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The effects of dyad reading and text difficulty on third-graders' reading achievement

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ABSTRACT

This study replicated, with modifications, previous research of dyad reading using texts at various levels of difficulty (Morgan, 1997). The current project measured the effects of using above–grade-level texts on reading achievement and sought to determine the influences of dyad reading on both lead and assisted readers. Results indicate that weaker readers, using texts at two, three, and four grade levels above their instructional levels with the assistance of lead readers, outscored both proficient and less proficient students in the control group across multiple measures of reading achievement. However, the gains made by assisted readers were not significantly different relative to the various text levels. When all assessments were considered, assisted readers reading texts two grade levels above their instructional levels showed the most robust gains in oral reading fluency and comprehension. Lead readers also benefited from dyad reading and continued their respective reading developmental trajectories across measures.

Proficiency in reading is essential for students' success in every academic subject and a critical skill for lifelong learning (National Reading Panel [U.S.] & National Institute of Child Health and Human Development [U.S.], 2000). Children and adolescents who struggle with reading are more likely to drop out of school and be less prepared for higher education and career opportunities (Biancarosa & Snow, 2006). Below-standard reading performance can develop early and is best addressed as soon as possible. Thus, many U.S. educators are searching for efficient programs and approaches that can promote reading proficiency for underprepared students.

Reading proficiency research

The solution for increasing students' reading proficiency seems simple: Students need to read more and with greater efficiency. However, those with reading difficulties often experience a lack of motivation, practice, and growth in reading abilities. Despite concerted efforts by educators, interventions for struggling readers have typically failed to adequately bridge the ever-widening gap in achievement between skilled and struggling readers (Hall & Kennedy, 2006; Stanovich, 1986). Schools need interventions designed to successfully bring struggling readers to grade-level performance. One line of research that targets oral-reading fluency and practice—specifically the Neurological Impress Method (NIM)—has potential to help students make accelerated reading growth.

Oral-reading fluency

A strong characteristic of good readers is smooth, accurate oral reading, and it is relatively easy to identify students who cannot read with proficiency. Response to intervention (Fuchs & Fuchs, 2006) has become common practice in elementary schools, moving students in and out of interventions and special services based on 1-minute measures of reading rate and accuracy (Abbott, Willis, Miller, & Kaufman, 2012). Interventions for struggling readers commonly focus on building reading fluency: the ability to quickly and accurately decode words. But readers also need to process the meaning of the words and parse the text into syntactically and semantically appropriate units of meaning that facilitate comprehension of the complete text (Rasinski, 2004; Rasinski, Reutzel, Chard, & Linan-Thompson, 2011). The focus on primarily speed and accuracy has, unfortunately, perpetuated a narrow definition of fluency that fails to take into account meaning-making aspects, namely word recognition (as opposed to basic decoding) and the prosodic parsing of text into meaningful phrases and sentences (Kuhn, Schwanenflugel, & Meisinger, 2010). Promoting the surface features of fluency while neglecting the meaning-making aspects of fluency often leaves less proficient students lagging far behind their peers in general reading achievement (McMaster, Fuchs, Fuchs, & Compton, 2005). "Reading development presumes increasing word recognition speed, which is associated with enhanced capacity to allocate attention to integrative comprehension processing when engaging with text" (Fuchs, Fuchs, Hosp, & Jenkins, 2001, p. 242). Becoming a fluent reader is related to greater prosody, comprehension, stamina, and motivation, resulting in increased time spent reading that further strengthens reading and comprehension skills (Shanahan, Fisher, & Frey, 2012; Stanovich, 1986).

Prosody refers to features of speech that affect meaning, such as varied pitch, stress, and juncture (Eldredge, 2005) or appropriate expression to represent the intent of the text

(Kuhn et al., 2010). Prosodic oral-reading fluency has long been seen as an indicator of overall reading comprehension and achievement. While it is difficult to determine whether fluency is an outcome of or contributor to comprehension (Pikulski & Chard, 2005), the current consensus is that fluency and comprehension share a complex reciprocal relationship (Steck, Roser, & Martinez, 1998). Reading fluency alleviates some of the word identification challenges that can hinder comprehension (Harris & Hodges, 1995). Fuchs et al. (2001) found that oral-reading fluency was strongly associated with students' abilities to read passages and answer comprehension questions about those passages, indicating a high correlation between oral-reading fluency and overall reading competence. Oral-reading fluency interventions have resulted in increased fluency and comprehension for both oral and silent reading (Fuchs et al., 2001; Rasinski, 2004; Shanahan, 2005).

