Comparison of the Effectiveness and Efficiency of Text Previewing and Preteaching Keywords as Small-Group Reading Comprehension Strategies with Middle-School Students

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Reading instruction for middle- and high-school students is focused on vocabulary and comprehension, yet research suggests that comprehension skills among these students are alarmingly low. Small-group reading interventions are becoming more prevalent in schools, but there are few studies regarding small-group reading comprehension interventions. The current study compared the effectiveness and efficiency of two evidence-based small-group interventions for struggling eighth-grade readers. All participants received a text previewing comprehension strategy and a keyword preteaching strategy in counterbalanced order. Results suggested similar effectiveness between the two strategies but efficiency greatly favored the keyword strategy. Directions for future research are included.

Keywords struggling readers, vocabulary

Reading comprehension skills among middle- and high-school students are at a critical low (RAND, 2002), which is especially concerning because reading instruction among middle- and high-school students is primarily focused on vocabulary and comprehension (Kamil et al., 2008; Snow, Burns, & Griffin, 1998). The provision of interventions for struggling readers is an important aspect of effective reading comprehension instruction among middle- and high-school students (Kamil et al., 2008), which usually involves supportive instruction in vocabulary and explicit reading comprehension strategies (Torgesen, Houston, & Rissman, 2007). Previous research found that teaching explicit strategies improved comprehension skills (Kavale & Forness, 2000; Rosenshine, Meister, & Chapman, 1996), but the effect size decreased from 1.11 among middle-school students to .59 among students in high school (Scammacca et al., 2007). Thus, intervening in middle school seems especially important, despite the relative success of interventions with older students (Torgesen et al., 2007).

Although comprehension strategy use is important among struggling readers, it is only one aspect of literacy instruction among adolescent readers (Torgesen et al., 2007) and reading comprehension is more affected by background knowledge and vocabulary than strategy use (Cromley & Azevedo, 2007). Moreover, poor comprehenders often lack sufficient background knowledge to understand what they read (Gersten, Fuchs, Williams, & Baker, 2001).
Students comprehend what they read when they develop mental representations of the text and use them to interpret the text (Pressley & Afflerbach, 1995). Thus, reading comprehension interventions often occur before the student reads the text in order to build mental representations that can be used to interpret the text (Cates, Thomason, Havey, & McCormick, 2006; Denner, Rickards, & Albanese, 2003). Two common approaches to develop mental representations before reading are previewing the text (Graves, Cooke, & LaBerge, 1983) and preteaching keywords (Burns, Dean, & Foley, 2004). Previewing is often accomplished by asking the student questions about the topic, providing a synopsis of the story, repeating the names of the characters, and defining three or four difficult words before the student reads the material. Previous research found that middle-school students who were identified as struggling readers and who participated in a preview condition answered 67% of the comprehension questions correctly, and those who did not answered 58% correctly, which resulted in a Cohen’s (1988) $d$ effect size of .52 (Graves et al., 1983). Moreover, students answered 78% of the factual questions correctly, as compared to 57% of factual questions when the text was not previewed ($d = .47$).

Previewing is one method to develop mental representations, but background knowledge could also be enhanced by preteaching words that are central to the meaning of the text, which seems especially important given the close relationship between vocabulary and comprehension (National Reading Panel, 2000). Preteaching has consistently been shown to be an effective reading intervention among struggling learners (Burns, 2007; Rose, 1984; Rousseau, & Yung Tam, 1991). Burns et al. (2004) pretaught keywords, defined as words that were central to the meaning of the text, to elementary-aged students identified as learning disabled in reading. Students answered 34% of the comprehension questions correctly without preteaching, but answered 58% correctly after preteaching ($d = 1.76$). However, preteaching keywords was less frequently studied among middle- and high-school students.

Previewing or preteaching strategies have consistently led to increased comprehension (Burns et al., 2004; Cates et al., 2006; Graves et al., 1983) perhaps because they activated background knowledge, which then enhanced reading comprehension (Torgesen et al., 2007). However, research has yet to compare these two approaches to enhancing comprehension. Moreover, school-based academic intervention efforts rely heavily on small-group interventions for struggling learners (Burns et al., 2006; Vaughn, Wanzek, Linan-Thompson, & Murray, 2007), but the research literature is generally missing small-group interventions for reading comprehension.

