask, students may consider what makes a good question rather than what is important content to be questioned.

The teacher questions asked in the content lessons, on the other hand, seemed to encourage students to express and integrate what they had understood from text, as evidenced in their recalls of the text. Why is this good? The notion is that the discussion provides a kind of external model of comprehension, that is, going through text, selecting what is important, and connecting those ideas to build an understanding.

Expository Text

We had three dependent measures for expository text that we implemented only in the second year: SVTs, recall, and learning probes. As was the case with narrative texts, there were no differences on SVT measures (Table 12). In contrast to narrative recalls, there were no differences among the approaches for expository-text recall (Table 14). The latter may relate to the more difficult content in expository text in terms of knowledge about the world. Anticipating such potential difficulty, we included knowledge prompts, which asked students to talk about the key concepts in the texts (e.g., "Tell me about infrasonic sounds"). The idea was that it may be too difficult to go into memory and retrieve new concepts, but when probes are provided, students may be able to bring forth relevant information. Thus, while the potential explanation for no differences on the SVTs is that students in each approach did moderately well, the lack of differences in recall may indicate that all students had more difficulty because the expository-text content was unfamiliar. Yet, the prompts seemed to provide enough support for the content students to access what they had read relative to the strategies students.

Comprehension-Monitoring Task

The comprehension-monitoring task, in which students identified anomalous content, was intended to be a measure of transfer that might have developed from experiencing the comprehension approach used in their classroom. We used this particular task for two reasons: First, identifying obstacles to comprehension is key to monitoring one's comprehension, and second, we had used a similar task in previous research and had found differences between instructional groups. Yet the results of the comprehension-monitoring task in the current study show no differences among approaches in either year.

In considering what to make of the comprehension-monitoring results, two features that also appeared in both years are of note. First, there was significant increase on the measure across time regardless of approach, and second, the scores were very low overall. The increase in scores suggests that the task did capture something about comprehension ability and supports the idea that all approaches had positive effects. Yet the scores themselves suggest that the task was quite difficult for students. Our conclusion then is that the task we used may be of value, but redesign is called for before it could be a useful measure in further studies.

Strategies Task

Another attempt to assess learning beyond the lesson text was the strategies task. In the strategies task, we attempted to measure students' application of strategies on a paper-and-pencil task. Students read short texts and answered questions including "Which is the best summary?" and "Which is an inference you could draw?" Results show that there were no differences across approaches (Tables 8 and 18). This result might be interpreted to mean that the instruction in the strategies approach did not provide students an advantage in explicit knowledge of strategies compared with what they had been exposed to in their regular classroom

instruction. We cannot draw this conclusion, however, because the scores were very low overall, and in the second year, when there was a pre- and posttest, no differences were found over time regardless of approach.

We would have expected the strategies approach to show an advantage. (As can be seen from the example strategy-lesson excerpt, students did seem to know the strategies.) The lack of an advantage might be attributed to the way strategies were measured, requiring something different from the way students were taught about strategies. The assessment task required students to read a short text and then be reflective about "which of four possibilities...is a good summary...[or] is an inference you could draw," in contrast to developing a summary or making an inference through questions and interactions with the text, teacher, and peers. The task requirements may have been different enough from what students were doing in the lesson that students were not able to transfer their knowledge of strategies to a more analytic task. Although Kozminsky and Kozminsky (2001) used a very similar task and found significant differences among groups of ninth graders of different educational levels (e.g., academic, vocational, learning disabilities), those subjects had not engaged in an intervention, and as such, the task may not be sensitive to instruction.

Transfer Task

Another transfer task included in Year 2 scaffolded students toward using the comprehension approach they had experienced in class with a text read without such support. In considering the possible outcomes of a transfer measure, it is of note that an underlying motivation for teaching strategies is that strategies are seen as generative and that learning strategies should provide students with tools they can use on their own and apply to any text. We would contend that a content approach is generative also, as the discussion simulates the comprehension process, and experience with such discussions may promote the development of a kind of mental template of that model that students incorporate into their own repertoires.

The results for the transfer task showed no significant advantage by approach for allowing students to transfer what they had learned (Table 19). However, the trend of higher mean scores for the content group was once again in evidence for both length and quality of recall and was associated with moderate effect sizes (d = .490 and d = .460, respectively).

