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Research within a schema-theoretic perspective has been powerfully robust in demonstrating the crucial role of readers' prior knowledge in text comprehension. Prior knowledge, in the form of schemata, appears to provide a conceptual framework that facilitates comprehension (Anderson & Pearson, 1984). Although there have been recent criticisms of schema theory itself (Norris & Phillips, 1987, 1994; Sadoski, Paivio, & Goetz, 1991), the crucial role of prior knowledge in text comprehension has become conventional wisdom in the reading field. This conventional wisdom is supported by a considerable body of instructional research demonstrating the effectiveness of activating and building students' prior knowledge before reading a text. Such effective instruction includes activities such as previews (Graves, Cooke, & LaBerge, 1983), prereading discussions (Beck, Omanson, & McKeown, 1982; Hansen, 1981; Hansen & Pearson, 1983), story mapping (Idol, 1987), semantic mapping (Anders, Bos, & Filip, 1984), vocabulary development (Stahl & Kapinus, 1991), and writing (McGinley & Denner, 1987).

All of these activities have been shown to be effective when contrasted with basal reading instruction or no instruction at all. However, they have not been contrasted with each other to determine their comparative effectiveness for different instructional goals. Dole, Valencia, Greer, and Wardrop (1991) conducted one of the few studies comparing the relative effectiveness of two activities designed to build and activate students' prior knowledge. They compared a teacher-directed strategy in which teachers read prepared scripts designed to activate prior knowledge with interactive instruction in which students and teachers together activated and discussed students' prior knowledge before reading. Results indicated that the teacher-directed strategy was more effective than the interactive instruction when the goal was to read an upcoming text.

Dole et al. cautioned, however, that other instructional goals are likely to require different instructional activities. For example, when the goal is to comprehend independently read texts, a more useful teaching technique might be to teach students a strategy for activating their own prior knowledge. Thus, even though a teacher-directed strategy may help students understand a text at hand, a student-centered strategy may be more likely to help students with texts they read on their own.

The current study was designed to test this hypothesis. For this study we taught at-risk readers a strategy

The effects of strategy instruction on the comprehension performance of at-risk students

THIS INSTRUCTIONAL study examined group and individual differences arising from strategy instruction. In the first phase of the study, 67 fifth and sixth graders from a designated at-risk school were randomly assigned to one of the three treatments—strategy instruction, story content instruction, and basal control instruction. For 5 weeks, all students received one of the three treatments embedded within a narrative selection they read each day. Baseline, immediate posttest, and 7-week delayed posttest data were analyzed using ANCOVA. Results indicated that the strategy group performed as well as the story content and basal control groups when students read texts after receiving instruction. However, the strategy group outperformed the story content and basal control groups when students were asked to read selections on their own. In the second phase of the study, two students from the strategy group were selected to examine individual students' responses to strategy instruction. Written assessments, classroom observations, and oral interviews were used to identify possible reasons why a lower achieving student used the strategy she learned successfully, and a higher achieving student did not. It appeared that the lower achieving strategy user was motivated to use the strategy which she perceived as helpful to her. Further, as her ability to use the strategy increased, so did her daily comprehension of the stories she read. On the other hand, the higher achieving student was not motivated to use the strategy. She perceived the strategy as unhelpful and preferred her own strategies instead. This student's daily comprehension actually declined as she used the strategy. Taken together, both phases of the study shed light on the benefits of strategy instruction for at-risk students. But findings from this study also show how students' motivation can influence their use of the instruction they receive. The study concludes by raising critical questions regarding the role of motivation in strategy instruction and use.

Los efectos de la enseñanza de estrategias sobre el desempeño en comprensión de estudiantes de riesgo

ESTE ESTUDIO didáctico examinó las diferencias grupales e individuales que surgen de la enseñanza de estrategias. En la primera fase del estudio, 67 niños de quinto y sexto grado de una escuela de riesgo fueron asignados al azar a uno de los tres tratamientos–enseñanza de estrategias, enseñanza de los contenidos de narraciones y enseñanza básica de control. Durante cinco semanas, todos los estudiantes recibieron uno de los tres tratamientos en el marco de la lectura diaria de una selección de narraciones. Los datos de base, los del post-test inmediato y los del post-test realizado después de siete semanas se analizaron usando ANCOVA. Los resultados indicaron que el grupo asignado a estrategias de se desempeñó tan bien como el grupo asignado a contenidos narraciones y como el grupo de control cuando los estudiantes leyeron textos luego de recibir la instrucción. Sin embargo, el grupo asignado a estrategias se desempeñó mejor que el grupo asignado a contenidos de narraciones y que el grupo de control cuando se pidió a los estudiantes que leyeran selecciones por sí mismos. En la segunda fase del estudio, se seleccionó a dos estudiantes del grupo asignado a estrategias a fin de examinar las respuestas individuales de los estudiantes a la enseñanza de estrategias. Se utilizaron evaluaciones escritas, observaciones de aula y entrevistas orales para identificar las razones posibles por las que una estudiante de bajo rendimiento usaba con éxito la estrategia aprendida, y una estudiante de alto rendimiento no lo hacía. Presumiblemente, la estudiante de bajo rendimiento se sentía motivada para usar la estrategia que percibía como una ayuda. Más aún, a medida que aumentaba su habilidad para usar la estrategia, también aumentaba su comprensión diaria de las narraciones que leía. En contraste, la estudiante de alto rendimiento no estaba motivada para usar la estrategia. No percibía la estrategia como una ayuda, y en su lugar prefería sus propias estrategias. La comprensión diaria de esta estudiante declinó a medida que utilizaba la estrategia. En su conjunto, ambas fases del estudio ilustran sobre los beneficios de la enseñanza de estrategias a estudiantes de riesgo. Sin embargo, los hallazgos de este estudio también muestran cómo la motivación de los estudiantes puede influenciar el uso de la enseñanza que reciben. Este estudio concluye con la formulación de preguntas críticas acerca del rol de la motivación en la enseñanza y el uso de estrategias.

Die Auswirkungen von Lehr- und Lernstrategien zur Sinnerfassung von Texten bei leistungsschwachen Schülerinnen

DIESE METHODISCHE Studie erfaßt gruppale und individuelle Unterschiede, die sich aus unterschiedlichen Unterrichtsmethoden ergeben. Im ersten Abschnitt der Studie wurden 67 schwach begabte Schülerinnen der 5. und 6. Schulstufe willkürlich einer von drei Lehrmethoden zugeordnet, und zwar einer lernzielorientierten Unterrichtsmethode, einem sinnerfassenden Lesekonzept und einer Kontrollgruppe zur Förderung von Lesekompetenzen. Fünf Wochen lang wurden alle Schülerinnen nach einer der drei Methoden unterrichtet, wobei bei allen eine mündliche Wiedergabe des täglichen Lesepensums vorgesehen war. Die Ausgangswerte, die Daten des unmittelbaren Endtests sowie die des Abschlußtests nach 7 Wochen wurden gemäß ANCOVA analysiert. Die Ergebnisse zeigten, daß alle drei Gruppen gleich gut abschnitten, wenn die Schülerinnen unmittelbar nach den Arbeitsanweisungen die Texte gelesen hatten. Es wurde beobachtet, daß die lesetechnisch geschulte Gruppe und die Kontrollgruppen in erster Linie auf den Inhalt achteten, wenn sie einen Text nach freier Wahl erarbeiteten. In der zweiten Phase der Studie wurden zwei Schülerinnen aus der Lernstrategiegruppe ausgewählt, um eine individuelle Identifikation mit bestimmten Lernmethoden zu beobachten. Schriftliche Überprüfungen, Beobachtungen des Unterrichtsertrages und mündliche Befragungen wurden eingesetzt, um die lerntheoretische Grundstruktur des Selbsterfahrungslernens zu identifizieren, d.h. um herauszufinden, warum ein lernschwacher Schüler erfolgreich eine Lernmethode annimmt, ein begabterer Schüler dagegen nicht. Es war offensichtlich, daß die leistungsschwache Schülerin durch positive Erfahrung mit der ihr vermittelten Lernstrategie motiviert war, diese anzuwenden. Weiters wuchs mit der zunehmenden lesetechnischen Kompetenz auch die leichtere Sinnerfassung von Texten. Andererseits war die leistungsstärkere Schülerin nicht bereit, die neuen Lernstrategien anzuwenden. Sie empfand die neuen Lernstrategien als unnötig und bevorzugte eigene Lernstrukturen, wodurch sich jedoch ein deutlicher Leistungsabfall im Bereich der Sinnerfassung ergab. Zusammenfassend kann behauptet werden, daß leistungsschwächere Schülerinnen von Lernstrategien profitieren. Die Ergebnisse dieser Studie zeigen jedoch auch, wie stark die individuelle Motivation die Lern- und Aufnahmebereitschaft beeinflußt. Die Studie schließt mit einigen kritischen Fragestellungen nach der Bedeutung der Motivation bei der Rezeption von Lernstrategien.

理解度が危機的状況にある生徒たちに与えるストラテジー指導の効果

指導に関するこの研究はストラテジー指導によって起こるグループ間の差異、及び個人間の差異を調査した。研究の第一段階では、学力が低いと評価されている学校から６７名の小学５年生、６年生が抽出され、その生徒たちはストラテジー指導、物語の内容指導、そして初級用読本の管理指導といった３つの補助指導のうちの１つが無作為に割り当てられた。全ての生徒は毎日読むことになっている物語全集に組み込まれた形式で、５週間にわたり、その３つの補助指導のうちの１つを受けた。ANOVA を使って、ベースラインデータ、指導直後のテストデータ、そして７週間後のテストデータが分析された。その分析結果によると、指導を受けた後にテキストを読んだ場合、ストラテジー指導を受けたグループの理解度は、物語の内容指導を受けたグループ、及び初級読本の管理指導を受けたグループと同様であった。しかし自分自身で物語を読んだ場合は、ストラテジー指導を受けたグループの方が他の２つのグループに比べ、優っていた。この研究の第二段階では、ストラテジー指導のグループから２人の生徒が選ばれ、ストラテジー指導に対する生徒の個人的反応が調査された。能力の低い生徒はなぜ学んだストラテジーを上手に活用したのか、一方能力の高い生徒はなぜ活用しなかったのか、そのありうる理由を確認するために、筆記による評価、教室での観察、口頭によるインタビューがなされた。能力の低い生徒には自分に役立つストラテジーなら使ってみようという動機づけがあった。さらにそのストラテジーを使う能力が高まるにつれて読んだ物語の日々の理解度もまた向上した。一方能力の高い生徒にはそうしたストラテジーを使ってみようという動機づけがなかった。能力の高い生徒は学んだストラテジーが役に立たないと思い、代わりに自分自身のストラテジーを好んで使った。教えられたストラテジーを使った場合、この生徒の日々の理解度は実際下降した。総合的に見ると、この研究の２つの側面は理解度が危機的状況にある生徒に対しては、ストラテジー指導が効果があることを明確にするものであった。しかし、この研究結果はまた、生徒の動機というものがどのように受けた指導の活用に影響を与えるかをも示した。この研究はストラテジーの指導と活用における動機の役割に関する重要な問題を投げかけることで締めくくられている。

Les effets d'un enseignement de stratégie sur les résultats en compréhension d'élèves à risque