Small-group interventions are also potentially important in K–12 schools because they can more efficiently use resources. The effectiveness of interventions within intervention research is often evaluated by computing an effect size that compares two groups and comparing the magnitude of the effect to the criteria of .80 or larger being a strong effect, .50 being a moderate effect, and .20 being a small effect (Cohen, 1988). However, some interventions that may be the most effective (i.e., resulted in the most learning as demonstrated with the largest effect size) may not be the most efficient (Cates et al., 2003; Nist & Joseph, 2008). Moreover, instructional efficiency of small-group interventions is important because delivering interventions to a small group allows for resources to be reserved for more intensive interventions when needed (Burns & Gibbons, 2008). Efficiency can be defined by dividing the number of items learned by the time (i.e., number of minutes) needed to complete the intervention (Skinner, Belfiore, & Watson, 1995), and has frequently been shown to be useful data when evaluating potential interventions (Skinner, 2008). Previous instructional efficiency research did not examine reading comprehension interventions, which would be best defined by dividing the number of items correct
Given the importance of reading comprehension and that previous research has identified several previewing/preteaching approaches to enhance reading comprehension, the goal of the current study was to compare the effectiveness and efficiency of reading comprehension interventions among eighth-grade students with comprehension difficulties. We delivered the interventions in a small group because there was a relative dearth of research to support small group reading comprehension interventions, despite increasing prevalence, and even less that examined the efficiency of interventions delivered to a small group. The following research questions guided the study: (a) what effect does text previewing have on the reading comprehension of eighth-grade students with comprehension difficulties, (b) what effect does preteaching keywords have on the reading comprehension of eighth-grade students with comprehension difficulties, and (c) how efficient are the small-group reading comprehension interventions among eighth-grade students with comprehension difficulties? Because there is relatively little research regarding group interventions for reading comprehension, this study was mostly exploratory in nature and was primarily designed to inform future studies.

Method

Participants and Settings
The participants for the study were 19 students in the eighth grade attending one of two middle schools in Minnesota. Fourteen of the students were female and five were male. The demographic breakdown for the students was 10.5% (n = 2) African American, 57.9% (n = 11) Caucasian, 10.5% (n = 2) Hispanic, and 21.1% (n = 4) Hmong. All students were identified as struggling readers by the school, and the mean reading standard score on the Measures of Academic Progress (Northwest Evaluation Association, 2004) for the group was one standard deviation below the national mean.

The schools that the students attended served sixth grade through eighth grade. One school had a total population of 881 students, 28% of which were from a minority background and 27.1% of which were eligible for the federal free or reduced price lunch program. The other school served 787 students, 41% of which were from minority backgrounds and 46.6% were eligible for free or reduced price lunch.

The interventions occurred either in a small conference room or at a table in the school’s media center. The students were seated at a round table with all of them facing the researcher.

Materials
Reading Passages. The three reading passages used in the study were taken from the Qualitative Reading Inventory-4 (QRI-4; Leslie & Caldwell, 2005). The QRI-4 was selected to provide the study stimuli because it provided passages long enough to assess reading comprehension and 10 comprehension questions for each. The passage and question format of the QRI-4 also matched most standardized assessments of comprehension, which could be potentially important given that previous meta-analytic research identified a need for additional studies that used assessments that mirrored state accountability tests (Scammacca et al., 2008). Moreover, the QRI-4 was rated as one of the most reliable
informal reading inventories with internal consistency estimates of .99 and alternate form reliability coefficients that exceeded .80 (Spector, 2005).

Students read the story titled “Immigration” for the baseline condition and two other stories, titled “Malcolm X,” or “Biddy Mason,” for the intervention conditions. Both of the intervention condition passages related stories of important African-American historical figures. All three passages were purportedly written at a level appropriate for upper middle school. However, the baseline passage (“Immigration”) contained 410 words and was considerably shorter than the intervention passages, which contained 786 words (“Malcolm X”) and 750 words (“Biddy Mason”) per text. The passages were counterbalanced with the intervention conditions. Thus, approximately half of the students used “Malcolm X” as the Preview text, but for approximately half of the students “Malcolm X” was used for the Keyword condition.

Passages from the QRI-4 also included 10 open-ended comprehension questions that assessed comprehension of both explicit (5 questions) and implicit (5 questions) material from the text. Students were given these open-ended comprehension questions in writing, and they were instructed to write their responses next to each individual question. The responses were written rather than oral in order to administer the assessment simultaneously to the whole group. It was important to include both factual and implicit comprehension questions because previous research found differential effects for the two question formats (Graves et al., 1983). Moreover, reading inventories that assess comprehension with implicit, as well as explicit, questioning may be a more effective measure of deeper-level reading comprehension than inventories that assess comprehension for explicit material alone (Fuchs, Fuchs, & Maxwell, 1988).

