Enhancing Teacher Read Alouds With Small-Group Vocabulary Instruction for Students With Low Vocabulary in First-Grade Classrooms

Article *in* School psychology review · June 2011

CITATIONS
10

READS
1,659

7 authors, including:

Hank Fien
University of Oregon
89 PUBLICATIONS **965** CITATIONS
SEE PROFILE

Lana Santoro
University of Oregon
15 PUBLICATIONS **573** CITATIONS
SEE PROFILE

Scott K. Baker
University of Oregon
116 PUBLICATIONS **4,522** CITATIONS
SEE PROFILE

Yonghan Park
Chungnam National University
20 PUBLICATIONS **221** CITATIONS
SEE PROFILE

School Psychology Review,
2011, Volume 40, No. 2, pp. 307–318

RESEARCH BRIEF

Enhancing Teacher Read Alouds With Small-Group Vocabulary Instruction for Students With Low Vocabulary in First-Grade Classrooms

Hank Fien, Lana Santoro, Scott K. Baker, and Yonghan Park
University of Oregon

David J. Chard
Southern Methodist University

Susanna Williams
University of Oregon

Priti Haria
DeSales University

Abstract. The purpose of the current study was to evaluate the effect of small-group instruction on the vocabulary and comprehension of first-grade students identified with low language and low vocabulary skills. Overall, 102 first-grade students scoring below the 50th percentile on relational vocabulary were blocked by classroom, matched according to vocabulary score, and randomly assigned within the 18 participating classrooms to one of two conditions. All students participated in a whole-class Read Aloud Curriculum and students in the intervention group received small-group instruction for 20 min, 2 times per week, for 8 weeks in addition to the whole-group instruction. The small-group instruction included additional read aloud activities and opportunities to preview, review, and enhance vocabulary instruction aligned with the whole-class Read Aloud Curriculum. Students who received small-group instruction reliably outperformed their controls on vocabulary assessments and expository retells (with effect sizes of 0.57 to 0.66), but not on narrative retells. Findings provide preliminary support

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305G050216 to the Pacific Institutes for Research. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education.

Correspondence regarding this article should be addressed to Hank Fien, Center on Teaching and Learning, University of Oregon 5292, Eugene, OR 97403-5292; e-mail: ffien@uoregon.edu

for providing small-group instruction in addition to whole-class read aloud practices for the purpose of increasing vocabulary and expository retelling skills for at-risk first-grade students.

Vocabulary differences among students at school entry are large and attributable to specific experiences students have prior to beginning school. As early as age three children with strong vocabularies know approximately 600 more word meanings than children with weak vocabularies (Hart & Risley, 1995). By the end of second grade, the children with strong vocabularies know between 4,000 and 8,000 more word meanings than students with weak vocabularies (Biemiller, 2004). Given the strong relation between vocabulary knowledge and reading comprehension, which becomes stronger over time (Baumann & Kame'enui, 2009; National Reading Panel, 2000), it is particularly important to identify children in the early grades with low language and vocabulary levels and intervene in ways designed to improve their vocabulary knowledge and as a result their subsequent reading comprehension outcomes.

One strategy for building decontextualized language and vocabulary is through teacher read alouds (Beck & McKeown, 2001), which are planned oral readings of a book or story in which the teacher builds background knowledge, explicitly teaches vocabulary, reviews text structure, and models comprehension strategies in text that is typically above their students' reading skill level (van Kleeck, Stahl, & Bauer, 2003). Read aloud approaches are a prevalent component of reading instruction in the early grades (Coyne, Zipoli et al., 2009). In a recent survey, 96% and 75% of kindergarten and first-grade teachers, respectively, reported using read aloud practices 5 days per week (Morrow & Brittain, 2003). Although read aloud approaches have demonstrated promise for improving student vocabulary knowledge, they have typically lacked the intensity necessary to close the early vocabulary gap without the addition of an extended instructional component (Biemiller, 2004; Coyne, McCoach, & Kapp, 2007).

Recent research indicates that a deep level of word knowledge is needed to obtain a measurable effect on comprehension (Beck, McKeown, & Kucan, 2002; Coyne et al., 2007). Vocabulary instruction has greater potential to have a measurable effect on comprehension when exposure to rich and varied vocabulary is complemented with direct and sequential instruction that emphasizes accuracy of word knowledge, fluency of accessing word meanings, and rich, decontextualized examples of a word's application (Baumann & Kame'enui, 2004; Biemiller, 2004). Moreover, vocabulary interventions that have demonstrated promising effects on comprehension have three main characteristics: (a) they include both definitional and instructional information of words, (b) they encourage deep processing of words, and (c) they provide multiple exposures to words (Beck et al., 2002).