CETTE ETUDE didactique a porté sur les différences par groupe et par individu d'un enseignement de stratégie. Dans la première phase de la recherche, 67 élèves de 5e et 6e année provenant d'une école considérée comme à risque ont été répartis de manière aléatoire dans un des trois traitements–enseignement de stratégie, enseignement du contenu de l'histoire, et enseignement de base contrôle. Pendant cinq semaines, tous les élèves ont reçu un des trois traitements inclus dans un passage narratif qu'ils ont lu chaque jour. On a analysé par ANCOVA les données de départ, celles du posstest immédiat et celles du posttest différé de sept semaines. Les résultats ont montré que le groupe avec stratégie a réussi aussi bien que le groupe avec contenu de l'histoire et que le groupe contrôle quand les élèves ont lu les textes après avoir reçu l'enseignement. Cependant, le groupe avec stratégie a dépassé les deux autres groupes quand on a demandé aux élèves de lire d'eux-mêmes des extraits. Dans la seconde phase de la recherche, deux élèves du groupe avec stratégie ont été sélectionnées pour examiner les réponses individuelles des élèves à un enseignement de stratégie. On a utilisé des évaluations écrites, des observations de classe, et des entretiens oraux pour savoir pourquoi une élève faible avait utilisé la stratégie que'elle avait apprise, alors qu'une bonne élève ne l'avait pas fait. Il est apparu que l'élève faible avait été motivée à utiliser cette stratégie car elle l'avait perçue utile pour elle. De plus, en améliorant sa capacité à utiliser la stratégie, elle a amélioré chaque jour sa compréhension des histoires qu'elle a lues. Par ailleurs, l'élève qui avait été performante n'a pas été motivée à utiliser la stratégie. Elle l'a perçue comme inutile et a préféré utiliser sa propre stratégie. Jour après jour la compréhension de cette élève qui utilisait sa stratégie est allée en diminuant. Considérées simultanément, les deux phases de la recherche apportent un éclairage sur les bénéfices d'un enseignement de stratégie pour les élèves à risque. Mais les résultats de cette étude montrent aussi que la motivation des élèves peut influer sur l'utilisation de l'enseignement qu'ils reçoivent. La recherche conclue en soulevant des questions critiques relatives au rôle de la motivation dans un enseignement de stratégie et sur son utilisation.

they could use to activate their own prior knowledge independently before they read. We chose at-risk readers because we know that many of these readers are lower achievers, and studies have shown that lower achievers particularly benefit from learning specific strategies (see, for example, Duffy et al., 1987; Palincsar & Brown, 1984; Wong, 1985). We compared this strategy instruction to teacher-directed instruction—what we call *story content instruction*—where we present content that builds and activates students' prior knowledge about the topics of upcoming texts. This instruction was used because we know that it has strong, positive effects on comprehension (Dole et al., 1991; Graves et al., 1983). We also compared strategy instruction to traditional instruction found in the teachers' manuals of basal readers.

In the second phase of the study, we examined how two particular students responded to the strategy instruction they received. Research on strategy instruction has focused primarily on group rather than individual differences. Yet, we know that students do not perceive and use instruction uniformly (Duffy, Roehler, & Rackliffe, 1986; Pressley, Goodchild, Fleet, Zajchowski, & Evans, 1989; Shulman, 1986; Winne & Marx, 1982). We also know that motivation is a key component of continued strategy use (Paris, Wasik, & Turner, 1991; Pressley et al., 1989; Schunk, 1989) and may affect if and to what degree students use the strategies they learn. As our study progressed, we began to see that students did not perceive and use the strategies uniformly, and that some students were more motivated to use the strategies they learned than others. Consequently, we chose to take a fine-grained look at how two particular students responded to the strategy instruction they received.

Phase one: Strategy intervention study

Theoretical framework

This study is grounded in a constructivist, interactive model of the reading process (Rumelhart & Ortony, 1977; Spiro, 1980). In this model, readers are not passive recipients of information from text. Rather, readers are active participants in the meaning-making process. As active participants, readers bring with them an abundance of knowledge that they use as filters to interpret information they gather from words on the page. Comprehension occurs when readers integrate their existing (or prior) knowledge with new information derived from the text (Anderson & Pearson, 1984).

Readers bring with them different types of knowledge that they use to comprehend text. Paris, Lipson, and Wixson (1983) identified three related types—declarative, procedural, and conditional knowledge. For the current study, we developed instructional interventions that emphasized these three types of background knowledge. In the next section, we describe each instructional intervention, its theoretical underpinnings and related research, and the advantages and disadvantages of each.

Story content instruction

The story content instruction designed for the current study was derived from a schema-theoretic perspective of the reading process (Anderson & Pearson, 1984), and from instructional research on activities that promote the activation and building of declarative knowledge before reading (see Tierney & Cunningham, 1984, and Pearson & Fielding, 1991, for reviews).

According to a schema-theoretic view of the reading process, readers use their existing background knowledge as a framework for understanding new texts. When readers do not have adequate knowledge about the topic of a text, their comprehension is likely to be limited (Anderson & Pearson, 1984). Further, when readers have the appropriate knowledge, but that knowledge is not activated, comprehension is also likely to be limited (see Bransford, 1979, for a review). Therefore, having appropriate declarative knowledge about the topic of a text is necessary but not sufficient for comprehension of a text; the knowledge must be activated.

Bransford (1979) summarized a body of research which suggests that "the presentation of information that helps people activate appropriate knowledge...can have powerful effects on their abilities to comprehend, to remember, and to solve problems" (p. 141). For example, work by Ausubel (1960) on advanced organizers has demonstrated strong effects of building appropriate background knowledge on text comprehension and recall. More recently, Beck et al. (1982) found that young readers who were provided with intensive instruction related to the potentially difficult parts of a story improved their comprehension of that story significantly more than students who received traditional basal instruction. Similarly, numerous studies by Graves and his colleagues (Graves et al., 1983; Graves & Prenn, 1984, 1986) demonstrated that readers who were given instruction on conceptually difficult concepts and ideas in stories significantly improved their comprehension of those stories over readers who were given other types of prereading instruction.

The single biggest advantage of the story content instruction we developed is that it is consistent with research showing the positive and robust effects of declarative knowledge on text comprehension. Another advantageous characteristic is that story content scripts are prepared ahead of time and focus on only the most important—and potentially difficult—aspects of the story.

Teacher control over the content of instruction helps ensure that, just before reading the text, students focus on the concepts and ideas most necessary for constructing a coherent understanding of what they read. As such, the likelihood of students being drawn off track by seductive details or tangentially related information is minimized (Beck, McKeown, McCaslin, & Burkes, 1979; Dole et al., 1991; Garner, Gillingham, & White, 1989).

Despite these advantages, story content instruction is not without some potential problems (Dole et al., 1991). One of the most significant may be that this type of instruction's predeveloped scripts determine the course of the discussion without much student input. Thus, story content instruction may not actively engage readers in the way other, more student-centered forms of instruction might. Further, such instruction may foster teacher dependency (Bereiter & Scardamalia, 1987; Johnston, 1985) as readers come to rely on the teacher for providing the necessary prior knowledge. Without direct instructional assistance, then, some readers may be unsure of how to proceed with texts they read independently.

In sum, we know that story content instruction can improve readers' comprehension of specific texts, especially difficult ones. But, some researchers suggest that direct teacher support might not be the optimal kind of instruction when the goal is to improve comprehension of new or independently read texts for which readers receive no instructional help. Some believe that it is necessary to explicitly teach the procedural and conditional knowledge that readers need to cope with texts they read on their own. For this goal, strategy instruction might prove to be more effective than story content instruction.

Strategy instruction

The focus of strategy instruction centers on developing readers' procedural and conditional knowledge to improve their comprehension of texts. The strategy instruction we developed was designed to promote self-regulation by teaching readers how, when, and why to activate their own prior knowledge when they read texts independently.

Strategy instruction is based on a significant body of research on good and poor readers. This research suggests that good readers possess a number of flexible, adaptable strategies that they use before, during, and after reading to maximize their comprehension (Baker & Brown, 1984; Garner, 1987). Strategic readers are purposeful, thoughtful, and reflective about the reading process. They reflect on what they already know about a topic and plan their approach to a text accordingly. They also monitor and evaluate their ongoing understanding and use compensatory strategies when they do not understand.

A growing body of research supports the teaching of specific strategies for improving students' reading comprehension (see, for example, Anderson & Roit, 1993; Block, 1993; Deshler & Schumaker, 1993; Miller, 1985, 1987; Palincsar & Brown, 1984). In general, these studies suggest that students can be taught to use strategies, and that strategy use increases students' awareness of their own performance as they read (see Garner, 1987; Pressley et al., 1989; Pressley et al., 1992, for reviews).

A number of teacher instructional actions appear to increase the effectiveness of strategy instruction (Bereiter & Bird, 1985; Duffy, 1993; Paris et al., 1991; Roehler, 1991; Roehler & Duffy, 1991). First, students benefit when teachers model, talk aloud, or "make thinking public" (Paris, 1986, p. 119) about their reasoning as they read. Second, students benefit when teachers gradually reduce their role until students are ready to assume independent control of the strategies they have been learning (Duffy et al., 1987; Palincsar & Brown, 1984; Paris & Oka, 1986; Schuder, 1993). Known as *fading* or the *gradual release of responsibility* (Collins, Brown, & Newman, 1986; Pearson, 1985; Pearson & Gallager, 1983), this process typically is facilitated by the support that teachers provide to help students accomplish an academic task (Applebee & Langer, 1983; Collins et al., 1986; Roehler & Duffy, 1991). Third, students are more likely to self-regulate strategy use when teachers inform them of its benefits and show them evidence of its contribution to improved performance.

The most obvious advantage of strategy instruction is the empirical support for such instruction in the literature. However, studies have not demonstrated the unequivocal value of strategy instruction over more traditional basal instruction. Indeed, three studies (Duffy et al., 1986; Duffy et al., 1987; Paris, Cross, & Lipson, 1984) demonstrated mixed success. Despite intensive, year-long instruction, students who received strategy instruction did not outperform their control peers on all comprehension measures. Yet, they did perform significantly better on measures that directly related to strategic processes such as strategy awareness and comprehension monitoring.

The challenging nature of strategy instruction warrants concern as well. Such instruction is extremely time intensive, with effects often taking months to occur (Harris & Pressley, 1991; Pressley et al., 1989; Roehler, 1991). Further, strategy instruction is very different from the comprehension instruction to which most students and teachers are accustomed. With its emphasis on making abstract cognitive thought processes explicit, strategy

instruction can be difficult for students to understand, especially if the instruction is not sequenced clearly and systematically (Duffy, 1993; Pressley, Snyder, & Garigliа-Bull, 1987; Pressley et al., 1990).

Strategy instruction has the potential of being an effective approach to improving students' comprehension of texts. However, despite the growing number of strategy studies, few studies to date have investigated the comparative effectiveness of strategy instruction and other effective comprehension instruction. Consequently, we were interested in comparing strategy instruction to story content instruction. We expected that the latter would be most beneficial for readers' comprehension of texts they read immediately after instruction. We expected that strategy instruction would be most beneficial for readers' understanding of texts they read on their own. Finally, we expected both strategy instruction and story content instruction to be more effective at helping at-risk readers improve their comprehension than the instruction traditionally found in basal teachers' manuals.

Traditional basal instruction

Instruction taken from basal reading programs has been, at least until very recently, one of the most widely accepted practices in elementary classrooms (Durkin, 1984; Mason & Osborn, 1982). This is one reason we chose this instruction as an alternative treatment to the story content and strategy treatments we developed. We also chose to use basal reader instruction instead of a control, no-treatment condition because we know that, in general, some kind of instruction is better than no instruction at all (Tierney & Cunningham, 1984).

Method

Subjects

Subjects were 67 fifth- and sixth-grade students from a year-round elementary school in a large western city in the United States. The academic and social backgrounds of students in the school met federal criteria for a designation of at risk. Forty-five percent of the students came from minority populations, 67% were eligible for free or reduced cost lunch, and 51% scored in the lowest quartile on the reading portion of the Stanford Achievement Test (1982).

At the beginning of the academic year, a team of school administrators and teachers grouped all students in the school for reading instruction. This team used the previous year's Stanford Achievement Test (SAT) reading scores and teacher judgment to form six roughly homogenous groups of fifth- and sixth-grade students: high, high-average, average, low-average, Chapter 1, and resource. We eliminated students in the two extreme groups—high and resource—and used the remaining pool of 75 students as subjects for this study.