Fortunately, as noted by Benjamin and Schwanenflugel (2010), prosodic reading of difficult texts tends to naturally increase along with the difficulty of the text. Apparently, this occurs for readers at all achievement levels as they strive to make sense of their reading:

> Long, complex sentences with difficult vocabulary require such prosodic scaffolding. By cognitively bracketing key informational units, such as phrases, prosody is said to assist by maintaining an utterance in working memory until a more complete semantic analysis can be carried out (p. 401).

Thus, the use of challenging text may actually engage readers in matching the written text to their oral language proficiencies, which results in more prosodic reading that enables comprehension.

Oral-reading practice

In "The National Reading Panel Report: Practical Advice for Teachers," Shanahan (2005) describes the effectiveness of oral-reading practice for improving overall reading fluency. "The National Reading Panel examined 51 studies of oral-reading fluency instruction and found a substantial pattern of evidence supporting the idea that teaching oral fluency improves reading achievement. Fluency instruction improved reading no matter how it was measured" (p. 19). Using oral-reading practices that involve guidance from teachers, peers, or parents can increase word recognition, fluency, and comprehension for students across grade levels in both regular and special education classrooms (National Institutes of Child Health and Human Development, 2000). Oral-reading practice has shown positive and equivalent effects for low-achieving readers as well as students in the normal range of abilities from grades 1 to 9.

Effective fluency instruction that increases automatic word recognition and prosody is characterized by consistent and extensive reading practice, which creates memory traces and builds a knowledge base for memory retrieval, enabling readers to develop automaticity (Kuhn, Schwanenflugel, Meisinger, Levy, & Rasinski, 2010; Logan, 1997). "When reading, learners encounter letters, words, and phrases and construct higher[-]order propositional structures[,] and each reading leaves a trace at each level of representation" (Kuhn et al., 2010, pp. 232–233). Both silent and oral reading practice, with authentic texts,

provides opportunities for students to build and strengthen the range of fluency skills needed to become proficient readers (Shanahan, 2005; Stanovich, 1986).

Shanahan (2005) identified effective methods for teaching oral-reading fluency, including repeated readings, paired reading, NIM (Heckelman, 1969), echo reading, listening while reading, and working with audio recordings of text, all of which provide quality fluency practice through oral reading as opposed to silent reading. "Research has consistently supported the positive impact of oral-reading practice, while silent reading has had less consistent positive results" (Shanahan, 2005, p. 19). Although many recommend the use of repeated readings, researchers indicate that wide reading provides a great deal of word overlap in multiple contexts, improving recognition of words as well as practice in comprehension and higher-level skills (Logan, 1997). Repeated readings, using the same words or texts, fixes students' attentional focus on lower-level aspects of reading rather than practice in higher-level skills, whereas wide reading engages students in exploration of words in varied contexts, increases background knowledge, and increases readers' ease and comfort with texts (Kuhn et al., 2010). Wide reading, with adequate support, is recommended to build automaticity, word recognition, vocabulary, and conceptual knowledge (Kuhn et al., 2010; Stanovich, 1986).

NIM

NIM, developed by Heckelman (1969), is a multisensory oral-reading fluency intervention for struggling readers that involves paired choral reading. NIM was designed for "impressing mature reading behaviors upon students" (Eldredge, 1988, p. 36). Initial studies were conducted in clinical settings with an adult and a struggling reader, sitting side by side, simultaneously reading aloud at a rapid rate using challenging texts. The voice of the adult was directed toward the student's ear. The adult used a finger to track the spoken words. This method was designed to expose struggling readers to effective reading processes and to "break the phonics-bound condition that occurs in many children who have had intensive phonics training and still have not learned to read fluently" (Heckelman, 1969, p. 281). According to Eldredge (1988), "repeated exposure to words frequently used in print probably improves the students' sight recognition of such words, which, in turn, probably improves reading comprehension" (p. 41). Heckelman (1969) tested NIM with 24 adolescents, who achieved a mean increase of 1.9 grade levels after 7.5 hours of practice over 6 weeks. The range of increases in grade levels among participants was 0.8 to 5.9 grade levels, although the levels of text difficulty were not specified. As described by Flood, Lapp, and Fisher (2005), NIM was widely researched and applied during the late 1960s through the 1980s and became an accepted strategy in fluency interventions for many students of all ability levels and ages. These interactions usually paired adults with students one-on-one.