Role of Basal-Comprehension Approach

Why did the basal-comprehension approach deliver results nearly equal to those of the content approach and in some cases better than those of the strategies approach? Our expectation was that the basal-comprehension approach would produce discussions that ranged further from text content than did the experimental approaches. We based that position on our familiarity with conventional basal lessons, which tend to target questions to a variety of issues, including direct inquiries about text content, establishing purpose for reading, character feelings and motivations, connections to personal experience, applying strategies to text ideas, and questions beyond guiding comprehension, such as word recognition, grammar, and progress-monitoring assessments. Moreover, a host of other activities surrounds the text, such as connections to other content areas, activities for students at different skill levels, fluency activities, and suggestions for literary analysis, as well as postreading questions and suggested assessment strategies. The scripted version of the basal-comprehension lessons we developed included only questions intended to be asked during reading and only those that pertained to comprehension. As such, the questions did not trigger as diverse a discussion as might have occurred had all questions and activities been used.

Thus, the basal-comprehension approach in this study, which we had originally viewed as conventional instruction, was quite constrained compared with a business-as-usual basal control. Constraining the basal-comprehension approach was done deliberately so we could understand what was going on in this control approach. However, we may have inadvertently created a somewhat advantaged control because the focus on comprehension might have been stronger than is typical of basal instruction.

Beyond the scripted and prescribed questions, the other feature that likely increased the basal's effectiveness was the interspersed reading-and-discussion format, which we have already acknowledged as a feature that supported each group. Even though it appears that the intent of basal publishers is to offer questions to be used during reading, our observations at the school used in this study and beyond reveal that teachers rarely conduct the lessons in that way. Rather, they assign the text to be read silently and then ask questions.

Limitations and Implications

What can we say about our results on a general level that is meaningful to issues in the field, both in terms of research and classroom practice? First, the studies reported here are not meant as definitive answers about strategies and content instruction. The instantiation of strategies is only one example of what strategies instruction might look like. There are other choices that could be made in the strategies selected, the way they were introduced, and the way in which they were applied in the lessons. There are, as well, other instantiations of content instruction that could be employed. For example, one might use interpretive questions, such as

those in Junior Great Books (Dennis & Moldof, 1983), or global questions meant to draw a variety of student judgments, such as those in collaborative reasoning (Anderson et al., 1998).

A question that remains open is whether student ability or cognitive factors might affect the results. Future researchers could provide such insight by developing studies that are designed to consider examination of treatment by ability interactions.

Another limitation to the work reported here is our selection of dependent measures. What is measured naturally governs the effects that are shown, and in any one effort, there are limits to the number and kind of effects that are feasible to measure. Specific to the current studies, the measurement of transfer was limited. Clearly it would be desirable to measure further transfer, for example, what students could do if given a text to read completely on their own. Also desirable would be to measure such transfer following some lapse of time after instruction.

Despite the limitations, we see the work as having implications that are meaningful to research and practice. We acknowledge that the differences we found that favor the content approach were small, yet they showed a consistent pattern. Second, given the very stringent design approaches in this study, it is not surprising that the differences we found were small. All three approaches used scripted lessons of high-quality instruction; all teachers were trained, observed, and given feedback; and each approach was based on interspersed reading and discussion, which, as noted, provides a theoretically strong foundation for comprehension. Indeed, that format may well have been the most positively influential feature in the instructional design.

An issue for practice is that interspersed reading and discussion may be a departure from how reading lessons are typically taught in intermediate grades. It follows then that our recommendation for practice is that at least some of the time teachers work through a text with students, alternating reading with discussion. The value of this practice includes enabling students with poor decoding skills to have access to the text, providing an external model of the comprehension process, allowing students to have access to their peers' thinking, assisting students in building meaning that may be provided by collaboration, and having an expert other—the teacher—support students' meaning building. The expert other also benefits from this format, for instance, in being able to observe confusion as it occurs and consider what the source of confusion might be. The teacher also gains understanding of the complexity of the comprehension process and students' individual differences in engaging in that process. This provides the teacher a basis for deciding how to intervene to support students.