The study began with 75 students, but 8 students were absent 1 or more of the 6 testing days. These students were dropped from the data pool, leaving a total of 67 subjects, 39 fifth and 28 sixth graders. The mean percentile score for these students on the reading section of the SAT was 25%.

Materials

Texts. The instructional texts used for all treatment groups in this study were taken from a basal reading program adopted by the district. We chose these materials for several reasons. First, basal materials are still widely used in U.S. schools. Second, all participating students had at some time been taught with basals, and so they were familiar with them. Third, we found a sufficient number of quality literature selections in the basals.

We determined quality in the following way. We looked for stories with well-developed plots and clear story structures as defined by Stein and Glenn (1979) and Beck et al. (1982). We also looked for stories that were of appropriate interest and difficulty for the fifth and sixth graders in our study. Two of the three researchers have had extensive experience as elementary teachers. They evaluated all the stories in the basals and made the final selection decisions.

Each story was photocopied directly from the student basal readers. We did not edit any selections, although some selections had been adapted from children's trade books and edited by the publishers to adhere to the readability levels of the basals. General equivalence of the basal stories was assumed because we took them directly from the grade level textbooks. However, it is certainly the case that these texts, like all texts, vary in difficulty depending upon many factors—in addition to those directly measured by readability formulas.

We chose what we determined to be the 24 best narrative selections from the fourth-, fifth- and sixth-grade basal readers that were part of one basal series. We began with fourth-grade selections because the students in our study were in the lower 50th percentile in reading achievement, and we wanted to be sure that students could easily read and understand the materials. As we progressed, however, we found that the students seemed ready for more challenging materials. Consequently, we pulled additional selections from fifth- and sixth-grade texts in the same series. In all, students read 16 fourth-grade, 5 fifth-grade, and 3 sixth-grade selections. All stories ranged between 1,200–1,500 words in length.

Table 1 Scoring rubrics and prototypical responses

Question: What problem did Jerry face after he started sending Mr. and Mrs. Spillane across?

Level 3 rubric: A response that included necessary text-based information for a complete response as well as appropriate inferences and elaborations.

Examples:
1. The car got stuck in the middle of the gulf and he had to go fix the cart in the storm.
2. Jerry had to try to fix the cable and he didn't know how.
3. The wheel needed to be repair [sic] and Mr. and Mrs. Spillane were stuck 250 feet up in the air.

Level 2 rubric: A response that included necessary text-based information for a complete response, but no inferences or elaborations.

Examples:
1. The cable car wouldn't go any farther after a while.
2. Getting the wheel unjammed.
3. The thing was stopped and they couldn't get to the other side.

Level 1 rubric: A response that included only part of necessary text-based information for a complete response, or inappropriate text-based information.

Examples:
1. He was trying to wonder if they would make it back or not.
2. To tell his father.
3. It started to rain.

Level 0 rubric: A response that included information irrelevant to the text or no response at all.

Examples:
1. He found a [sic] old money.
2. The door was broken.
3. They didn't want to go.

Measures. To assess the comprehension performance of students in all three treatments, we developed six tests covering material from each of six basal reading selections. Two tests were administered at the start of the study, two were administered immediately after the study, and the final two were administered 7 weeks later.

All tests were developed in the following way. First, the investigators developed story maps for each selection (Beck et al., 1982). Each map was then used as a framework for developing 10 comprehension questions on key events, concepts, and ideas related to the selection. Four questions targeted vocabulary and content-specific declarative knowledge in the selections. Two questions targeted the story's central problem and its resolution. The remaining four were literal and inferential questions related to important events in the selection.

All questions were open ended. We chose an open-ended question format because it allowed students to produce their own answers to comprehension questions as opposed to simply choosing an alternative from a set of multiple-choice items. Additionally, the open-ended format allowed for partially correct responses and more than one correct response.

To score students' written responses to these questions, we used a generic four-level rubric adapted from Dole et al. (1991). For each question, we read and discussed the range of student responses until we were able to identify prototypical responses for each of the four rubrics. Table 1 shows the scoring rubrics along with prototypical responses for one question taken from the cable car story.

After developing the scoring criteria, each of the three researchers scored the same 30% of responses for each test. A 91% rate of agreement was reached. Thereafter, in a series of group meetings, we separately scored the remaining tests. All ambiguous responses were discussed and resolved in these group meetings.

Procedure

All students in the high-average, average, low-average, and Chapter 1 classes were blocked on ability as measured by the reading portion of the Stanford Achievement Test and randomly assigned to one of the three instructional treatments: the story content instructional treatment, the strategy instructional treatment, or the basal instructional treatment.

A Chapter 1 teacher at the research site, a graduate student, and one of the researchers served as instructors for the study. All three instructors were experienced upper elementary teachers. In order to decrease the possibility of systematic differences due to instructors' teaching styles, two precautions were taken. First, instructors followed prepared scripts for all instructional treatments. Second, instructors rotated through each of the treatment conditions, spending approximately 8 days each with the story content, strategy, and traditional basal groups.

Baseline data on the comprehension performance of all students were collected on days 1 and 2 of the study. On day 1, students in all three treatment groups read one selection and completed 10 written comprehension questions for that selection (hereafter called an Independent Test). The completed responses to the questions provided us with data on students' baseline performance on independent reading tasks when no instruction was provided. On day 2, all students received instruction in the form of one of the three treatments. Then, they read that day's selection and completed 10 comprehension questions for that selection. These responses provided us with data on students' baseline performance on readings for which instructional assistance was provided (hereafter called an Instruction Test).

Instructional sessions occurred Monday through Thursday for 5 weeks. Students read a total of 24 selections (including 2 baseline test days, 2 immediate

Table 2 Characteristics of instructional interventions

Characteristic	Story content	Strategy instruction
Theoretical framework	Schema theory Prose learning research	Expert/novice studies Research on metacognition
Assumptions about the reading process	Reading is the construction of meaning from text	Reading is the construction of meaning from text
Instructional focus	Building/activating declarative knowledge	Building procedural and conditional knowledge
Instructional goals	Maximize comprehension of a given text	Transfer of learned reading strategies to independently read texts
Expectations of teachers	Develop and deliver essential declarative knowledge	Teach strategies and promote transfer
Teacher actions	Provide students with important concepts and vocabulary related to text	Direct explanation Modeling Gradually release responsibility
Expectations of students	Comprehend given text	Gradually assume responsibility for strategy use Comprehend given text Serve as resource to peers
Student tasks	Activate declarative knowledge as directed Read with purpose Answer questions	Use strategic processes while reading Construct story map Answer questions

posttest days, and 2 delayed posttest days). The order of presentation of the stories followed the suggested order in the basal teacher's manual and was the same for all students.

Instructional interventions took place during the first 50-minute period of each day. Students received the treatment condition to which they were assigned, and they read one of the narrative selections. All treatment groups read the same selection on a given day. For example, on day 11 all students read "Rhyming Ink." When they finished reading, they all answered a set of six written comprehension questions. The daily comprehension questions were similar in format to those administered on the test days. We developed these practice comprehension questions to help all students become accustomed to the task requirements of the tests and to provide us with an informal day-to-day measure of comprehension. After questions were answered, the teacher in each treatment group led a short discussion of the selection with students.

On day 21, all students received their regular instructional assistance, read that day's selection, and completed the 10 comprehension questions that made up the Instruction Test. On day 22, students received no instruction, but simply read the selection and completed the Independent Test. These two comprehension tests served as immediate posttest data.

Seven weeks later, we administered two delayed posttests. The Independent Test was administered first to prevent students in the strategy group from benefiting from the review that would precede the Instruction Test. The next day, all students once again received their regular instruction. They then read that day's selection silently and completed the Instruction Test.

Directions for completing the tests were identical for all groups on all tests. Students were told to answer the questions as best they could, but that they could not work together nor refer back to the selection. They could, however, ask the teacher for help with words they were unable to decode. Also, students were told

that they would not be evaluated on penmanship, spelling, or other writing mechanics.

Two treatment conditions were used for the instructional intervention: the story content instructional treatment and the strategy instructional treatment. Each of these treatments, as well as the basal control treatment, will be discussed separately. In addition, Table 2 summarizes the characteristics of each instructional intervention.

Story content instructional treatment. The goal of this instructional treatment was to develop students' declarative knowledge about the topic of a to-be-read text, thereby maximizing their comprehension of that selection. We developed story maps for each selection and then prepared scripts targeting key vocabulary, concepts, and related ideas that seemed critical for comprehension. For example, the script for the cable car story included the term *cable car* and related passage-specific topics such as how a late 1800s cable car system worked and the difficulties the main character encountered in trying to operate one (see Appendix A for the cable car script).

Each script was developed along the following lines. First, the teacher introduced the topic of the selection. Then she encouraged students to activate their prior knowledge about the topic by thinking silently about what they already knew. The teacher followed this statement with a 1-minute wait period. We used this procedure rather than asking students to discuss what they knew about the topic because we did not want to increase the potential for students to focus on irrelevant or peripherally related information that could interfere with comprehension.

After the designated wait time, the teacher then presented important passage-specific information, concepts, and vocabulary within the context of the to-be-read selection. This presentation included a basic outline of the plot, the main characters, and the central problem of each selection. Similar to Graves's previews (see Graves et al., 1983), this presentation of information led students through to the problem of the story. This often meant describing the story well into its plot, but not to the point of resolution. Next, the teacher assigned students a purpose for reading the selection.

Students then read the selection silently. When they finished reading, students completed a set of six practice comprehension questions on their own. Last, the teacher asked them one or two questions related to the problem and resolution of the story.

The time allotted for the total instructional treatment—including before and after reading teacher-led activities—was between 10 and 15 minutes, similar to the strategy and basal treatment groups. This time allotment controlled for systematic differences between the treatments stemming from differences in instructional time and also promoted a brisk instructional pace (Anderson, Hiebert, Scott, & Wilkinson, 1984).

Strategy instructional treatment. The goal of the strategy treatment was to develop students' procedural and conditional knowledge that they could apply to texts they read on their own. Specifically, students were taught how to use their knowledge of text structure strategically. This included how to make predictions about an upcoming selection, how to identify main characters, how to identify the story's central problem, and how to identify a problem's resolution. This procedural knowledge was combined with conditional knowledge about why such a strategy is helpful and how to use it flexibly.

As a means of remembering their predictions and important information they learned through reading the story, students were taught to jot down key words and phrases on an adapted version of the story map developed by Beck et al. (1982). For each selection they read, students constructed story maps that consisted of reminder questions—*who?* for who are the main characters, *what?* for what was their problem, and *how did the problem turn out?* (see Appendix B).

In general, each day began with teacher instruction, followed by silent reading of the day's selection and written responses to the six comprehension questions, and then a short discussion. When the topic of instruction shifted the strategy to the middle and end of the story, however, the teacher transferred part of the allotted instructional time from the beginning of the 50-minute period to the middle and end of the period (see Appendix C for a sample lesson script). The total instructional time for the strategy treatment was 10 to 15 minutes in length—equivalent to that of the story content and traditional basal treatments.

Over the course of the 5-week treatment period, the teacher scaffolded instruction so that students gradually assumed responsibility for using the strategy on their own. At the beginning, the teacher modeled the strategy and how to use it through the story map. Over the next 2 weeks, the teacher assigned class leaders to model using the strategy. During the third week, students worked in small groups. Finally, on the fourth and fifth week, students worked in pairs and then on their own. All the while, the teacher acted as a coach, providing students with hints, reminders, and cues.