**Conditions**

**Previewing.** After assessing students’ baseline performance, students in the Previewing intervention condition were given a short, oral preview of the text that they would be reading. Previews were modeled after those used by Graves and colleagues (1983). Before administering the text previews to students, two independent graduate student researchers edited and revised the previews for grammar, clarity, and grade-level appropriateness.

The intervention scripts contained two major components: short questions and statements designed to engage students with the text, and a synopsis of main story elements. As described in Graves and colleagues (1983), the short questions and statements were related to themes or ideas presented in the text. Both texts used in the present study (“Malcolm X” and “Biddy Mason”) were similar in that they both dealt with African-American historical figures overcoming challenges and obstacles in order to reach their goals. Thus, the first half of each story preview was identical for both texts.

The second half of each story preview differed for each individual text. The researcher described all of the major story elements: setting, characters, point of view (narration), and description of the plot. Next, the names and descriptions of main characters were typed on white, unlined 3 × 5 index cards using Arial font and a landscape orientation, and were presented to the students during the previewing intervention.

**Keywords.** In the pre-teaching keywords intervention, a list of keywords was compiled for each text. Keywords were defined as “central to understanding the meaning of the reading passage” (Rousseau & Yung Tam, 1991, p. 201), which was also the definition used by Burns et al. (2004). Three independent graduate student researchers compiled a list of keywords for each text. As in Burns et al., only those words common to all three lists were
considered “key” for each text passage. Researchers identified four keywords for “Biddy Mason,” and three keywords for “Malcolm X.” Keywords were typed on white, unlined, 3 × 5 index cards using 60-point Arial font and black ink. Researchers also compiled a list of words that would serve as easy or “known” words. Easy words were randomly selected from a fifth-grade reading list (Fry & Kress, 2006) and were also written on white, unlined 3 × 5 index cards using black ink and a landscape orientation.

Students were presented flashcards in the Keyword condition using the Incremental Rehearsal (IR; Tucker, 1989) method, which was also used by Burns et al. (2004). The unknown keywords were taught to the students by presenting the first word on the card, orally stating the word, asking the students to simultaneously restate the word, and asking two students to provide sentences that contained the word. After this sequence, the new keyword was rehearsed at a ratio of one (10%) keyword to nine (90%) known words taken from the fifth-grade list using the following pattern: first keyword, first known; first keyword, first known, second known; first keyword, first known, second known, third known; first keyword, first known, second known, third known, fourth known; first keyword, first known, second known, third known, fourth known, fifth known; first keyword, first known, second known, third known, fourth known, fifth known, sixth known; first keyword, first known, second known, third known, fourth known, fifth known, sixth known, seventh known; first keyword, first known, second known, third known, fourth known, fifth known, sixth known, seventh known, eighth known; first keyword, first known, second known, third known, fourth known, fifth known, sixth known, seventh known, eighth known, ninth known. Students were asked to orally read the keyword each time it was presented, and were not asked to state definitions or sentences after the initial presentation. After completing the rehearsal sequence, the keyword was treated as the first known word, the previous ninth known word was removed from the deck, and the second keyword was added to the front of the deck. This sequence continued until all keywords were rehearsed.

Students were presented with four keywords from “Biddy Mason,” and three keywords from “Malcolm X.” Previous research found that IR led to increased retention and generalization of newly learned material (Burns, 2002, 2007; Nist & Joseph, 2008), and increased reading comprehension (Burns et al., 2004).

**Dependent Variables**

There were two dependent variables for the study. The first was the number of comprehension questions answered from the passages for each condition. The second was an estimate of efficiency and was computed by timing the intervention sessions. The researcher started a stopwatch immediately as the intervention began and stopped it right before asking the students to read the intervention passage and answer the accompanying questions. Thus, the time was the number of minutes needed to complete the instructional portion of the intervention. The number of comprehension questions answered correctly for each condition was then divided by the number of instructional minutes to equal a number of comprehension questions answered correctly per instructional minute score, which was used to operationally define efficiency.