Within the reading-and-discussion format, the major question that prompted this study arises: Which better supports comprehension, a strategy focus or a content focus? Even if results had indicated that strategies and content produced no differences in student outcomes, there is reason to question the productivity of strategies instruction if an equally effective approach allows students to consider text meaning directly rather than indirectly through strategies. Our results indicate that going directly for meaning is feasible and at least as effective as pursuing meaning by going through strategies.

Part of the rationale underlying both content and strategies approaches is that they encourage active processing. But what is active processing? Must it include conscious and deliberate attention to the process or just consciousness that a process exists—that active effort needs to be made toward understanding? Sinatra, Brown, and Reynolds (2002) highlighted the importance of an active stance in contrast to explicit knowledge of strategy application. They explained their choice by saying that allocation of deliberate attention while reading may not involve deliberate awareness—competent readers don't consciously tell themselves "pay attention to what's important." Further, Sinatra et al. considered that continued attention to deliberate use of strategies may undermine comprehension. This is because comprehension takes significant mental resources, which are limited. So if some resources are devoted to calling up strategies, adequate resources may not be directed toward the actions needed for comprehension because students are being asked to do something in addition to making sense of the text.

Our findings suggest that getting students to actively build meaning while reading does not necessitate knowledge of and focus on specific strategies, but, rather it may require attention to text content in ways that promote attending to important ideas and establishing connections between them. We acknowledge that the consensus in the field is that strategies instruction is useful (Baker, 2002; Block, Gambrell, & Pressley, 2002; Gersten et al., 2001; NICHD, 2000). But an overall positive picture does not provide insight into what it is about strategy instruction that may enhance student reading. Such a general claim is inadequate for guiding teachers as to effective ways of using strategies in the classroom. Our review of the literature demonstrates that how strategies should be taught is not easily derived from the research. Among the problems is that strategy labels do not represent a consistent set of activities, and there is little description of how students interact with strategies in the course of reading.

It can be argued that the strategies instruction we implemented was not optimal. Given our design and iterative review process, however, we are satisfied that

our lessons were a reasonable representation of strategies instruction. A claim that there are better representations of strategies instruction carries with it a need to not only provide such representations but also show what it is about them that may lead to better outcomes. Our specifications of instructional procedures and record of every lesson enable detailed understanding of what transpired during the lessons and allow reasonable hypotheses to be made about the learning consequences of the lessons. Additionally, our lesson design provides a touchstone that can be scrutinized, compared, and evaluated.

So what is the appropriate role of comprehension strategies in the classroom? Surely, no one would want to omit from the curriculum the ability to develop summaries or be aware of the need to draw inferences. Our recommendation is that such strategies be taught but that they not lead the process of building understanding of a text. Rather, we suggest concepts such as summary, inference, and prediction be introduced to students with examples using short texts. Then those terms can be used during discussion to talk about such text interactions as they occur. For example, if a student summarizes a section of text during discussion, the teacher could comment that the student provided a good summary, or a teacher might point out that a student had drawn an inference.

In the present study, lesson transcripts showed that strategies questions did prompt students to bring key ideas into the discussion but that students spent as much time focusing on the strategic actions themselves as on the content of what they were reading and seemed less likely to connect the ideas. The importance of making connections among ideas is paramount. Focusing on strategies during reading may leave students less aware of the overall process of interacting with text, especially in terms of the need to connect ideas they encounter and integrate those ideas into a coherent whole. Content instruction, because it focuses directly on important ideas and making connections, may be more likely to support students in building a coherent representation.

Notes

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Appendix A

Summaries of Narrative and Expository Texts Used in Lessons

Narrative Texts From Basal Series

Frindle by Andrew Clements

This story is classified as realistic fiction. It is one of the simpler stories in this theme.

Synopsis: The witty class clown invents a new word for pen and comes up with a plan to get all of his classmates to use the word.

Off and Running by Gary Soto

This story is classified as realistic fiction. A number of Spanish words have been incorporated into the text of this story.

Synopsis: A girl is running for class president against the class clown. In her struggle to win, she seeks advice from a female relative who was formerly mayor of a city in Mexico.

Little by Little by Jean Little

This story is classified as an autobiography. This story is set apart from the others as it invokes background knowledge about World War I.

Synopsis: Jean Little, the partially blind author, tells a story about being teased at school for having poor eyesight and struggling with math.

Dear Mr. Henshaw by Beverly Cleary

This story is classified as realistic fiction. Instead of being written in standard narrative form like the other stories in the theme, this story is written as a series of journal entries.