Teacher read alouds provide a promising context for incorporating such robust vocabulary instruction and to integrate more intentional explicit vocabulary and comprehension instruction to benefit all children (Coyne, Zipoli et al., 2009). Moreover, small-group vocabulary instruction is a promising mechanism to close the vocabulary achievement gap for students at risk for comprehension difficulties (Baker, Fien, & Baker, 2010; Coyne et al., 2007). The Read Aloud Curriculum integrates intentional, direct comprehension, and explicit vocabulary instruction into read alouds while maintaining the integrity of an authentic read aloud experience that would be highly engaging for students (Coyne, Zipoli et al., 2009; McKeown, Beck, & Blake, 2009). The 19-week instructional program uses thematically paired narrative and expository texts and includes (a) setting a purpose for reading, (b) building vocabulary knowledge, (c) making text-to-text and text-to-life connections, and (d) having students retell stories or information on a regular basis.

Previous research with the whole-class Read Aloud Curriculum found moderate-to-strong effects on first-grade student vocabulary ($d = 0.80$) and moderate effects on narrative retell outcomes ($d = 0.36$; Fien, Baker, Santoro & Chard, 2010). When examining subgroups of students at risk for language and vocabulary difficulties, at-risk students in the treatment group closed the vocabulary gap with their nonrisk peers in the control group. At-risk students, however, did not benefit from the whole-class curriculum as much as their nonrisk peers within the treatment group. The findings from the whole-class Read Aloud study prompted the development and subsequent testing of a small-group, "booster" intervention designed to supplement the whole-group curriculum. The intervention provided targeted support in vocabulary and structured discourse opportunities with expository content that was conceptually aligned with the expository texts used in the whole-class Read Aloud Curriculum. The decision to anchor the small-group intervention to expository content (rather than narrative content) was based on research demonstrating that students required a deeper understanding of word meanings in content-area reading with expository texts to maintain comprehension (Harmon, Hedric, & Wood, 2005).

The purpose of this article is to present the findings from preliminary research on the added use of this small-group intervention. Specifically, we examine whether the use of small-group instruction improved the vocabulary and comprehension performance of first-grade students identified with low language and vocabulary skills. The primary research question is: To what extent does supplementing the whole-class Read Aloud Curriculum with small-group vocabulary instruction affect student vocabulary and retelling?

Method

Participants

A total of 18 first-grade classrooms from nine Title I schools in the Pacific Northwest participated in the study. Students participating in the study included 106 first-grade students, ages 6–7. Fifty-four students received the small-group intervention and 52 students were in the control group. Demographics in the intervention group included 55.6% female and 44.4% male students; 74.1% were White, 1.9% African American, 18.5% Hispanic, 1.9% Native American, and 3.7% declined to answer. In addition, 18.5% were eligible for special education and 7.4% were English language learners. Demographics in the control group included 40.4% female and 59.6% male students. 69.2 percent were White, 3.8% African American, 19.2% Hispanic, 3.8% Native American, 1.9% Asian, and 1.9% declined to answer. Overall, 23.1% of the students in the control group were eligible for Special Education and 5.8% were English language learners. We examined whether there were statistically significant differences between the intervention and control groups in terms of their demographic composition including gender, ethnic minority, special education eligibility, and English language learner status. Logistic regression analysis indicated that group membership was not a significant predictor of any of the demographic variables and supported the group comparability of the present study.

A randomized block design was employed (i.e., blocking on classroom) to help determine if additional small-group instruction would enhance the vocabulary and comprehension of students identified with low language and vocabulary skills. All students in each classroom were screened at the start of the study to determine early language and vocabulary risk levels. The 10 students in each classroom who scored below the 50th percentile on the Relational Vocabulary subtest of the Test of Oral Language Development—Primary (3rd edition; TOLD-P-3; Newcomer & Hammill, 1997) were matched on the basis of their Relational Vocabulary subtest scores.