**Procedure**

We contacted the parents of eighth-grade students who scored below the 25th percentile on the group-administered reading test used by the district for accountability reporting. Students whose parents signed and returned the consent form were included in the present
study. Students were assigned into groups of four (one group) or five (three groups) based on common reading or language arts course. Each group of students was taken from the same reading or language arts course (total of four courses) and accompanied the researcher to the conference room or media center. Baseline reading performance was first assessed by presenting the students with the baseline text, which they were asked to read silently and answer the 10 comprehension questions in writing.

After collecting baseline data, students participated in one of the two intervention conditions in a counterbalanced order. Two of the groups ($n = 9, 47.4\%$) received the Previewing condition first and the Keywords condition was implemented first for two of the groups ($n = 10, 52.6\%$). After completing the intervention, and recording the length of time necessary to complete the intervention, the students were instructed to read the assigned text passage (“Malcolm X” or “Biddy Mason”) and to write their responses to the 10 comprehension questions. The researcher returned the same day of the week the following week to conduct the second intervention session. Thus, the two data collection sessions were separated by exactly 1 week.

**Design**

Reading intervention (Preview, Keywords, and Control) was a between-subjects independent variable. All participants were given the “Immigration” passage first and asked to read the passage silently and answer the comprehension questions. Thus comprehension performance on this preliminary reading task acted as the control condition. Text passages for the intervention conditions were counterbalanced across conditions (Preview and Keyword). The number of written comprehension questions answered correctly in the control condition was compared to those correctly answered in the experimental conditions.

The first research question was addressed with a within-subjects analysis of variance (ANOVA) using an alpha level of .05 to determine significance. Next, three planned comparisons were conducted with dependent measures $t$-tests and a conservative alpha level of .01 was used for these three analyses to reduce the likelihood of error. The second question was addressed with a dependent-measure $t$-test using an alpha level of .05 to determine significance. Estimates of effect size were computed with Cohen’s (1988) $d$ and interpreted as .80 being large, .50 medium, and .20 small.

**Interobserver Agreement and Fidelity of Implementation**

The interventions were implemented by a male school psychology doctoral student and a female undergraduate psychology major in her final semester of courses. Both received 1 hour of training in implementing the two interventions. Moreover, the school psychology student participated in a semester-long course on academic interventions in which IR and reading interventions were extensively covered.

A total of 50% of the intervention sessions were observed by the first author with an implementation checklist. The observer rated each item as present or not, then divided the total number of items observed by the total number of items, which resulted in 97% correct implementation.

Interobserver agreement was computed for 50% of the sessions by having a second rater, a school psychology graduate student, also score the 10 comprehension questions for each passage. The total number of items that were consistently rated as correct or incorrect
was divided by the total number of items. The range of interobserver agreement was 80% to 100%, with an average agreement of 98.5%.

Results

The distribution of the data was analyzed before addressing the research questions. Estimates of kurtosis for the number of comprehension questions answered correctly were –1.14, for Baseline, –.87 for Preview, and –1.29 for Keywords. The kurtosis estimates for number of questions answered correctly per instructional minute were –.79 for Preview and .92 for Keyword. The standard error for the kurtosis estimates was 1.01. Estimates of skewness for number of comprehension questions answered correctly were –.08 for Baseline, .04 for Preview, and .08 for Keywords. Skewness estimates for the number of comprehension questions answered correctly per instructional minute were –.09 for Preview and 1.21 for Keyword. The standard error for the skew estimates was .52. The estimates of kurtosis and skew were all less than 2.0, generally fell within two standard errors, and suggested that the data were acceptably normally distributed. Thus, the research questions were addressed with parametric analyses.

The first research question inquired about the effectiveness of the two intervention approaches. As shown in Table 1, the keyword condition led to the most comprehension questions being answered correctly. A within-subjects ANOVA resulted in a significant effect, $F(2, 36) = 8.52, p < .05$. The preview condition resulted in significantly more comprehension questions being answered correctly than the baseline condition, $t (18) = 3.07, p < .01$, with a moderate to large effect ($d = .74$). The keyword condition also resulted in significantly more comprehension questions being answered correctly than the baseline condition, $t (18) = 4.47, p < .01$, with a large effect ($d = 1.09$). Thus, both interventions resulted in a significant effect. However, the difference between the two conditions resulted in a non-significant effect, $t (18) = 1.00, p = .33$ and a small effect size ($d = .22$).