While the story content and basal instruction were new each day and specific to each new story, the strategy instruction was ongoing and cumulative, building on students' growing knowledge about strategies through the course of the treatment. Therefore, we needed to ensure the continuity of the strategy treatment across the

rotating teachers and over the course of the 5 weeks. We did several things to ensure this continuity. First, we wrote very general lesson plans for the entire strategy treatment at the same time that we developed the scripts for the other two interventions.

Second, we placed one of the researchers in the strategy class to observe ongoing student progress and to report that progress to the rotating teachers over the course of the treatment. This observer took notes daily and talked with each teacher as she worked through the strategy instruction. The purpose of this researcher as observer was to help teachers monitor and track students' progress so they would know where to pick up when they rotated into the strategy group.

Third, several students were interviewed on a weekly basis to provide the researcher-observer and teachers with information about how students were progressing through the treatment. The interviews included both scripted and open-ended questions. The scripted questions followed procedures developed by Duffy et al. (1987), in which students were asked about their perceptions of the daily lessons [e.g., "What was our reading lesson about this morning," "When would you use this information," and "If your friend was absent today and you had to tell him/her how to do it (what we learned today) what would you say?"] Questions also included information about whether students thought they were successful at using the strategy, e.g., "Do you think you are good at using the strategy? Why or why not?" In addition, we included more open-ended questions; for example, sometimes we began the interviews with questions such as, "How's it going today? Why?"

Fourth, questionnaires were administered twice weekly to determine students' understandings about the instruction they were receiving. These questionnaires included information about students' knowledge and use of the strategy as well as their feelings about themselves as readers. Questions included, for example, "Did you use the title and pictures to get ideas about the story before you started reading? Why or why not?" and "What kind of questions did you ask yourself while you were reading the story?"

All of these data were then used to refine and modify the general lesson plans 1 or 2 days in advance of each lesson. Thus, teachers had information from the researcher-observer, student interviews, and questionnaires to help them prepare their scripted lessons for the strategy treatment a few days prior to implementation. These revised scripts ensured that lessons were based on students' evolving understandings of the strategy and also provided continuity for the three teachers teaching the strategy group.

Traditional basal control. The traditional basal control, like the story content instruction, provided students with general information about the upcoming selection, including declarative knowledge about the topic and related vocabulary, and procedural knowledge about word recognition. For this control, we followed the instructional guidelines provided by the teachers' manual of the basal reading program from which the reading selections were taken.

Our instruction for the 50-minute reading period followed the general pattern used with the story content instructional treatment. (See Appendix D for a sample script.) The teacher typically began instruction with a short word-recognition lesson, including a teacher-led discussion of several vocabulary words identified in the teachers' manual. The directions for the discussion often asked the teacher to write selected words on the chalkboard and have students pronounce them. The teacher sometimes included them in sentences or defined them for students. Next, the teacher conducted a short discussion about concepts, situations, and information related to the to-be-read story. As part of this discussion, the teacher often asked students what they already knew about the topic of the upcoming selection, and teacher and students engaged in a brief, interactive discussion about that topic.

Next, the teacher set a purpose for students' reading of the selection. Students then read the selection silently. After they finished, the teacher led a brief discussion relating to the purpose of the reading. Students were then asked to complete the six practice comprehension questions. The total instructional time was between 10–15 minutes within the total 50-minute period.

Results

In order to form the three treatment groups, we had blocked students on ability as determined by their previous year's SAT scores and teacher judgment, and then randomly assigned students to each group. We began the data analysis by reexamining the comparability of the three treatment groups using the new year's SAT scores, which were unavailable when we began the study. When we did this, we found significant differences among the groups, $F(2,64) = 3.49$, $p<.05$, MSerror = 805.31 (story content, $M = 594.65$, $SD = 28.10$, strategy, $M = 601.90$, $SD = 23.73$, basal control, $M = 616.63$, $SD = 32.61$). Because significant differences were found, we employed analysis of covariance (ANCOVA) to remove ability differences in all subsequent analyses, using the new year's SAT scores as a covariate.

Data were analyzed using a mixed factorial design with students' new SAT scores used as a covariate. There was one between-subjects factor (instruction type: story content, strategy, and basal control) and two within-

Table 3 Means and standard deviations for full factorial model

	Time of test			
	Immediate		Delayed	
	Type of test			
Group	Instruction	Independent	Instruction	Independent
Story content				
M	14.33	10.59	16.33	15.68
SD	5.03	4.70	3.99	4.00
Strategy				
M	16.42	17.52	15.74	21.38
SD	3.29	3.81	5.72	3.35
Basal control				
M	13.77	12.37	13.18	15.23
SD	4.79	3.92	4.46	4.62

Note. Maximum score = 30.

subjects factors (test type: Instruction Test and Independent Test) and (test time: immediate posttest and delayed posttest).

Results revealed a significant main effect for instruction type, $F(2,63) = 17.31$, $p<.001$, MSerror = 25.10. Post-hoc analyses (Newman-Keuls) revealed that the strategy instruction group ($M = 17.76$, $SD = 3.08$) scored significantly higher overall than the story content group ($M = 14.23$, $SD = 3.41$) or the basal control group ($M = 13.63$, $SD = 3.81$). There were no significant differences between the story content and basal control group's performance on the comprehension measures. (See Table 3 for the means and standard deviations of the full factorial model.)

There was also a main effect for test time, $F(1,64) = 26.23$, $p<.001$, MSerror = 11.15, indicating an advantage for the delayed posttests ($M = 16.25$, $SD = 4.09$) over the immediate posttests ($M = 14.14$, $SD = 4.28$).

Lastly, there was no main effect for test type, indicating no overall differences between students' performance on Instructional and Independent Tests.

There were three interactions. Perhaps the most interesting interaction was the two-way interaction between instruction type and test type, $F(2,64) = 19.55$, $p<.001$, MSerror = 8.90 (see Figure 1). Newman-Keuls post-hoc analyses revealed that the strategy instruction group performed significantly better on the Independent Tests ($M = 19.44$, $SD = 2.95$) than either the story content ($M = 13.13$, $SD = 3.73$) or basal control ($M = 13.79$, $SD = 3.92$) groups. There were no significant differences between the story content and the basal control group's performance on the Independent Tests. In addition, there were no significant differences among the strategy, story content, and basal control groups' performances on the Instruction Tests.

Second, a two-way interaction between instruction-type and testtime was revealed, $F(2.64) = 3.32$, $p<.05$, MSerror = 11.15. Newman-Keuls post-hoc analyses revealed that the story content group improved significantly from immediate posttest ($M = 12.46$, $SD = 4.33$) to delayed posttest ($M = 16.00$, $SD = 3.58$). No such gains were seen in the strategy group (immediate posttest: $M = 16.97$, $SD = 2.98$; delayed posttest: $M = 18.56$, $SD = 3.88$) or the basal control group (immediate posttest: $M = 13.07$, $SD = 3.87$; delayed posttest: $M = 14.20$, $SD = 14.15$). In addition, these data revealed that the story content group significantly outperformed the basal control group on the delayed posttests.

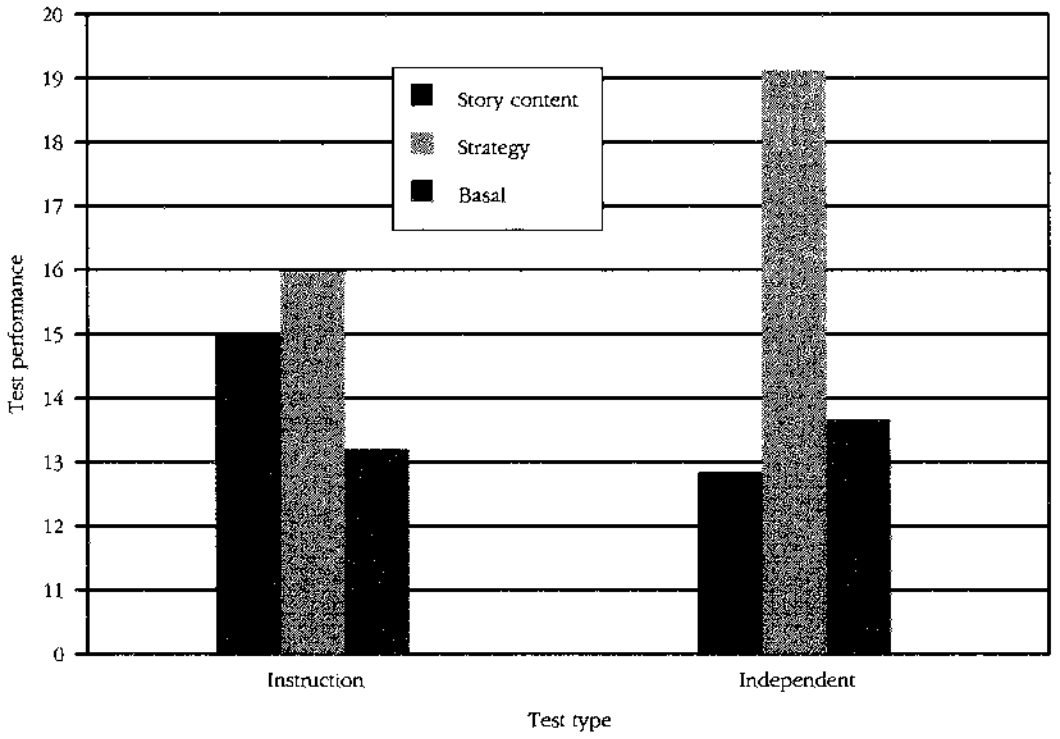
Lastly, there was a two-way interaction between test type and test time, $F(1,64) = 26.97$, $p<.001$, MSerror = 8.48. Newman-Keuls post-hoc analyses revealed that all students did significantly better on the Independent delayed posttest ($M = 17.40$, $SD = 4.80$) than on the other tests. Performance on the other tests was comparable.

The three-way interaction between instruction type, test type, and test time was not significant.

Discussion

Results of the instructional study indicated that at-risk readers who received strategy instruction made superior gains in comprehension performance over their peers who received story content or traditional basal instruction. The differential and superior performance by the strategy group showed itself when students read texts on their own without the teacher's instructional support. There were no significant differences in the per-

Figure 1 Test performance of students in the story content, strategy, and basal instruction groups on texts read after instruction and on independently read texts



Note: Maximum test performance score was 30.

formance of any of the three groups on instructional tests, indicating that all three forms of instruction were about equally effective in helping students understand particular texts. In addition, there were no differences in the performance of the story content and basal control groups on either instructional or independent tests, indicating that both were equally effective in developing students' comprehension abilities.

A reexamination of the characteristics of the instructional treatments identified in Table 2 can help interpret these findings. First, we know that the strategy instruction group outperformed the story content group and the basal control group on the independent tests of transfer. What characteristics of the strategy instructional treatment may have led to students' superior performance here? One characteristic may be the type of knowledge built by the different treatments. The strategy treatment focused on students' procedural and conditional knowledge, while the story content instructional treatment focused on students' declarative knowledge needed to comprehend given texts. We know from other research that developing students' declarative knowledge about the content of texts is helpful, but our findings point out the relative importance of procedural and conditional knowledge in the comprehension process as well. This may be especially important in teaching at-risk readers to read on their own.

Our overall findings about the superior performance of the strategy group can also be related to another characteristic in Table 2, the teacher instructional actions used in the study. The specific focus of the strategy treatment on modeling, coaching, and fading may have provided our at-risk readers with the scaffolding necessary to incorporate the procedural and conditional knowledge they were learning into their own repertoire of reading strategies (Roehler & Duffy, 1991). This explanation would be consistent with arguments by Bereiter and Scardamalia (1987) and Johnston (1985) that point to the transfer value of teaching students to become independent learners who can use certain strategies on their own without teacher support.