Intervention Conditions

After establishing matched pairs, students were randomly assigned to either the intervention condition or a no-treatment control condition. If fewer than 10 students scored

below the 50th percentile in a given classroom, then a smaller number of students were sampled from that classroom. All 18 classrooms used the Read Aloud Curriculum in whole-class instruction. Treatment students received small-group booster instruction *in addition* to the whole-class Read Aloud Curriculum, as described next.

Whole-class Read Aloud Curriculum. The Read Aloud Curriculum was used for 8 weeks in all 18 participating classrooms. The program contained four units, and each unit included three expository and four narrative lessons that focused on science-related content organized around animal themes (e.g., Narrative text: *Stellaluna* by Janell Cannon; and Expository: *Bats* by Gail Gibbons). Narrative and expository texts were included in the curriculum to deepen students' understanding of text structure, build background knowledge, and increase vocabulary knowledge. Including both narrative and expository texts also allowed teachers to introduce a text structure framework that could be used to comprehend both forms of text. The read alouds included before-, during-, and after-reading components with integrated explicit comprehension and vocabulary instruction. Instruction focused on setting a purpose for reading, building vocabulary knowledge, making text-to-text and text-to-life connections, and having students retell narrative and expository books on a regular basis. The whole-group Read Aloud Curriculum consisted of 28, 30-min lessons across approximately 40 days of instruction.

Intervention condition. Students participating in the intervention condition received an additional small-group intervention for 20 min, two times per week, concurrently with the 8-week implementation of the whole-class Read Aloud Curriculum. Each small-group consisted of 2–5 students. The purpose of the small-group intervention was to increase student comprehension of, and vocabulary related to, expository content discussed during the whole-class Read Aloud Curriculum. Instructional content for the booster lessons was aligned with the Read Aloud Curriculum's thematic units and information texts through the use of supplemental "Big Books."

The Big Books used an 11- × 14-inch layout and were written by a local science teacher to meaningfully and strategically integrate content from the Read Aloud Curriculum's expository texts. Vocabulary selected for use in the Big Books also supported, overlapped, or extended the vocabulary discussed in the Read Aloud Curriculum texts. The Big Books were used for read alouds in the booster intervention, and content from the Big Books served as the framework for text-based discussions and instructional conversations (Saunders & Goldenberg, 1999) about vocabulary and expository concepts across booster lessons.

A consistent set of instructional activities or routines was used across the lessons in each booster unit. In the first lesson of each unit, there was a short warm-up discussion to prime background knowledge. During this activity, students were shown a photograph with an animal they would learn more about in the unit. Instructors facilitated the introductory discussion with questions such as the following: "What do you know about bats?" "Have you seen this animal before?" "What do you see in this picture?" Second, the booster instructor introduced critical or challenging vocabulary words that students would encounter during the unit. A consistent routine was used to discuss vocabulary (Beck et al., 2002). The instructional routine included saying and repeating the target vocabulary word, saying and practicing the definition, discussing examples and nonexamples related to the word, having an extended conversation about the word (e.g., "Is this an example of *migrate?*" "How do you know?" "When would an animal *migrate*?" "Why would an animal *migrate*?"), and practicing use of the word in expressive language (e.g., "Use the word *migrate* in a supersentence."). After the vocabulary discussion, instructors previewed the read aloud Big Book. Guidelines from Cooper, Chard, and Kiger (2006) were used to help build students' anticipation about the topic and to briefly discuss

pictures and nonfiction text features (i.e., table of contents, index, headings, and glossary).

The second lesson in each unit began with a review of vocabulary discussed in the first lesson. Additional vocabulary words were also highlighted and discussed. The next part of the lesson included an overview of the main idea questions used to help focus student comprehension during the Big Book read aloud. Each student was given a prompt sheet/think sheet that listed the focus questions with space for note taking or drawing. Finally, the second lesson concluded with an instructor read aloud of the first part of the Big Book. Because each Big Book was written to include answers to the focus questions, the instructor would pause during reading at appropriate times and guide students in a discussion about the answer. A guided note-taking process was used to help students record information about the questions on their prompt sheets. Instructors also paused during the read aloud to help clarify vocabulary, prompt conceptual connections, and summarize information.