Synopsis: A boy who aspires to be an author copes with anxieties at school and at home by writing in his journal. He designs an elaborate alarm for his lunchbox that wins him notoriety at school, and after writing about the alarm for a school writing contest, he gets a chance to meet a published author.

The Fun They Had by Isaac Asimov

This story is classified as science fiction. This is the only science fiction story in this theme, and it requires more abstract thought than do the other stories.

Synopsis: A boy living in the future finds a book about school in our time. After sharing the book with his friend, Margie, she decides that she would rather go to school with other children and with a human teacher like in our present time rather than alone and with a robotic teacher as in her future time.

Expository Texts

Body Language by Margery Facklam

This text describes how a variety of animals use body language to communicate with each other. It also describes how we can read this body language and use it for our own advantage. The concepts addressed in this text are concrete and familiar to students. Therefore, this text appears to be the easiest of the three expository texts.

Barks, Chirps, and Melodies by Margery Facklam

This text describes how Vervet monkeys make different warning calls for different types of dangers. It also addresses the different calls that birds use to communicate with each other.

Messages by the Mile by Margery Facklam

This text describes how whales and elephants communicate through infrasonic messages, sounds that humans cannot hear but can feel. This text also talks about scientific research on these sounds. Due to the abstract nature, this text appears to be the most difficult of the three expository texts.

Appendix B

Example Prompts From Lesson Scripts (From *Off and Running* and *The Fun They Had*) for Each Approach

Off and Running:

Strategies

Prompt 8: Question Generation

1. Let's think back about the important parts of what we just read, and ask a question that will make us think more about those parts. Ask a question like a teacher would ask on a test. Remember we should be able to answer these questions from the text we just read.
   - *One student responds with a question. Accept all reasonable responses.*
2. Is this question getting at the important ideas, and can we answer it from what we just read?
3. Now let's think some more about what's important in what we just read and ask another question. Remember, we have to be able to answer the question from what we just read.
   - *One student responds with a question. Accept all reasonable responses.*
4. Is this question getting at the important ideas, and can we answer it from what we just read?
5. So why do we ask ourselves questions?

   [student response]

   Yes! So, did our questions make our brains think more about the important parts of what we've been reading?
6. *If students have trouble generating questions*

   How can we can help ourselves come up with a question?

   [If needed, hold up cheat sheet/card as a clue]

   That's right, think of our question words. Look on your cheat sheet and say the words with me: who, what, when, where, why, or how. So, who can use one of those words to ask a question here?

   Call on one student to respond; proceed as in #4.

   Possible questions:

   What is Miata's promise if she wins the election?

Content

Prompt 8

To establish that Miata plans to improve school appearance if she becomes president and to establish that Miata feels that her ideas are silly after hearing Dona Carmen:

What's this all about?

If students don't mention point above:

Reread:

"After listening to the old woman's story, Miata was afraid that she had nothing really to offer."

What does this tell us?

Basal

Prompt 10: Make Judgments

Do you agree with Miata's statement that the things she wants to do are just little things? Why or why not?

Possible response: No, cleaning up graffiti, repairing broken equipment, caring for lawns, and planting flowers are big jobs for a fifth grader.

The Fun They Had:

Strategies

Prompt 2: Infer

1. Let's stop here and make an inference about the teacher.
   - Students respond with an inference.
2. *If students responded with an appropriate inference:*

   What did you do to make an inference?

   - *If students can't describe the process*

   To infer, we put together an idea we just read with something we read earlier, or know already, to come up with an idea that's not written in the text

but the author wanted us to think. Sometimes inferring is called reading between the lines.

3. With this in mind, did we make a good inference?

   (If needed, use the definition to help students evaluate the inference, and if it's not appropriate, to revise it.)

4. *If students cannot come up with an appropriate inference*

   We need to put together what we just read with something that we read earlier to make an inference. So we just read that the teacher is mechanical—which means it's a kind of machine. We read that the teacher can be taken apart and repaired, and it has a screen where you can see lessons.

   • So if we read between the lines, what can we infer from those two things?

   Students respond with an inference.

   • *If students still can't come up with a good inference*

   Since the teacher is mechanical, can be repaired, and has a screen where you can see lessons, we can infer that the teacher is some kind of computer.