A third characteristic of the treatments, the student tasks used in this study, may also be a factor contributing to our findings. Students in the strategy group be-

came more active learners who appeared to develop a sense of control over their learning. The scaffolded instruction may have encouraged them to take ownership of the strategy and to transfer its use to new and independently read texts. It could be that this helped students develop a sense of control and ownership in their learning. Certainly, anecdotal data from teachers who taught the groups suggested that the strategy group was the most vocal and most engaged of the three groups.

We cannot isolate which of the characteristics of the strategy treatment—the types of knowledge learned, the teachers' actions, and the student tasks—led to the strategy group's superior comprehension performance. It may be a combination of all characteristics and others we have not discussed, or the relative importance of one or more of the characteristics, that explain why the strategy group did as well as they did. Isolating these variables and testing them separately certainly deserves further study.

An important finding from this study relates to another characteristic difference among the three groups—the instructional goals. We had expected the story content group to improve significantly over the strategy group on the Instructional Tests. After all, the story content group had been given carefully designed instruction on declarative knowledge crucial to understanding the specific texts used in the Instructional Tests. But none of the three groups differed significantly on these tests, a finding that somewhat surprised us.

We can only speculate about why the story content group did not outperform the other two groups when the instructional goal was the comprehension of specific texts at hand. Teachers reported that this group became more of a discipline problem over the course of the study and that students became more passive and nonresponsive over time. This could have been due, in part, to the minimal amount of dialogue and interaction that these at-risk readers had with the teacher and with one another. It could be that the steady diet of story content instruction hindered the story content group's performance due to their lack of motivation and interest in an activity that provided them with minimal ownership and input.

When we compare these findings to those of Graves and his colleagues and Dole et al. (1991), two issues come up. First, in the Graves studies students who received instruction similar to the story content group read difficult texts. One issue may be that story content instruction may be most beneficial for difficult texts, and may lose some of its power with texts that are less difficult. Second, in the Dole et al. study, students who received instruction similar to the story content group outperformed students who received more interactive instruction. But students in the Dole et al. study were higher achieving students who may have been more willing to play the game of school. In addition, students in the Dole et al. study received instruction on 6 texts rather than on the 24 texts used in this study. It could be that over time, the story content instruction becomes less effective, in particular for at-risk readers who may need more active engagement.

At the same time, it must be remembered that the story content instruction was not any less effective than the other two instructional treatments when the instructional goal was the comprehension of specific texts. So the implications of these findings for classroom practice may need to wait for future research to examine more closely issues related to who receives the instruction and how long the instruction goes on.

These findings lead us to ask, then: What is the value of story content instruction? Research clearly supports its value for building and activating students' prior knowledge which then helps students comprehend a given text, particularly when the text is difficult. But findings from this study point out the limits of story content instruction as well. When story content instruction is used alone and over an extended period of time, particularly with at-risk readers, the instruction may lose some of its power and effectiveness. Under these circumstances, it may be as effective as strategy or traditional basal instruction for specific texts in which the teacher provides support.

In sum, what do these findings tell us about the reading process in general and about the reading instructional process in particular? First, our findings highlight the importance of procedural and conditional knowledge in the reading process, especially for young, at-risk readers. There is an abundance of research demonstrating that expert readers use their procedural and conditional knowledge to help them comprehend texts (see, for example, Baker & Brown, 1984). But young readers, and particularly at-risk readers, may not have such knowledge and may benefit significantly from learning it.

In addition, findings from this study also suggest that at-risk readers who learn procedural and conditional knowledge about how to read texts may benefit just as much as their peers who are provided with specific declarative knowledge about given texts they read. This is a particularly encouraging finding in that it suggests that at-risk readers are not at a serious disadvantage when they lack specific declarative knowledge because they are learning equally important procedural and conditional knowledge that appears to have an effect on their comprehension abilities.

Our findings also highlight the importance of certain instructional actions and student tasks for maximiz-

ing the comprehension abilities of at-risk readers. These students appeared to benefit from direct teacher explanation, coaching, and scaffolding and from tasks that made them active learners. These findings are consistent with other research showing the benefits of explicit instruction for underachievers (Pearson & Dole, 1987; Roehler & Duffy, 1991).

Phase two: Student profiles

Although the primary objective of this study was to evaluate strategy instruction in comparison to other effective instruction, the study evolved over the course of the 5-week period to include a second objective—taking a close look at two particular students' responses to strategy instruction. This second objective arose out of anecdotal information collected by teachers in the strategy group. As the first teacher worked with the strategy group, she noticed that students responded differently to the strategy instruction. In particular, she observed two patterns of responses. First, some students seemed to become more motivated as time went on. These students showed signs of excitement and eagerness to learn the strategy and participate in the daily activities. Additionally, they improved on their responses to the daily practice comprehension questions. At the same time, other students became increasingly unmotivated, expressed a clear dislike for the strategy instruction, and resisted the daily strategy activities.

These early observations led us to the second phase of the study. Early in the instructional period, we decided to develop student profiles of two readers who were prototypical of the two patterns of responses we observed—a lower ability reader who responded well to strategy instruction and a higher ability reader who did not. These students were not chosen to be representative of the total group. Rather, we chose them because they reflected two contrasting responses to strategy instruction, and, as such, they allowed us to raise new questions about students' responses to that instruction.

Theoretical framework

Paris et al. (1983) were among the first researchers to note that effective strategy use is a matter of both skill and will. Learners need the skill, or declarative, procedural, and conditional knowledge necessary to use strategies effectively, and also the will, that is, the motivation to do so. Neither skill nor will alone is sufficient; rather, good strategy users know how to use strategies and choose to put forth the effort to do so (Pressley et al., 1989; Schunk, 1989; Winne & Marx, 1989).

Two motivational issues are often raised in discussions of strategy use. First, research on self-efficacy for learning proposes that students have beliefs about their abilities to apply the skills and knowledge they have to learn something new (Schunk, 1989). These beliefs influence how much effort students expend and, by extension, the degree of their success (Bandura, 1977). Thus, students with high self-efficacy for learning are likely to expend the effort to learn new strategies and to use them. Likewise, students who do not think much of their abilities are not likely to persist in trying to learn strategies that they do not think will help them.

Another construct related to students' motivation for learning is known as utility value. Utility value refers to students' judgments about whether academic tasks will help them accomplish their goals (Pintrich, Marx, & Boyle, 1993). High utility value increases the likelihood that students will be motivated to use what they learn. Conversely, low utility value decreases that likelihood. Thus, if students want to become better readers and believe that strategy use will help them accomplish this goal, then they are likely to value what they learn about strategies and use them. If, however, students do not want to become better readers, or if they do not believe that strategy use will help them do this, then they are unlikely to value strategies or use them.

In sum, several motivational factors influence students' will to use the strategies they learn. Students who have high self-efficacy for learning are likely to put forth the effort to learn and use strategies. And, students who think that strategy use will help them become better readers and who value that goal are also likely to put forth the effort to learn strategies. These motivational factors are likely to exert a strong influence on students' responses to strategy instruction.

However, some researchers also suggest that strategy instruction can influence students' motivation. For example, Schunk (1985) suggested that strategy instruction can promote a sense of control over learning and increase students' self-efficacy. When teachers shift responsibility for strategy use to students and show students explicitly how strategy use positively affects their academic performance, students may come to see themselves as more capable and less reliant on their teacher. This increasing sense of control, as well as the belief that strategy use is valuable, can help students see that the expenditure of effort and persistence of strategy use pays off (Pressley et al., 1989).

Thus, while students' motivation can influence their responses to instruction, we know that instruction can also influence students' motivation. It is this reciprocal relationship between motivation and instruction to which we now turn. In particular, we were interested in two students, one of whom responded in a way consistent with what we would expect from the research on strate-

gy instruction, and one who did not. We were especially interested in examining motivational factors of self-efficacy and utility value that may have contributed to each student's response to the instruction she received.

Method

Subjects

Subjects were two sixth-grade students who had been randomly assigned to the strategy group. Performance on daily comprehension practice questions and classroom observations were used to select a reader whose comprehension abilities improved after strategy instruction and a reader whose performance did not improve. The former reader, Phoung (SAT = 4th stanine), illustrates a typical case of strategy implementation in this population, and the latter, Melinda (SAT = 6th stanine), represents a negative case of strategy implementation (Glaser & Strauss, 1967; Goetz & LeCompte, 1984). These students were selected because they were prototypical cases of the divergent responses to strategy instruction that we observed and also because they were present for the majority of the treatment.

Measures

Data sources for this phase of the study included Phoung and Melinda's responses to questionnaires, interviews, and story map and comprehension question performance. We used their responses to some of the interview questions to examine their self-efficacy as readers and their sense of the utility value of strategy use. We used their story maps and questionnaire responses to evaluate their success at strategy use and their comprehension performance. In addition, informal teacher observations were used to corroborate data from these sources.

Interviews. Over the course of the treatment period, several students, including Phoung and Melinda, were interviewed by one of the researchers. Some of the interview questions related to students' use of the specific lessons they had just received and about the utility value of the strategy. For example, interviewers asked students, "Do you think you are good at using the strategy? Why or why not?" and "How useful is this information to you? When would you use it?" Other questions were more open ended, and asked students in general how they were doing, "How is it going today? Why?" and whether they liked learning about the strategy and why, "Do you like using the strategy? Is the strategy helpful to you? Why or why not?" Phoung and Melinda were interviewed four times, and their responses were written down by the researcher.

Questionnaires. Twice weekly during the treatment period, all students in the strategy group responded to questionnaires related to the strategy they were learning. Some of the items on the questionnaires addressed students' self-efficacy as readers and the utility value of the strategies they were learning. Items related to students' self-efficacy included: I am a _____ reader (super, pretty good, ok, not very good, not good at all). Rate yourself on how good you are at finding the main character's problem (super, pretty good, ok, not very good, bad). Items related to students' sense of the utility value for strategy use included: Will you use what you learned about reading in your other classes? Why or why not? Will you use what you learned about reading when you read on your own? Why or why not? Questionnaire data were collected for a total of six times each for Phoung and Melinda.

Story map performance. As discussed in the first phase of the study, students in the strategy group constructed story maps for each day's reading selection (see Appendix B). For this phase of the study, we scored Phoung and Melinda's story map performance to evaluate their effective use of the strategy they learned. There were approximately 20 opportunities to complete story maps during the treatment period. Due to absences and unfinished work, we were unable to analyze all of Phoung and Melinda's story maps. Twelve maps on the same stories were analyzed. The first six maps were collected during the first half of the treatment period, and the second six maps were collected during the second half of the treatment.

To score the story maps, we first examined all of the maps produced by students in the strategy group—with the exception of Melinda and Phoung. Our goal at this initial level of analysis was to generate categories of appropriate responses for our scoring criteria. We then identified exemplars that reflected high-, medium-, and low-quality responses for the three components of the maps—characters, problem, and resolution. Each component received a score from 0 to 2, with the total score for one story map ranging between 0 and 6. We then independently scored each of Phoung's and Melinda's story maps. An agreement rate of 94% was established. Differences in our scoring were settled in conference.

Comprehension performance. All students in the study completed written comprehension questions on each day's reading selection. For this phase of the study, we examined Phoung's and Melinda's responses to the comprehension questions related to the 12 story maps we had collected. Our purpose here was to evaluate these students' comprehension performance related to their use of the story maps. We wanted to examine how well Phoung and Melinda did on the story maps and on the comprehension questions corresponding to those

maps. Therefore, we targeted for scoring the two questions that related directly to the story maps—those that asked students to identify the main character's problem and resolution. These questions were scored in the same manner as those from phase one, using generic rubrics on a four-level scale. Total scores ranged from 0 to 6 points in total, 0 to 3 for each question.

Informal teacher observations. These data were gathered by two of the researchers: one observer as participant and one participant as observer (Junker, 1960). The researcher who filled the former role was present daily throughout the treatment period to take observational fieldnotes and interview students. The researcher who filled the latter role was responsible for developing all of the instructional scripts and also served as one of the three teachers who rotated through the three treatment groups. As such, she had extensive contact with students in the strategy group—including Phoung and Melinda.