During the third lesson, instructors reviewed content from the second lesson and continued the Big Book read aloud. After the read aloud and discussion of the completed prompt sheets and focus questions, vocabulary was reviewed in a game format (e.g., Go Fish, Deal or No Deal, Jeopardy). The fourth lesson of each unit began with another discussion of the notes and content listed on student prompt sheets. During the discussion, instructors prompted students to use vocabulary words and their own notes to answer questions. Next, the instructor utilized an animal classification chart to continue conversations about the expository content and vocabulary while sorting and categorizing animal photos into groups. Students selected a card from a pile of animal pictures, placed the card with an animal group on the chart, and used a "supersentence" to expressively justify their placement of the photo in a particular animal category. For example, the student might say, "I know a lion is a mammal because it has fur, a backbone, and lungs." As students categorized the animal photos, instructors had opportunities to prompt vocabulary use and clarify understanding (e.g., "Do you agree with your friend? Why?/Why Not?" "How do you know that a bat is a mammal?"). The fourth and final lesson for a unit concluded with a summary of unit content and a preview of the topic for the next unit. This four-lesson framework was replicated for each of the subsequent units.

Control condition. To determine the optimal effects of the small-group booster lessons in our pilot study, we compared outcomes of students who received the small-group booster intervention with the outcomes of students who did not receive additional small-group instruction. The use of a no-treatment control group is an important component of pilot studies to determine the optimal effect of an intervention or strategy. This approach allows researchers to determine if there is any added instructional value before including other instructional comparisons or planned variations of instructional components in future research.

Training and Implementation Fidelity

A total of 11 interventionists hired by the project implemented the small-group booster instruction. Four of the interventionists were certified teachers and seven had experience working as paraprofessionals or classroom instructors. All four of the certified teachers had master's degrees. Of the other interventionists, three had associate's degrees and four had high school diplomas. The average teaching experience was 11.2 years and ranged from 1 to 20 years. The interventionists received a full-day training and regular ongoing support to implement the small-group intervention. In addition, lesson plans, teaching materials, and extensive feedback were provided to help facilitate high levels of treatment integrity.

A research team member observed and documented the implementation of the small-group booster lessons and evaluated the integrity of intervention implementation. Fidelity was evaluated according to the presence or absence of critical components, and a percentage of total components demonstrated. Observations were used both for the purpose of

documenting fidelity as well as for providing feedback to teachers about their implementation of the intervention. Fidelity of implementation was assessed four times for each teacher. Average fidelity of implementation was 87% (range of 79% to 97%) and represented the number of items observed divided by the total number of items.

Measures

TOLD-P-3. The TOLD-P-3 measures language proficiency, assessing skills in the areas of semantics, syntax, and phonology. The Relational Vocabulary subtest of the TOLD-P-3 was individually administered to all students before the intervention and was used to identify students at risk for language difficulties, and to match and assign students to conditions. A coefficient alpha of .87 was reported for the Relational Vocabulary subtest and was correlated .78 with the Semantic Knowledge subtest of the Bankson Language Test—Second Edition (Bankson, 1990). Percentile scores were used to identify at-risk students.

Narrative retell. At the completion of the 8-week intervention, students were asked to retell a story they had heard and discussed during the whole-class read aloud lessons. Standardized prompts and procedures used in the Strong Narrative Assessment Procedure (Strong, 1998) were used to elicit the retell. Student retells provide an estimate of students' comprehension of narrative texts. The students' retells were audio recorded for scoring and analysis using procedures similar to those developed by Morrow (1985). Certain story elements and plot episodes were counted to provide an estimate of how closely a student's retell followed the target story. Twenty total possible points could be received on the narrative retell measure. Trained project staff (blind to treatment condition) coded and scored students' retellings.

Expository retells. Narrative retell procedures were used to assess student comprehension of an expository text that was read and discussed during the whole-class read aloud lessons, and reinforced using a different expository book on the same topic during the small-group booster lessons. Scoring procedures were adapted from the Strong Narrative Assessment Procedure (Strong, 1998). Students were asked to tell everything they could about the information they had learned. Trained project staff listened to the students' retellings and coded them for concepts from the target expository text on reptiles. Students received one point for each fact identified from the expository text. Ten total possible points could be received on the expository retell measure.