To further examine the first research question, data were converted to a percentage of questions answered correctly and compared to a typical middle-school grading scale of 60% (grade = D–) or higher as a passing score. None of the students scored above 60% for the baseline condition, but 37% ($n = 7$) obtained a passing score for the previewing condition, and 53% ($n = 10$) for the keyword condition. This resulted in a significant Friedman test.

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<td>Descriptive data for baseline and the two intervention conditions</td>
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<th>Baseline</th>
<th>Previewing</th>
<th>Keyword</th>
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<tr>
<td>Mean</td>
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<td>SD</td>
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<td>instructional time</td>
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<td>NA</td>
<td>NA</td>
<td>.32</td>
<td>.83</td>
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<td>NA</td>
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<td>.17</td>
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*$p < .05.$
Test $X^2 (df = 2, n = 19) = 14.36, p < .01$, with a mean rank of 1.55 for baseline, 2.11 for previewing, and 2.34 for keywords.

The second research question was addressed by computing correct answers per minute of instructional time. The previewing condition required an average of 14.38 ($SD = 2.05$) minutes to complete, and the keyword condition required an average of 6.70 ($SD = 2.84$) minutes. Thus, as also shown in Table 1, the previewing condition resulted in .32 correct answers per instructional minute and .83 for the keyword method. The difference between the two conditions was significant $t (18) = 5.02, p < .05$. The size of the effect for this comparison was large ($d = 1.62$) and favored preteaching keywords.

**Discussion**

The current study found that previewing strategies and preteaching keywords had a significant effect on the comprehension with which these students read the experimental passages. Although the effect size for the latter was stronger than for the former, the difference between the two conditions was not significant. Previous intervention researchers may have concluded that the two approaches would be equally appropriate as small group interventions. However, intervention efficiency can adequately differentiate between two equally effective interventions (Skinner, 2008), and preteaching keywords was more efficient than previewing. Moreover, the practical implications of examining the number of students who obtained a passing grade (60% or D−) suggested that approximately half of these students increased to a passing score when pretaught keywords, whereas none of them obtained a passing score in baseline.

These data are consistent with previous research that found enhanced reading outcomes from preteaching words with IR (Burns, 2007; Burns et al., 2004) and for previewing reading material (Graves et al., 1983; Denner et al., 2003). Moreover, the effect sizes were generally similar to those found by Graves et al. (1983) ($d = .52$ in the previous study and $d = .74$ in the current study), and Burns et al. (2004) ($d = 1.76$ in the previous study and $d = 1.09$ in the current study). A meta-analysis of reading comprehension interventions among struggling readers found a mean unadjusted effect size of .74 (Swanson, 1999) and 1.35 among adolescent readers (Scammacca et al., 2007). Thus, these data suggest interventions that are at least as effective as many approaches to comprehension intervention.

In previous studies, the previewing strategy resulted in an increase from 58% of the questions answered correctly to 67% (Graves et al., 1983), and preteaching keywords increased the percentage of comprehension questions answered correctly from 34% to 58% (Burns et al., 2004). Thus, the students in the current study answered a somewhat lower percentage of comprehension questions correctly after the intervention, 44% for previewing and 49% for preteaching keywords, but the percentage correctly answered before the intervention was also lower in the current study (30%). Thus, the participants in this study achieved similar gains as observed in previous research.

The current data were also inconsistent with previous research in that IR has been shown to lead to more words being learned in a given time period, but it also required more time than other instructional approaches and was the less efficient of the two compared interventions (Nist & Joseph, 2008). IR was somewhat more efficient in this study because it required less time to teach the three or four words taught in this study, as compared to six in previous research. Moreover, the participants in the Nist and Joseph study were first graders and perhaps the middle-school students more closely adhered to procedural directions. Moreover, previous efficiency research used acquisition of the words (Cates et al.,
Comparison of Small-Group Comprehension Strategies

2003; Nist & Joseph, 2008) and the current study involved the application of the words to reading context and answering comprehension questions with them. Recent research found that efficiency estimates significantly vary based on how the dependent variable was operationally defined (i.e., initial acquisition or retention) (Burns & Sterling-Turner, 2010). Research with students with disabilities suggested that IR was more efficient than other approaches (Burns & Boice, 2009), but these students were struggling learners without disabilities. The exact reason why IR was superior in efficiency in this study, but not so in other studies, is unknown and suggests an area for future research.