Not all variations of NIM prove successful. In one classroom application that included varied levels of texts (Hollingsworth, 1970), eight students read 30 stories over 30 school days following along with the teacher's readings that were recorded on a wireless system. The teacher could listen in as the students read

along into microphones in a language-lab setting. One-third of the texts ($n = 10$) were one grade level below the students' levels, one-third were on grade level, and the final third were one grade level above the students' reading levels. The students were not struggling readers and the pretest–posttest comparison of reading achievement did not show a significant effect for the reading lab students when compared with the controls. Hollingsworth postulated that perhaps the lack of significant effect was due to the readers not needing the reading support and the less-personalized support of reading along with a recording, rather than a partner. However, interpretations could also include that the total time (7.25 hours) was insufficient to produce significant results or that the texts were not challenging enough to stretch the readers. Such studies show that variations of NIM include diverse features and that they need to be understood for possible nuanced effects and implications for classroom practice.

Eldredge and Butterfield (1986) modified NIM for whole-class reading practice by using student pairs—a strong reader paired with a weaker reader—who sit side by side while simultaneously reading aloud from the same book. Similar to the original NIM process, lead readers touch each word when read, running their fingers smoothly under the words. The lead readers read at a normal speed as assisted readers repeat as many words as they can. Both readers look at each word as it is read. Calling the process "dyad reading," Eldredge and Butterfield found that the paired oral reading increased student achievement and improved struggling students' attitudes toward reading. Dyad reading allowed students to effectively access and comprehend more challenging texts and increased the volume and diversity of texts read (Eldredge, 1988).

A follow-up study by Eldredge and Quinn (1988) used dyad reading with 61 struggling second-grade readers, with the student pairs reading from texts that were slightly above the struggling readers' independent reading levels. When compared to a matched control group that was instructed using traditional methods and basal readers, the paired readers more than doubled the scores of students in the control group. The result was nearly a year's greater growth in comparison to students in the control group (over a 9-month period as measured by the Gates-MacGinitie Reading Test of vocabulary and reading comprehension; MacGinitie, MacGinitie, Cooter, & Curry, 1989).

Flood et al. (2005) conducted studies using NIM with struggling readers in third through sixth grades who showed statistically significant improvements on oral- and silent-reading rates and comprehension. Flood et al. promoted the use of NIM as one of the easiest and most cost-effective methods for increasing reading fluency in struggling readers. In some schools, teachers enlist volunteers or reading tutors, and with a minimal amount of training to use NIM they can do so effectively (Brown, Mohr, & Wilcox, 2016; Eldredge, 1988). Flood et al. found that 1 hour of training provided to student teachers and reading intervention tutors enabled them to effectively conduct NIM interventions and provided them with a better understanding of the role that fluency plays in comprehension.

Similarly, students in classrooms can be trained to work together in the roles of lead readers and assisted readers. The support provided by the stronger reader enables the struggling reader to speed up the processing of text by reading phrases

and sentences rather than focusing on deciphering individual words. This procedure allows the struggling reader to focus on the messages in the text, making reading a meaningful process (Eldredge, 1988; Logan, 1997). Of importance, the dyad experience seems to help both students. As lead readers take the role of teacher or tutor, they tend to perform well for the sake of their partners; as assisted readers experience success in reading more difficult text, their confidence in their ability to access challenging texts increases (Brown, Mohr, & Wilcox, 2016).

Focus on challenging texts

In an effort to increase reading performance for our nation's students, the Common Core State Standards (College and Career Readiness Anchor Standards for Reading, 2010) have increased the focus on wider and close reading from "a broad range of high-quality, increasingly challenging literary and informational texts" (last paragraph). Educational leaders have called for research examining the use of more difficult and challenging texts as a method for increasing reading achievement (Morgan, Wilcox, & Eldredge, 2000; Shanahan, 2005; Shanahan et al., 2012; Stahl, 2012). Shanahan et al. (2012) emphasize the importance of using challenging texts in strengthening reading skills for all readers, noting that "just as it's impossible to build muscle without weight or resistance, it's impossible to build robust reading skills without reading challenging text" (p. 58). This call for the use of more challenging text begs the question of how difficult texts should be to support overall reading achievement.

Dyad reading and text levels

A meta-analysis of studies in fluency instruction that used materials at or above the participants' instructional level (Kuhn & Stahl, 2003) concluded that "our best guess is that more difficult materials would lead to greater gains in achievement, but more research is needed on this question" (p. 9). In the dyad reading study done by Morgan (1997), some second-grade dyad pairs read texts that were two grade levels above the instructional level of the assisted readers, and other pairs read texts four grade levels above the instructional levels of the assisted readers. The students read together for 15 minutes daily for 95 days. This procedure produced statistically significant results for the assisted readers, who improved their reading scores by an average of 2.73 grade levels when reading materials that were two grade levels above their instructional levels and 2.06 grade levels when using materials four grade levels above instructional levels. Thus, delayed readers, who were reading at one or two years below grade level at the beginning of the study, achieved increases in reading level sufficient to bring them to or above grade-level benchmarks after the intervention, helping to close the achievement gap for those readers.