Depth of Vocabulary Knowledge. A researcher-developed measure was used to assess student knowledge of 16 taught and untaught vocabulary words. Eight taught words were sampled from a pool of 14 expository-related vocabulary words taught during the whole-group read aloud lessons and reinforced during the booster lessons. Also included in the assessment were eight untaught words, two from each of four expository books presented during the whole-group read alouds, but not explicitly taught or discussed during either the whole-group or booster lessons. The Depth of Vocabulary Knowledge was individually administered. Students were asked to tell the meaning of each word and then to use each word in context (e.g., use the word in a sentence). Responses were audio taped for analysis and scored using a modified version of the Eller, Pappas, and Brown (1988) vocabulary scoring criteria. Each word was given a score for definition (0–2 points) and use (0–2 points). Sixty-four total possible points could be received on the depth of vocabulary knowledge measure.

Interobserver Agreement

Coders for the retells and Depth of Vocabulary Knowledge measure were held to a 90% inter-rater agreement standard (the number of agreements divided by the number of agreement plus the number of disagreements and multiplied by 100%) with a project principal investigator. In addition, 20% of student protocols were scored by two examiners. The average percent agreement between the origi-

nal and recoded protocols was 90% (range 88%–92%) for narrative retells, 93% (range of 92%–96%) for expository retells, and 95% (range of 94%–97%) for Depth of Vocabulary Knowledge.

Analytic Model

The data in this study were structured in a nested design. Students were nested within instructional groups (intervention or control), and those instructional groups were nested within classrooms. Because those subjects were nested under instructional conditions within classrooms or blocks, three-level hierarchical linear modeling provided an appropriate analytic framework to test the effect of the intervention (Raudenbush & Bryk, 2002). In fact, some classrooms were also nested within the same schools, but this level of nesting structure was not considered for our analytic model because we had only a small number of schools in our sample and those schools were relatively similar, producing a nonsignificant school-level random effect. The specific model for analysis is presented below. In the original model, the intervention had a random effect (u_{01k}) across different classrooms, but it was not statistically significant. Thus, the random term for β_{01k} was removed from the model.

Level 1: Student Level

$$Y_{ijk} = \pi_{0jk} + e_{ijk}$$

where Y_{ijk} is the test score for student i of instructional group j in class k; π_{0jk} is the average test score for the students of instruction group j in class k; and e_{ijk} is the Level 1 random effect.

Level 2: Instructional-group Level

$$\pi_{0jk} = \beta_{00k} + \beta_{01k} \times (\text{Intervention}) + r_{0jk}$$

where β_{00k} is the average test score for the students in control group in class k; β_{01k} is the difference in average test scores between control group and intervention group in class k; and r_{0jk} is the Level 2 random effect.

Level 3: Classroom Level

$$\beta_{00k} = \gamma_{000} + u_{00k}$$

$$\beta_{01k} = \gamma_{010}$$

where γ_{000} is the overall average test score for the students in control group across classrooms; u_{00k} is the Level 3 random effect; and γ_{010} is the overall difference in average test scores between control groups and intervention groups across classrooms.

Finally, effect sizes were calculated for significant outcomes. Effect sizes included the coefficient of the intervention divided by the square root of the sum of the Level 1 and Level 2 variance (Spybrook, Raudenbush, Congdon, & Martinez, 2009).

Among the students in the final sample ($n = 106$), some did not complete one or more of the assessments either at pretest or post-test, primarily because of an absence on the dates of assessment. The amount of missing data was minimal, with approximately 6% of the original students missing pretest or post-test data. These students were ultimately excluded from the final analyses. These missing data were assumed to be missing at random (Allison, 2002). We checked the missing at random assumption by comparing the students with missing information for any test score to those without missing information for that test in relation to all other observed test scores. The test scores between students with and without missing information were not statistically significantly different, confirming the missing at random assumption.

Results

Preliminary Analyses

Students in the intervention and control conditions were tested on three measures at pretest (before the implementation of the intervention) and post-test (after the implementation of the final intervention lesson). Raw scores from each measure were used for all analyses. Descriptive data are presented in Table 1, including the range of scores for each measure. Pretest scores were analyzed to evaluate performance comparability between inter-

Table 1
Descriptive Statistics of Assessment Scores by Intervention Condition

Test/Condition	*N*	Mean	*SD*	Minimum	Maximum
		Before Intervention			
Oral language proficiency					
Control	49	4.18	2.58	0	9
Treatment	51	4.45	2.83	0	8
Total	100	4.32	2.70	0	8
Vocabulary knowledge					
Control	52	6.47	4.55	0	22
Treatment	54	6.78	5.07	0	18
Total	106	6.63	4.80	0	22
		After Intervention			
Narrative retell					
Control	52	6.17	5.83	0	24
Treatment	54	5.91	5.59	0	20
Total	106	6.04	5.68	0	24
Expository retell					
Control	50	1.84	1.45	0	6
Treatment	51	2.73	1.67	0	6
Total	101	2.29	1.62	0	6
Vocabulary knowledge					
Control	52	12.73	7.48	2	32
Treatment	54	18.71	10.26	1	41
Total	106	15.78	9.46	1	41

vention and control conditions prior to the study. There were no significant differences in pretest scores by condition.