Although preteaching keywords with IR resulted in a large effect, the mean score for the condition was only about 50% correct. Given that the condition was highly efficient and only required approximately 6 or 7 minutes to complete, interventionists could consider making this approach one component of a multi-component intervention package, which meta-analytic research found led to a large effect ($d = .80$) among adolescent readers (Scammacca et al., 2007). Perhaps it would be best to combine preteaching keywords with instructional level curricula, modeling effective comprehension processes, the use of graphic organizers, reciprocal teaching, and practice with comprehension strategies (National Reading Panel, 2000). Moreover, Torgesen et al. (2007) suggested that reading support in content areas (e.g., Social Studies) is especially important for adolescents who are struggling readers. Thus, these strategies could be simple approaches for content area teachers to use, in addition to engaging instructional materials and effective practices, for students who need additional support but whose skill levels are not severely discrepant from grade-level expectations. Although these data suggest some utility, the potential implications for content area teachers should be further researched before implemented in practice.

Preteaching keywords and unknown words both have been shown to increase reading fluency (Burns, 2007; Burns et al., 2004), and word reading skills were closely related to comprehension (Cromley & Azevedo, 2007; Jenkins, Fuchs, van den Broek, Espin, & Deno, 2003). Although we did not assess word reading or reading fluency in the current study, preteaching keywords may have led to the somewhat larger effect because the intervention also affected reading fluency. A previous meta-analysis of repeated reading found a mean effect size of .67 for comprehension (Therrien, 2004), which is considerably smaller than the effect size of $d = 1.09$ found in the current study. This suggests that future researchers could assess reading fluency to determine if the results were due to increases in word reading, and future interventions could combine preteaching keywords with reading fluency interventions (e.g., repeated reading) to create a more comprehensive intervention package.

This study presents some promising data for small-group interventions among middle-school students. Although cooperative learning has been shown to be a component of effective reading comprehension interventions (NRP, 2000) and small-group interventions are an important aspect of school-based academic interventions (Vaughn et al., 2007), few studies have examined small-group interventions for reading comprehension. The current data suggest that additional research in this area seems warranted.

The preceding conclusions should be interpreted within the context of some methodological limitations. Keywords were selected for the passage rather than identifying unknown words for individual students. Thus, students may have already known the selected keywords or may not have known words that were not selected as keywords to be pretaught. Moreover, the relatively few words identified as keywords may have insufficiently facilitated comprehension given that the participating students were all identified as struggling readers. Although identifying more keywords via a word search (Gravois &
Gickling, 2002) might have resulted in the intervention requiring more time, it could be hypothesized that this would further facilitate accurate responding and balance the effect on efficiency, yet this possibility should be examined by future research.

It should also be noted that the interventions were conducted with only one reading passage for each and the baseline passage was shorter than the two intervention passages. Perhaps the lesser amount of material in baseline facilitated student comprehension. Conversely, it may have provided a denser, more challenging concentration of content from which to garner understanding. Moreover, it is possible that the students had more background knowledge of one passage than the other; however, it is unlikely that greater background knowledge for one passage affected the results because the passages were counterbalanced. The publishers rated all three passages of equal difficulty but previous research found that ratings of difficulty did not result in valid conclusions (Ardoin, Suldo, Witt, Aldrich, & McDonald, 2005). Thus, future researchers could use multiple passages for each condition to lessen the effect of background knowledge or inconsistent difficulty between passages. There were also more females than males in the groups, which may have affected the results. Finally, students responded in writing to the open-ended comprehension questions in order to administer the assessment to the group. Using oral answers to the questions may have resulted in different responses and suggests an area for future research.

The exploratory nature of the study yielded results that suggest several directions for future research. First, the way in which key words were identified could be altered to match more closely with the needs of the individual group. Word searches have been used effectively in previous research to identify key words to teach for comprehension (Burns, 2007). This methodology might lead to differences in the number of words to be pretaught, which in turn would require further investigation of the efficiency of the keyword technique. As previously mentioned, it could be hypothesized that increased time for intervention might be compensated by increased comprehension.

Future research could also use multiple passages, better equated passages, and a more comprehensive treatment package. Additionally, this study could be implemented as a tier 2 intervention in which the effectiveness of core instruction could be assessed and a lack of acceptable response for individual students would trigger the need for a more intense intervention. Doing so would allow the data to more clearly generalize to tier 2 interventions, which is how many small-group academic interventions are delivered in K–12 schools (Vaughn et al., 2007). Thus despite the delineated limitations, these data provide informative directions for future research regarding comprehension interventions for middle- and high-school students.

References