These two researchers met daily to discuss and record observations about students' responses to the instruction. These observations, for example, reported students' eagerness or reluctance to take part in the instruction and any difficulties or successes they had in applying what had been taught.

Data analysis

Methodological triangulation was used to strengthen the validity of the conclusions drawn for this phase of the study (Denzin, 1978; Glaser & Strauss, 1967; Miles & Huberman, 1994). In addition to accessing multiple sources of data, we subjected the data we collected to three levels of analysis. For the first level, the two researchers who had extensive contact with Phoung and Melinda examined the data to determine initial impressions about how these two students responded to the strategy instruction they received and how their responses may have impacted their comprehension performance.

The second level of analysis was conducted by the third researcher, who had no classroom contact with the strategy students and no knowledge of their responses to the instruction. The other two researchers did not participate at this point to control for bias stemming from their extensive prior knowledge about the students. The independent researcher examined and analyzed only the written measures—the story maps, comprehension questions, and written informal interview responses for Phoung and Melinda. She conducted correlational analyses of the ordinally scored data and then drafted written preliminary profiles of each student.

For the final stage of analysis, the three of us met to discuss the preliminary profiles and incorporate the informal data gathered from oral interviews and classroom observations. We then jointly drafted final profiles of each student.

Results

Phoung

Phoung was a Vietnamese child whose parents immigrated to the U.S. when Phoung was a toddler. As a result, she was raised in a home in which English was rarely spoken. Her family was large, and Phoung assumed many responsibilities at home. She appeared to us to be making good progress in learning English as a second language, as her reading comprehension test scores were in the fourth stanine, and her grades were just below average.

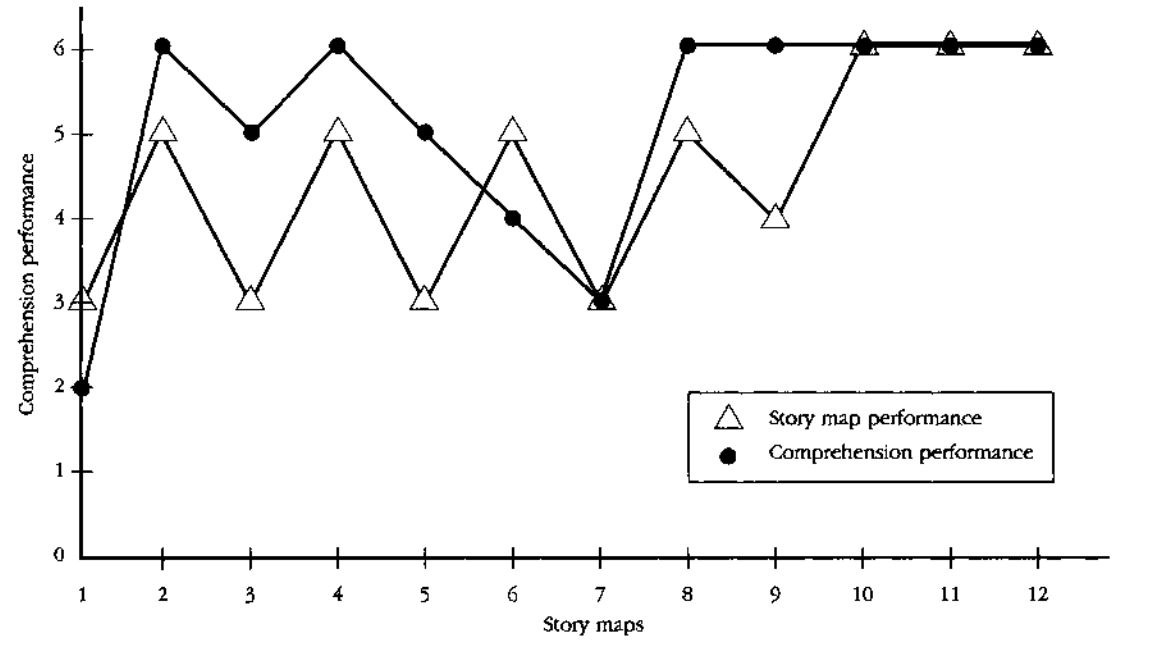
Phoung appeared to begin the study with low self-efficacy for learning. We could see that she struggled to keep up in class, especially with cognitively demanding tasks. One teacher observed that Phoung appeared to be painfully aware that she was far from the top of her class and had grown accustomed to being wrong on assignments. She was soft-spoken, and often teachers would have to ask her to speak up so others could hear. When called on, she would often wait for the teacher to give her the correct answer, and when she did respond on her own, there was a questioning tone in her voice which indicated she was not sure of herself or her answer. At the same time, teachers observed that Phoung was very open to learning the strategy presented to her, eager to try the strategy, and desperate to do well.

Our sense of Phoung's low self-efficacy for learning was corroborated with data from the questionnaires. When we asked her on day 1 of the study, "What is the most important thing to do when you read?" Phoung responded vaguely, "the meaning of the sentence [sic] and I check if I'm reading it right." Moreover, she rated herself as an "ok" reader. During the first week of instruction, Phoung spontaneously wrote "guess" next to a majority of her answers to the comprehension questions we administered each day. When we asked her why, she indicated that she wanted to let the teacher know which items she was not sure about.

Further, Phoung did not see herself as being able to help herself when she did not understand. When we asked her what she did when she had trouble understanding a story, she responded, "ask a friend or I ask a teacher." Her response indicated a need for her to have someone else assist her rather than to rely on herself for help.

Beginning the second week of instruction, however, we noticed a change in Phoung. This change appeared to result from the strategy instruction she was re-

Figure 2 Phoung's daily story map performance and corresponding daily comprehension performance over the course of the treatment period



Note. Maximum comprehension performance score was 6.0.

ceiving. Phoung identified one part of the strategy that was to become more important for her as time went on. On day 5, when we asked her to tell one question that she asked herself, she wrote, "What was the problem that Pepe had?" Thereafter, on 7 of 11 possible opportunities to describe what she did while reading, Phoung responded that she asked herself what the main character's problem was. For example, on day 8, she wrote that she "looked at the pictures, title and problem" before she started to read the day's story, and that she used the strategy "What was the problem [sic]" while reading. On day 10 she wrote that she asked herself the question "What was Seth's problem?" while reading the day's story. On day 17 we asked students what strategy they used the most. Phoung responded, "What was m.c. problem. Because that's the important part."

Thus, Phoung appeared to see the utility value of the strategy she learned. Further evidence of this came when we asked her if she would use the strategy and why. To this question she responded, "Yes, because it helps you read better." Moreover, on the final interview, she wrote that "the strategies just helped me," and that "...I never used them before and it helps me a lot." She also wrote that she would use this strategy in other classes and when reading on her own.

Another part of the strategy instruction that appeared to be effective for Phoung was the group work. Teachers observed that Phoung enjoyed working in groups, and she functioned well there. When asked to move to group work, Phoung eagerly got up from her chair and moved quickly and comfortably into her group. She interacted well with peers and talked openly. She also did her part in group work. When we asked students if they liked leading the groups, Phoung responded, "Yes, because it can help other people in the group and me." When we asked students if working with other students was helpful, Phoung responded, "Yes, because they might not learn it yet and I can teach them."

Phoung's self-efficacy for learning appeared to increase over the course of the study. Teachers observed that her voice and her mannerisms became more confident. She was less reticent to speak, and when she did, she spoke louder and with more confidence. When complimented on how well she was doing, she would smile, clearly pleased with herself in her increasing abilities. She lost the bewildered look she had when she moved

to answering the written comprehension questions. "Guess" disappeared from the margins of her answers to the questions. When asked about this change, Phoung replied that she did not need to write "guess" anymore because "I don't have to." On the questionnaires, she wrote that making a story map and asking herself questions about the main character's problem helped her to "figure things out and keep track of what was happening in the story."

Quantitative data corroborated this qualitative profile of Phoung's successful implementation and use of the strategy. Over the course of the treatment period, Phoung improved in her ability to use the strategy successfully and improved her comprehension of the stories she read. Phoung's average score on her story map performance rose from 4.6 during the first half of the instructional period to a 5.5 (on the 0–6 scale) during the second half. Her comprehension of the stories showed a corresponding improvement: from an average of 4.0 to 5.0.

The relationship between Phoung's ability to construct a story map and her comprehension performance also strengthened over the course of the treatment period. For the first half of the treatment period the correlation between these variables was .48; it rose to .77 for the second half. Thus, as Phoung's story map performance increased over the instructional period, her comprehension, as measured by the problem and resolution comprehension questions, improved as well. (For a comparison of Phoung's 12 data sets on the first and second half of the treatment, see Figure 2.)

Melinda

Like Phoung, Melinda was raised in a large, low-income family, and she had many responsibilities at home. She was one of the better readers in her class, and she was eager to show the teacher how much she knew. Although she appeared to be shy, she was obviously proud of her reputation as a good student in what she perceived to be a school of poor students.

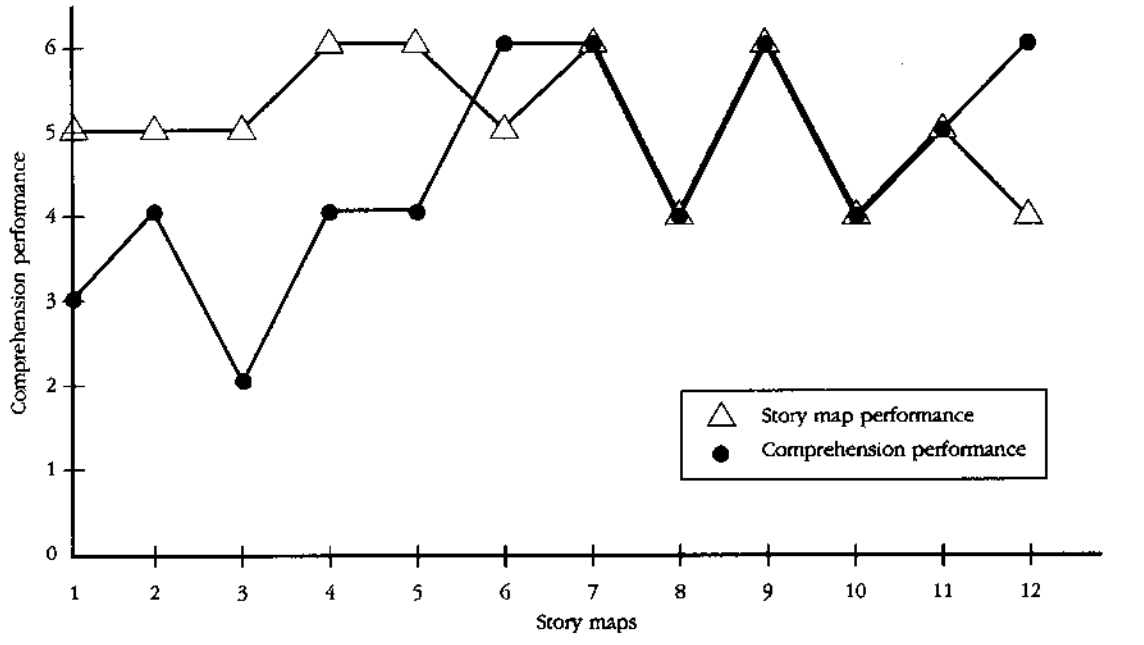
Melinda appeared to begin the study with high self-efficacy for learning. On the first informal written questions, Melinda identified herself a "super" reader, and she wrote that the most important thing to do while reading was to "make sure I understand." She also noted that the most important thing she did when reading a story was to "try to do my best and try to understand what I'm reading." When asked what she did when she had trouble understanding a story, she responded, "keep reading it and reading it and reading it until I understand it." Thus, Melinda clearly had a sense of control over her learning as she saw herself in charge and capable of understanding if she worked hard enough at it.