Effect of Intervention

The effect of the small-group intervention for at-risk first-graders on comprehension and vocabulary outcomes was analyzed using three-level hierarchical linear models (HLM). Table 2 summarizes the results from the hierarchical linear models analyses. Intervention effects were significant on two of the three measures: Vocabulary Knowledge and Expository Retell. The intervention did not have an effect on the Narrative Retell measure ($\gamma_{010} = -0.26$, $t = -0.24$, $p > .10$).

For Expository Retell, the students who received the small-group intervention had, on average, a 0.89 point higher score than the students in the control group ($\gamma_{010} = 0.89$, $t = 2.87$, $p < .01$). The effect size was moderate ($d = 0.57$), with an improvement index of +22. The improvement index is the difference in the percentile rank of the typical or average student in the comparison condition and the typical student in the intervention condition. Values range from −50 to +50, with a positive number showing an advantage for the treatment condition. Another way of stating this is that a student in the control group could be expected to move up 22 percentile points on the expository retell outcome had they received the small-group intervention. The What Works Clearinghouse recommends reporting the improvement index estimate to increase stakeholders' ability to evaluate the practical importance of an intervention's effect (What Works Clearinghouse *Procedures and Standards Handbook*, 2008). For Vocabulary Knowledge, the scores of the students in the

Table 2
Examination of Booster Intervention Effect

	Narrative Retell			Expository Retell			Vocabulary Knowledge		
Fixed Effect	Coefficient	*SE*	*t*	Coefficient	*SE*	*t*	Coefficient	*SE*	*t*
Intercept (γ_{000})	6.09	0.82	7.43***	1.84	0.22	8.38***	12.73	1.24	10.26***
Intervention (γ_{010})	−0.26	1.08	−0.24	0.89	0.31	2.87**	5.98	1.74	3.44**

	Narrative Retell			Expository Retell			Vocabulary Knowledge		
Random Effect	Variance	*df*	χ^2	Variance	*df*	χ^2	Variance	*df*	χ^2
Level 3 (u_{00k})	1.17	17	20.18	0.00	17	9.92	0.03	17	17.22
Level 2 (r_{0jk})	0.01	16	12.55	0.00	15	18.79	0.17	16	15.42
Level 1 (e_{ijk})	30.77			2.40			79.44		
Auxiliary Statistics	95% CI of γ_{010} (−2.46, 1.94) No significant treatment effect			95% CI of γ_{010} (0.26, 1.51) Effect size = 0.58			95% CI of γ_{010} (2.38, 9.59) Effect size = 0.67		

Note. CI = confidence interval.
**$p < .01$.
***$p < .001$.

treatment group were, on average, 5.98 points higher than those of the students in the control group ($\gamma_{010} = 5.98$, $t = 3.44$, $p < .01$). The effect size was also moderate ($d = 0.67$), with an improvement index of +25.

Discussion

The results of the current study provide preliminary support that small-group instruction appears to enhance the vocabulary knowledge and expository retellings of students identified with low vocabulary and language skills. These findings are in the context of classrooms in which students were already receiving high-quality whole-class read aloud instruction that incorporated direct and explicit vocabulary and comprehension instruction. In other words, the small-group intervention effect on increased vocabulary and expository retells was an *added value* above and beyond the benefit of the whole-class instruction alone. These results are particularly noteworthy given that moderate effects were observed with somewhat modest levels of small-group instruction. Despite having modest instructional time, the small-group intervention was designed with a high level of instructional intensity with a strategic focus on vocabulary and comprehension and a systematic progression of skills and content across the intervention.

The robust effect size and improvement index on the vocabulary outcome in the current study is promising and comparable to recent studies on small-group vocabulary interventions (Coyne, Zipoli et al., 2009). This study adds to the recent research suggesting that designing vocabulary interventions that (a) include both definitional and instructional information of words, (b) encourage deep processing of words, and (c) provide multiple exposures to words, can promote enhanced vocabulary outcomes.