Content

Prompt 2

To clarify that the teacher is not just a machine but some kind of computer:

So what's the author telling us now about the teacher?

If students repeat phrases from the text:

That's what the author says, but what does he mean by that?

Basal

Prompt 3: Main Idea

Why did Margie hate putting her homework and tests into the slot most of all?

Possible response: Because it was impersonal, programmed, and uninteresting; she had to use a punch code, which meant her grade was calculated immediately.

Note. The script examples are for the three separate instructional approaches and thus vary in style and format.

Appendix C

Example of Sentence Verification Technique Item Design Based on The Three Little Pigs

	True	False
Paraphrase	The wolf blows down the first little pig's house and then eats him.	The wolf blows down the first little pig's house and puts him in a cage.
Local inference	The wolf could not blow down the brick house because the bricks were too heavy.	The wolf could not blow down the brick house because he was too hungry.
Global inference	The third little pig avoids being eaten by the wolf because he is smarter than the wolf.	The third little pig avoids being eaten by the wolf because he is stronger than the wolf.

Appendix D

Example of Strategies-Task Text and Questions

Go-Kart

When I was 11 years old, I got in the biggest trouble of my life. It was all because my father bought me a go-kart. The go-kart was fire engine red and had a chain-saw motor that was a screaming terror. My family lived in a neighborhood with winding dirt roads. Before long I was blasting through turns, kicking up gravel in the go-kart.

The roads weren't the only things that were dirt. So were the driveways. But one morning, an asphalt truck pulled up to our house. Soon our dusty, rutted drive became a perfect, smooth, black ribbon.

A few days later my mom and dad had to go out. Before they left, my dad reminded me of my promise. I promised I would never use the go-kart if he wasn't around. If I did, no more go-kart.

After my parents left, one of my friends came over. In no time we were rolling the kart out on the drive. I figured a little ride wouldn't hurt. Besides, my dad would never know.

The gas tank on the go-kart was empty. We kept extra gas in a giant, 10-gallon gas can. We dragged the full can across the driveway and lifted it up, but it was too heavy for us. We ended up pouring one gallon of gas into the go-kart and about nine gallons onto the driveway.

The next thing I knew, the go-kart was sitting in a puddle of gooey black muck. And that muck just melted away as we watched. We just stared at the crater like it was a science experiment gone very wrong.

I knew I was going to be in big trouble. And as it turned out later, I was right. But for right now, not only had I broken my promise about not using the go-kart, but I'd also messed up our brand-new driveway. I felt so bad. I just rolled the go-kart back to the garage.

While I waited for my parents to come home, I felt worse and worse. Finally, they pulled into the drive and parked right over the hole. They hadn't noticed it. Was I lucky!

I remembered hearing that cars can leak gas. Maybe my dad would believe that was what happened to our drive. If he believed that, I was saved!

1. What might a teacher ask on a test to see if you understood important ideas from the story?
   a. Why was the asphalt driveway important?
   *b. Why will the boy's parents be upset with him?
   c. What did the kid do with the go-kart after filling it with gas?
   d. Why did the boys play with the go-karts when parents weren't home?
2. What would be a good prediction about what might happen next in the story?
   a. The kid's parents will believe their car caused the driveway hole, and the kid will only be in trouble for not telling them the gas can was empty.
   b. The kid will tell Mom that his friend caused all the trouble.
   *c. When Dad moves the car into the garage, he'll start yelling about the driveway.
   d. The kid will tell Dad everything, but he won't get in trouble because he told the truth.
3. Reading between the lines, what could you infer from the story?
   *a. When gas gets on fresh asphalt, the asphalt melts away.
   b. Some cars have gas tanks that leak.
   c. A lot of kids in the neighborhood had go-karts.
   d. You have to take special care of asphalt driveways so they stay in good shape.
4. Which of these is a good summary of the story?
   a. A kid broke his promise by filling up the gas tank on his go-kart, and he made a mess of his new driveway.
   b. A kid wanted to use his go-kart, but everything went wrong because he was out of gas.
   c. A kid's friend talked him into breaking the rules with his go-kart, and because of that they messed up the driveway.
   *d. A kid broke his promise and tried to use his go-kart without his dad, and he ruined their new driveway doing it.

Note. * indicates correct choice.