Usually, high self-efficacy for learning should result in students' willingness to learn new strategies, as they see themselves as capable of learning. And, teacher observations indicated that when Melinda began the instruction, she appeared to be motivated to learn the strategy. One teacher commented, "She seemed to react like many kids for whom teachers, instruction, and school actually works. Her initial response was clearly: I can do well at this because I always do well and I am a good reader." She clearly listened to verbal instructions, nodding and raising her hand to answer questions, and she gave teachers every indication that she was open and receptive to learning the strategy. She also seemed to be impressed by teachers' verbal reassurances that if students paid attention and learned the strategy, then they would become better readers. In short, teacher observations indicated that Melinda went into the instruction with a sense that "I'm good already, so maybe this will make me get even better!"

At the beginning of the instructional treatment, there is evidence that Melinda did attempt to use the strategy. She gave positive responses to questions related to whether or not she used the strategy. For example, on day 5 she gave a positive written response when asked if she used the title and pictures to get ideas about the story. When asked what strategies she used while reading on day 8, she wrote, "I tried to predict what was going to happen after...." When asked on day 12 if she used the title and pictures to get ideas about the story, she responded, "Yes, I couldn't wait to find out what the story was about."

Beginning about the middle of the instructional period, however, teachers observed a gradual decline in Melinda's behavior. This decline seemed to be related to Melinda's sense of the utility value of the strategy. She appeared not to like asking herself questions. Toward the end of the third week of instruction, when asked if "asking yourself questions was something new or if you had been doing it for awhile," Melinda responded, "I've been doing it for a while." When asked to give an example of a question that students asked themselves, Melinda responded, "I didn't ask myself any questions." When asked the next day to give another example, Melinda responded again, "I didn't ask myself." The next day she responded that, "Sometimes it [asking questions] doesn't help because the story is confusing." Thereafter, when asked three additional questions about asking questions, Melinda failed to respond at all. Toward the end of the instruction, we asked students what reading strategies they used the most and least. Melinda responded about the former, "How is the story going to turn out?" She responded that she used the least, "Ask questions. Because I don't want to." These data indicated

Figure 3 Melinda's daily story map performance and corresponding daily comprehension performance over the course of the treatment period



Note. Maximum comprehension performance score was 6.0.

that Melinda did not value at least part of the strategy and became increasingly resistant to using it.

Another area of strategy instruction that appeared to be problematic for Melinda was the group work. In particular, Melinda disliked being a leader within the group. When we asked her why, she responded that "I'm shy and I don't like to ask questions" and "I'm just too shy to stand up in front of the class." When we asked her if being a leader helped her use the strategy better, she responded, "No. Sometimes it just comes and I already know them [the strategies]." In addition, Melinda disliked working with her peers in a group. She would roll her eyes when the teacher announced that it was time to get into groups and move only slowly toward her group. Sometimes the teacher would have to tell her to move. When asked by one teacher why she disliked working in groups, Melinda responded, "I don't want to. I can do it on my own better." Another time she responded that her peers in the group "goofed off."

Toward the end of the treatment period, teachers observed that Melinda appeared to become increasingly withdrawn, did not interact, and evidenced a clear dislike for the strategy instruction she received. She seemed listless and would perform the strategy activities only reluctantly and with prodding from the teacher. When asked to make a story map, Melinda would sigh, roll her eyes, and slump in her chair. When one teacher asked her why she disliked making a story map, she responded, "Making a story map takes too much time and I can figure out the story in my head." She also wrote that she would not use story maps when reading on her own because "it takes too much time and I like reading." On the final questionnaire, she wrote, "I don't ask myself questions because I don't want to."

In sum, our sense from Melinda was that she began the study with high self-efficacy for herself as a reader, and she was motivated to learn the strategy she was taught. As time progressed, however, she did not see high utility value in the strategy, and her interest and performance in strategy use deteriorated. It is important to note that we did not see a deterioration in Melinda's self-efficacy for reading, though. Teacher observations indicated that she continued to value her abilities as a "super" reader but that she rejected the strategy as being useful to her.

Quantitative data indicated that Melinda learned the strategy competently but did not make corresponding comprehension improvement over the course of the treatment period. Melinda's ability to use the strategy, represented by her story map performance, averaged 3.8

for the first half of the treatment period and rose to 5.1 during the second half. Thus, she appeared to learn how to make a story map competently.

Melinda's comprehension performance, however, actually declined over the course of the treatment period—from an average of 5.3 to 4.8. Not surprisingly, then, the relationship between Melinda's ability to use the strategy and her comprehension performance was extremely low for the first half of the treatment period ($r = .09$). Here she was not too effective using the map, but her comprehension was good. However, the relationship between Melinda's ability to use the strategy and her comprehension performance was strengthened substantially during the second half ($r = .65$). Here she was more effective at using the strategy but less effective in her comprehension performance. (For a comparison of Melinda's 12 data sets on the first and second half of the treatment, see Figure 3.)

Finally, comparisons of these students' abilities to use the strategy and comprehend the stories they read were analyzed. Data indicated that Melinda ($M = 5.3$) performed significantly better than Phoung ($M = 4.0$) on comprehension measures during the first half of the treatment period, $t(5) = 2.70$, $p < .05$, but not during the second half. Thus, Phoung actually improved her comprehension performance to a level that was comparable to Melinda during the second half of the treatment period. No other significant differences were found.

Discussion

Phase One of the study demonstrated that strategy instruction was more beneficial than story content or traditional basal instruction for improving at-risk readers' comprehension of texts they read on their own. These data, however, did not allow us to examine how motivational factors can interact with strategy instruction and differentially affect comprehension performance. Through an examination of two students' differing responses to the instruction, we can begin to examine how motivation and instruction may influence individual responses to strategy instruction and how those responses may affect students' comprehension performance.

Phoung was a clear example of a reader for whom strategy instruction worked as it was designed to work. Phoung began with low self-efficacy for herself as a reader. As the treatment period progressed and she learned to apply the strategy competently, her self-efficacy for learning appeared to improve. She appeared to gain control over her learning—evidenced by her decreased use of the word "guess" when asked what she did to comprehend—and her incorporation of asking questions about the main character's problem into her personal repertoire of reading strategies. She clearly saw the utility value in using the reading strategy she learned, as she said she would use it in her other reading. Further, Phoung made substantive progress in her comprehension performance, as evidenced by her improvement in story map performance and corresponding improvement in comprehension performance. Phoung is an example of the type of reader for whom strategy instruction would seem to help the most. For Phoung the instruction appeared to motivate her and help her gain self-efficacy as a learner. Her increased confidence was coupled with increased understanding of the stories she read.

On the other hand, Melinda is an example of an anomalous case where our predictions about the effects of strategy instruction were not confirmed. Because Melinda began the study with high self-efficacy as a reader, we might expect her to have the necessary motivation to benefit from strategy instruction. But, Melinda did not appear to benefit; in fact, her comprehension performance showed evidence of declining over the treatment period.

Why did Melinda dislike the strategy instruction she received, and why did her performance on comprehension questions actually decline? Teacher observations and Melinda's responses to interviews and questionnaires led us to speculate that she may have perceived strategy instruction as an interference with an already automatized, effortless process. She gave some indication of this in her remarks that story maps took too much time and that she would not ask herself questions when she read on her own, "because I don't want to." Perhaps for Melinda the task of comprehending text was a relatively simple and straightforward one that did not require much effort. As Pearson and Dole (1987) cautioned, "We have to consider the possibility that all the attention we are asking students to pay to their use of...strategies and to the monitoring of these strategies may turn relatively simple and intuitively obvious tasks into introspective nightmares" (p. 162). It could be that the strategy instruction Melinda received forced her into making an easy task difficult and cumbersome. This may have led to her increasingly negative response to the instruction—which may, in turn, have hindered her responses to the comprehension questions.

Certainly, a related problem for Melinda was the group work. We have evidence that she disliked working in her group, in part because she saw herself as shy and also because she perceived her group as "goof-offs." Her feelings about the group are likely to be factors that influenced her overall dislike of the strategy instruction. We wonder how she would have responded had she enjoyed her group work in general and the particular group in which she worked. Melinda's response to the

group work highlights the importance of social factors in the learning process and the interaction between social, motivational, and cognitive processes.

General discussion

Limitations

There is always a tension between internal and external validity, and this study highlights that tension. In our effort to increase internal validity, we isolated our instruction from the total reading program within the school we worked. This afforded us an opportunity to evaluate strategy instruction while meeting strict criteria for methodological rigor suggested by Lysynchuk, Pressley, d'Ailly, Smith, and Cake (1989). But, in doing so, we also created a situation that, to some extent, may not completely reflect typical classroom life.

The classroom situation we created leads to several limitations of this study. First, the teachers in this study were not the students' regular teachers. We do not know if and to what extent students would have responded differently to instruction administered by their regular teachers and as part of their ongoing reading program. Second, because we were not an ongoing part of the classroom, we did not have the opportunity to observe whether students incorporated the strategies we taught them into their daily reading routine over the course of the school year.

Third, although the strategy instruction we taught included collaborative group work in which students gradually gained ownership in use of the strategies, it was still teacher centered. Teachers taught a specific strategy and did not encourage students to explore their own set of strategies. We do not know whether our procedure might have taken students away from their tendencies to develop their own learning strategies. As Tierney, Readence, and Dishner (1990) pointed out, perhaps students could be taught to "define and use a great many more strategies for themselves...other than those tied to a teacher's plans" (p. 79).

A second set of limitations surround our study of Phoung and Melinda. We did not choose these students because they were representative of the class, but because they were prototypical of the two patterns of responses we observed. As a result, this study does not provide us with the full range of student responses to strategy instruction. Certainly, other students responded differently from Phoung and Melinda, and we need to know what the full range of responses looks like. We also need to know how particular students responded to the story content and basal instruction. How individual students respond to particular kinds of instruction is an area of future research that we think is of critical interest and importance to teachers of comprehension, especially as our student population becomes more diverse.

Conclusions

We think this study makes two important contributions to our pedagogical and theoretical understanding of strategy instruction and use. First, the study demonstrates the value of strategy instruction in comparison to other effective instruction and the specific value of strategy instruction for far transfer. Previous research on strategy instruction has not compared the teaching of strategies to other effective instruction. In this study we demonstrated the value of strategy instruction when the goal was to understand particular texts and especially when the goal was to understand independently read texts.

The second, and perhaps most important, contribution of this study was to raise questions about how motivational factors affect strategy use. In this study we chronicled two students. One student, Phoung, responded to strategy instruction in a way that was consistent with other research on strategies and their benefits to readers (Pressley et al., 1989). Another student, Melinda, did not respond to strategy instruction in a way consistent with current theoretical frameworks about skill and will. Based on motivational theories for learning, we might have predicted that Melinda would respond well to the instruction she received. She began with a high self-efficacy for learning. She appeared eager to learn the strategy. But, instead of finding utility value in the strategy, Melinda appeared to find it unhelpful.

There has been some research suggesting that some readers may not need, or may be hindered by, some kinds of strategy instruction (Alvermann & Hynd, 1989; Hansen & Pearson, 1983; Wade, Trathen, & Schraw, 1990). These studies indicated that higher achieving readers comprehended more when they used their own preferred strategies than when other strategies were imposed on them through instruction. Perhaps, as Wade, Trathen, and Schraw (1990) argued, students benefit more from becoming metacognitive about the strategies they already use, rather than from learning different strategies.

We think this study raises important questions about strategy instruction and use for students like Melinda. Does the use of some strategies interfere with students' own preferred strategies? If we ask students to use strategies they might not like, might we be undermining their self-efficacy for learning? If so, how and why? Can the amount of expenditure of effort necessary to use some strategies be so great as to unmotivate otherwise motivated students?