The significant effect on expository retell is also noteworthy in the current study. Although the positive effect on vocabulary

was indeed promising, a primary goal was that students would transfer word knowledge of important expository vocabulary and concepts to their comprehension of expository content. There are too many instructional design features to isolate a direct effect, but the systematic use of conceptually aligned whole-group and small-group nonfiction read aloud texts may have provided extended opportunities for students to connect knowledge and vocabulary across texts. With additional read alouds during small-group instruction, interventionists could guide students to integrate their new knowledge with a broader body of background knowledge. In addition, instructors facilitated instructional conversations by guiding students to focus on new ideas, prompting students to elaborate or connect ideas, and showing students how to use the text as a resource for learning information and problem solving (Beck & McKeown, 2001). Overall, our approach to strategically link texts across whole classes and small groups and to provide extended practice opportunities and structured discourse promoted students' deeper general knowledge of the expository content and strengthened their expository retell skills.

Limitations and Directions for Future Research

The intervention effects found here were confounded with instructional time. Our control students did not receive additional time or comparable instructional support above and beyond the whole-class read aloud instruction. Given the nature of the research counterfactual, we consider our findings to be preliminary in nature and therefore limit the immediate practical implications of the study. Our subsequent research continues to address this and other design limitations. A second limitation of the current study is the reliance on researcher-developed measures. Although one measure was a commonly used standardized narrative retell measure (Strong, 1998), the majority of dependent measures were developed by the research team. The measures were designed to be more proximal to the content taught in the small-group intervention, but the inclusion of a fuller array of standardized measures would increase the external validity of the research findings. Finally, although the seemingly unequal gender distribution across conditions was not significant, it was notable and warrants consideration in the context of our findings.

Despite these limitations, our results provide preliminary support for adding a small-group component to the whole-group Read Aloud Curriculum for the purpose of building student vocabulary and comprehension. Through further efficacy testing, we believe this line of research has significant promise for using a read aloud framework in whole-class and small-group settings to support students' vocabulary and comprehension outcomes.

References

Allison, P. D. (2002). *Missing data.* Thousand Oaks, CA: Sage.

Baker, S. K., Fien, H., & Baker, D. (2010). Robust reading instruction in the early grades: Conceptual and practical issues in the integration and evaluation of Tier 1 and Tier 2 instructional supports. *Focus on Exceptional Children, 41,* 1–20.

Bankson, N. (1990). *Bankson Language Test—Second Edition.* Austin, TX: Pro-Ed.

Baumann, J. F., & Kame'enui, E. J. (2004). *Vocabulary instruction: Research to practice* (pp. 28–40). New York: Guilford Press.

Beck, I. L., & McKeown, M. G. (2001). Text talk: Capturing the benefits of read-aloud experiences for young children. *The Reading Teacher, 55*, 10–20.

Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction. Solving problems in the teaching of literacy.* New York: Guilford Press.

Biemiller, A. (2004). Teaching vocabulary in the primary grades: Vocabulary instruction needed. In J. F. Baumann & E. J. Kame'enui (Eds.), *Vocabulary instruction: Research to practice* (pp. 28–40). New York: Guilford Press.

Cooper, J. D., Chard, D. J., & Kiger, N. D. (2006). *The struggling reader: Interventions that work.* New York: Scholastic.

Coyne, M., McCoach, B., & Kapp, S. (2007). Vocabulary intervention for kindergarten students. *Learning and Disabilities Quarterly, 30*, 74–88.

Coyne, M. D., Zipoli, R. P., Chard, D. J., Faggella-Luby, M., Ruby, M., Santoro, L. E., et al. (2009). Direct instruction of comprehension: Instructional examples from intervention research on listening and reading comprehension. *Reading and Writing Quarterly, 25,* 221–245.

Eller, R. G., Pappas, C. C., & Brown, E. (1988). The lexical development of kindergarten learning from

written context. *Journal of Reading Behavior, 20*, 5–23.

Fien, H., Baker, S. K., Santoro, L., & Chard, D. (2010). promoting vocabulary development and knowledge of narrative texts through read alouds in first grade classrooms. Paper presented at the annual meeting of the Society for Scientific Study of Reading, Berlin, Germany.

Harmon, J. M., Hedrick, W. B., & Wood, K. D. (2005). Research on vocabulary instruction in the content areas: Implications for struggling readers. *Reading and Writing Quarterly*, *21,* 2–25.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children.* Baltimore: Brookes.

Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms.* New York: Cambridge University Press.

McKeown, M. G., Beck, I. L., & Blake, R. G. K. (2009). Rethinking reading comprehension instruction: A comparison of instruction for strategies and content approaches. *Reading Research Quarterly, 44*, 218–253.

Morrow, L. M. (1985). Retelling stories: A strategy for improving young children's comprehension, concept of story structure, and oral language complexity. *Elementary School Journal, 85,* 647–661.

Morrow, L. M., & Brittain, R. (2003). The nature of storybook reading in the elementary school: Current practices. In A. van Kleeck, S. A. Stahl, & E. B. Bauer (Eds.), *On reading books to children: Parents and teachers* (pp. 140–158). Mahwah, NJ: Lawrence Erlbaum.

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: National Institute of Child Health and Human Development.

Newcomer, P. L., & Hammill, D. D. (1997). *Test of language development: Primary* (3rd ed.). Austin, TX: Pro-Ed.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.

Saunders, W., & Goldenberg, C. (1999). The effects of instructional conversations and literature logs on limited and fluent English proficient students' story comprehension and thematic understanding. *The Elementary School Journal*, *99,* 277–301.

Spybrook, J., Raudenbush, S. W., Congdon, R., & Martinez, A. (2009). *Optimal design for longitudinal and multilevel research.* Retrieved from University of Michigan web site: http://sitemaker.umich.edu/group-based/files/od-manual-v200–20090722.pdf

Strong, C. (1998). *The strong narrative assessment procedure.* Eau Claire, WI: Thinking Publications.

What Works Clearinghouse. (2008). *Procedures and standards handbook.* Washington, DC: Institute of Education Sciences.

van Kleeck, A., Stahl, S. A., & Bauer, E. B. (Eds.). (2003). *On reading books to children: Parents and teachers.* Mahwah, NJ: Lawrence Erlbaum.

Date Received: October 19, 2009
Date Accepted: March 28, 2011
Action Editor: Matthew K. Burns ■

Hank Fien, PhD, is a research associate at the Center for Teaching and Learning at the University of Oregon. He is co-principal investigator on five Institute of Education Sciences (IES) grants focusing on the areas of early reading, adolescent reading, and early mathematics interventions for diverse learners in school settings. His research interests include reading and mathematics development in young children, instructional design, and empirically validating interventions aimed at preventing or ameliorating student academic problems.

Lana Santoro, PhD, is a research associate with the Center on Teaching and Learning, University of Oregon. She is a principal investigator on a series of IES-funded research projects on teaching reading comprehension and vocabulary to young elementary grade students during classroom read alouds. Of particular focus is her work to develop supplemental interventions for students at risk of early reading difficulties, students with vocabulary and language deficits, and English language learners.

Scott K. Baker, PhD, is the research director and associate director of the Center on Teaching and Learning at the University of Oregon. He is principal investigator on five IES grants focusing on early reading and mathematics interventions for the full range of learners in school settings, including English learners. He has been the principal investigator on seven research grants funded by the Office of Special Education Programs, U.S. Department of Education. His research and professional interests focus on the learning needs of students with learning difficulties, including students with learning disabilities and English learners, and translating research to practice.

Yonghan Park, PhD, is a research associate at the Center on Teaching and Learning at the University of Oregon. His research focuses on cognitive and motivational aspects of literacy learning and instruction. His current interests include early reading development, English language learners, and research methods.

David Chard, PhD, is the Leon Simmons Endowed Dean of the Annette Caldwell Simmons School of Education and Human Development and professor of teaching and learning at Southern Methodist University in Dallas. He has been a principal investigator on several federal research projects on reading comprehension and mathematics instruction. He is a member of the International Academy of Research on Learning Disabilities.

Susanna Williams, B.A., is a research specialist at the Center on Teaching and Learning at the University of Oregon. Her research interests are focused on elementary children at risk for reading, vocabulary and comprehension.

Priti Haria, PhD, is an assistant professor of special education at DeSales University. Her research interests are vocabulary instruction, reading–writing connection, reading comprehension instruction in analysis of argumentative text, text-structure based reading comprehension instruction for at-risk upper elementary students with a focus on text-based dialogic interactions.