The study also raises critical questions for teachers. Is it possible for teachers to organize their classrooms in such a way as to present strategy instruction that clearly benefits some students, without turning off other students? Can teachers help students remain open to learning new strategies that may not ultimately prove useful to them? Can teachers create a classroom climate where students can try out different strategies, understanding that strategies should be chosen and used flexibly? And last, what is the role of strategy instruction and use in the total literacy program? That is, how should strategy instruction be embedded in a balanced literacy program that also includes other elements that we know to be important for students (e.g., reading for pleasure, writing in response to reading, discussing stories and novels, and so forth)? And, how do teachers create a balanced program in which their students value and use strategies but also possess the passion to read and the critical abilities to evaluate what they read?

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APPENDIX A

Example of a story content instructional script

"The Banks of the Sacramento," pp. 238–247

(*Note*: Be sure to write underlined vocabulary words on the chalkboard and remind students to copy them down in their notebooks along with words or drawings that can serve as reminders of what the words mean. Also remind students that understanding these words will make it easier and more enjoyable to read the story.)

This story takes place about 100 years ago on the banks of the Sacramento River in California. It is about a teenage boy who is facing his first chance to run a cable car system that goes over this river. Take 1 minute and think about what YOU know about cable cars—especially the kind that go over rivers. (Pause for approximately 1 minute.)

The late 1800s in California was the time and place where some people discovered gold and a lot of people went there to dig in mines. One of the places they found gold was in the banks of the Sacramento River. You know what a *bank* is—a place where you go to cash checks or to save your money. Well, the bank in this story means on the shore or on the edge of the Sacramento River in California. You need to know that the banks of this river are very steep—kind of like the sides of the steep canyons we have around our city. (Draw picture on chalkboard of steep banks with river running between.)

The main character in the story is a boy named Jerry. Jerry's dad (who is called Old Jerry) *found employment* at a gold mine called the Yellow Dream Gold Mine. "Found employment" just means that he got a job there. The Yellow Dream Mine was located on the banks of the Sacramento River (refer to drawing), and Old Jerry's job was to *rig the great ore-cables* that went from one side of the river to the other.

I'm going to draw a picture of the ore-cables and use some important vocabulary words to show you how it works. It's kind of complicated, so pay close attention and jot down some notes. You'll need to understand how the cables work to really understand the story.

This story took place a long time ago, so there wasn't a bridge crossing the river. The goldminers had to figure out a way to get the *ore* (underline this word on the board) which is big chunks of rock with gold in it across the river to the road. So, they fixed up some *cables* (underline this word on the board), which are really thick, strong metal ropes (start adding cable diagram to drawing of river on blackboard) and wound them around a big, round metal drum on each side of the river. Then they hooked some wheels on the cable and hung two *ore-cars* on the wheels—one on each side of the river. These cars weren't cars like we drive; they were just big boxes made of wood. People would load up the car with ore or supplies. That would make the car very heavy and its weight would send the car across the river. When that happened, the cable would turn on the drum and that would pull the empty car over so people could fill that car up and send it across. They'd do this over and over. Now you know that "rigging the great ore cables" (point back to phrase on chalkboard) means that Jerry's dad was in charge of running these cars back and forth across the banks of the Sacramento River.

Dealing with ore-cars was dangerous work. Notice that there is *chasm* or a huge, empty space between the ore-car and the river below (refer to diagram). The ore-car is hundreds of feet above the river, so it would be very dangerous if an ore-car got stuck out over the middle of the river and someone had to go fix it.

Well, that's what happens in this story. There are two different cable cars a mile apart on the river. One is called the Yellow Dream and the other is called the Yellow Dragon. The Yellow Dragon is the cable that peo-

(continued)

APPENDIX A (cont'd.)

Example of a story content instructional script

ple use when they want to get back and forth across the river, and it is run by a man named Hall. The Yellow Dream cable is the one that Jerry's dad runs and it is used for sending ore across the river—not for people.

One day, a man and a woman need to get to the other side of the river to help the woman's father who had been hurt very seriously. Hall, the man who runs the Yellow Dragon cable, is gone, so they have no way to get to the other side except to cross on Jerry's cable. His dad was not there, and Jerry had never run the cable by himself, so he was quite *reluctant* when the man and woman asked him to help them get across. *Reluctant* means that he didn't want to do it.

To make things worse, there is a terrible rain storm going on, with strong winds called *squalls.* These strong winds, or squalls, are so strong that Jerry can't see across the river until there is a *lull* in the storm—which is when the storm stops for a minute. Even so, the man talks Jerry into operating the cables so the man and woman can get to the other side.

Now, as Jerry tries to get the Yellow Dream ore-car with the man and the woman in it across the Sacramento River, the ore-car gets stuck out over the middle of the river, 200 feet in the air. It's too high for the man and the woman to jump. So, Jerry has to find out why the ore-car is stuck and fix it quickly. That would be a tough, scary situation to be in, wouldn't it? Let's pass out the stories now and read to find out what Jerry does.

After students have finished reading and answering the comprehension questions, say:

OK. You were reading to find out what Jerry did to fix the ore-car. Raise your hand if you can describe for me what he did. What did Jerry do after it was all over and he was safe on the ground back at his station? (He burst into tears because he was so relieved that it was all over and everyone was safe.)

APPENDIX B

Example of a student-constructed story map

"The Banks of the Sacramento," pp. 238–247

Who?

Jerry	river
Mama	Sacrumento
boy	2 kids
man	

2 people—Mr. Mrs Spillane

Problem? A boy helping people
A boy going to help 2 people
A cliff might fall
He count save the couple cause he
was afraid of hieghts.
The cable stopped and Jerry couldn't
get the cable going, He tryed to
tug it but it still wount not go.

How did the problem turn out? He jumped
up and tryed to make the cable going.
And he did.

APPENDIX C
Example of strategy instructional script

"The Banks of the Sacramento," pp. 238–247

I'm really impressed with how quickly you people have caught on to using the strategy of getting clues from the title and the pictures before you start reading. So, if your teacher tells you to take out one of your books and turn to a certain page, what can you do instead of just sitting there waiting for the teacher to start? (Look at title and go quickly through the pictures.) Why is that a good strategy to use? (It gives you ideas about what the story/chapter is about.)

What other strategy have we been practicing—we use it *while* we're reading? (pick out the main character + problem.) Anytime you read a story, you have to know who the main character is and what problem happens to him or her.

Now, I want your complete and total attention because I'm going to tell you why you should work hard at learning these reading strategies and why you should use them when you read on your own: *You'll understand the story better.* When you understand the story better:

1. It makes the story more enjoyable, and
2. You do better on your assignments and get better grades.

OK, let's get started using what we've learned so far with today's story. While_____ and _____ are passing it out, I'd like each of you to get a new story map ready in your notebooks.

What strategy are you going to use even before you start reading? (Title + pictures = ideas.) OK! We've practiced this together a few times, today you're going to try it on your own. Go ahead and skim the title and pictures and when you're finished getting some ideas about what the story might be about, start reading. As you get into the story, keep your ideas in mind.

Then, we're going to work together to look for the main character and the problem that he or she has. After we've been reading for a few minutes, a leader is going to stop you and ask you about the main character and the problem. (As students are reading, select two students who have not had a chance thus far to lead the class in using a reading strategy. Choose one to ask the class questions and the other to write on the overhead.)

(When most students have read to the bottom of page 242, get their attention.) Everybody put your hand inside your book on the page you're on and close your book. _____ needs your attention for a minute. _____, please tell the class what strategy you're going to ask them about. (finding the main character and the problem)

(Mentor as necessary with leader to have him/her ask:)

Who is the main character? (Write and circle *Jerry.*)

How do you know? (He is the character that gets talked about the most.)

What problem does Jerry have so far? (Some people want him to run the cable and he's never done it without his dad.)

Now, as we read along, you're going to learn more about the problem. To keep track of the new stuff that we learn, we need to ask ourselves:

What else do we know about the problem? (put "what else?" on "Strategy List" on chalkboard.)

This is another important reading strategy that you can use. We're going start practicing it today. I'm going to stop you in a few minutes and show you how I use this strategy when I'm reading.

(When most students have read to the bottom of page 243, get their attention and have them close their books.)

I'm just going to interrupt you for a minute. Watch how I use this reading strategy of finding out more about the main character's problem. Whenever I read, I'm always looking for new information about the problem because I know that's a really important part of any story. So, every once in awhile, I stop and ask myself if I've learned anything new. Let's all look at the bottom of page 243. OK, when I get here, I ask myself: What else do I know about Jerry's problem? Then I think about what I read and I realize: Well, it says here (point to section of text on overhead transparency) that "...the cable had stopped. Jerry threw off the brake, but it did not move...Something had gone wrong." When I read that, I think, "Hey, there's more to the problem in this story than just being scared to run the cable by himself. Now the cable looks like it's broken, leaving two people stranded out over the river. So, I just add "cable broken—people stuck" under "problem" on my story map.

Do you see how I'm using this strategy of keeping track of new information about Jerry and his problem to help myself understand the story? How many of you have ever tried something like this on your own? Good! This is the kind of strategy good readers use whenever they read. Now, what I'd like you to do is finish reading the story. Every once in awhile, ask yourself: What else have I learned about Jerry and this problem? Sometimes you get new information about a problem, sometimes you don't. We'll talk more about that tomorrow.

(After students have finished reading and answering the comprehension questions, ask:)

What strategies can you use *while* you're reading to help you understanding the story? (pick out main character and problem/ask self what else?) How can asking yourself these questions while you're reading help you?

APPENDIX D

Example of basal instruction script

"The Banks of the Sacramento," pp. 238–247

Introducing vocabulary

On the chalkboard, write:

When the subway train stopped suddenly, Gary *staggered* and almost fell.

Have the sentence read and ask volunteers to identify the context clues that hint at the meaning of the underlined word. Have the word defined. Write the remaining basic words on the chalkboard. Have them read and ask volunteers to give synonyms for them; provide help as necessary.

indispensable: essential
gulf: wide gap
pelting: beating heavily
regulated: adjusted to some standard
secured: tied down
spanned: extended over or across
staggered: stumbled

Explain to pupils that these words have more than one meaning:

gulf: area of sea or ocean partly enclosed by land
pelt: (verb) throw
span: (noun) distance between two places; part between two supports of a bridge; period of time
secure: safe

To provide practice with the basic words, ask pupils to follow these directions. Provide help as necessary.

Name two things that might cause you to stagger. (bumping into someone, stubbing your toe)

Give two examples of things that might be secured. (windows, lid on a trunk)

Name two workers that might be indispensable for a community. (doctor, firefighter)

Give two examples of things that might be regulated. (radio volume, traffic speed)

Give two examples of things that might be spanned by a bridge. (river, canyon)

Name two things that might be described by the word pelting. (rain, hail)

Name two places that could be called a gulf. (canyon, mountain pass)

Preparing for comprehension

Ask pupils if they ever have been given an important job (babysitting for a younger brother or sister, going to the store to buy food, taking care of the garden, taking care of a pet). Elicit from pupils how they treat such a responsibility (take the job seriously, do careful work, feel proud when the job is completed).

Read aloud the first five paragraphs in "The Banks of the Sacramento." Discuss briefly the cable car system. Be certain that pupils understand that the cars are suspended from cables made of twisted steel wires, and that the weight of a car propels it across the river. Pupils should also be aware that the banks of the river are steep and 200 feet high.

(After students have finished reading and answering comprehension questions):

Ask pupils what important responsibility Jerry was given (overseeing the Yellow Dream cable). Discuss the decision Jerry had to make when the Spillanes asked to cross the river. Point out that Jerry's reaction to the cable car's stopping showed how he handled responsibility. Ask pupils to describe what Jerry did. (He tried to call to the Spillanes, thought through the situation, checked the drum for problems, and then tried to haul again.)

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