In response to these findings, Morgan (1997) stated, "Results suggest that the difficulty level of materials used for dyad reading may make a difference; students progressed more quickly by reading frustration-level materials [in comparison to students participating in dyad reading at their instructional levels]" (p. 119). However, the study did not determine the difficulty level that might be optimal for promoting reading

progress. Significant differences in reading-level increases were not found between the two treatment groups. Therefore, "the exact point at which frustration defeats the purpose of dyad reading remains unknown" (p. 118). Morgan (1997) called for subsequent research to reaffirm the effectiveness of using difficult text for paired reading as well as to identify the point at which text difficulty undermines achievement.

Although it was conducted over a 5-month period, one limitation of Morgan's (1997) study was that as students' reading improved, they were not given increasingly challenging texts in order to maintain the assigned two or four grade levels above their instructional levels. Initial studies with NIM indicated an average increase of 1.9 grade levels in a 6-week time period. Therefore, after the first 6-week period, typical students could once again have been reading at their instructional levels due to their improved reading skills. Using interim testing every 7 to 9 weeks, which is not an uncommon practice, followed by adjustments of reading material difficulties, could result in even greater gains in reading achievement.

An additional limitation of Morgan's (1997) study, and all previously conducted studies on dyad reading, was that the impact of paired oral reading on the lead readers' achievement was never evaluated. Therefore, another question to be addressed is how dyad reading affects the lead readers' fluency, comprehension, and reading levels. Performing pretest and posttest assessments with lead readers could provide important information regarding achievement for lead readers.

With these limitations in mind, the purpose of this study was to determine whether oral-reading practice with the support of a stronger peer, using materials at various levels, could produce greater learning benefits for lead and assisted readers. In addition, promoting, monitoring, and assessing prosody should highlight additional outcomes of oral partner reading designed to promote fluency, even with difficult texts. Indeed, as noted by Kuhn et al. (2010), "prosody should be measured whenever reading fluency is measured" (p. 238). Therefore, the design of this study also targeted the effects that dyad reading has on reading prosody in both assisted and lead readers.

The following questions guided this study:

1. What level of challenging text provides the greatest growth for struggling readers in reading level, accuracy, rate, and comprehension using dyad reading?
2. How does dyad reading impact the reading achievements of stronger readers serving as lead readers?
3. How does dyad reading influence the prosody of both lead and assisted readers?

Methods

Participants

The participants in the study were 142 third-grade students in an upper-middle-class school in a suburban community in the U.S. mountain west region. The participants ranged from 8 to 9 years of age and included 68 (48%) females and 74 (53%) males. The participants were assigned to one of six classrooms in the same school. All students received traditional reading instruction using the McGraw-Hill *Wonders* core reading program. One class of 25 students, serving as the control group, received the traditional reading instruction and 15 minutes per day of independent free reading time. All other students engaged in 15 minutes of dyad reading in addition to their regular reading instruction. Three of the classrooms that participated in dyad reading were part of a Spanish dual-language immersion program, but their reading instruction and dyad reading were done in English.

The school hosting the study operates on a year-round schedule. The ethnic distribution of the school was 89% White, 6% Hispanic, 2% Asian, 1% Black, and 2% Pacific Islander/American Indian/other at the time of implementation. Economic distribution included 11% free lunch–eligible and 9% reduced lunch–eligible.

Classroom teachers

The classroom teachers for the treatment groups had 4, 5, 8, and 29 years of teaching experience ($M = 11.5$). Three of these teachers held bachelor's degrees, and one teacher held a master's degree. The first author of this study was a teacher in one of the classrooms participating in the study. The teacher for the control group had 7 years of teaching experience and a bachelor's degree. All of the participating teachers were female.

Instruments

The Scholastic Reading Inventory (SRI; Scholastic, Inc., 2006) and Dynamic Indicators of Basic Early Literacy Skills (DIBELS; https://dibels.uoregon.edu/) assessments were administered to all students by the classroom teachers or the school's reading specialists according to school policy. The SRI is a routine assessment that the district requires be administered to all students at the beginning of the school year and at the end of each term. The SRI measures silent-reading comprehension and provides a comprehension Lexile score. The district also requires both DIBELS-ORF (measuring rate and accuracy) and DIBELS-DAZE (measuring fluency and comprehension) as standard assessments administered to all students in the school at the beginning of the year, midyear, and at the end of the year. The DIBELS-ORF indicates the number and percentage of words read correctly from a grade-level passage in 1 minute. The DIBELS-ORF includes a retell measure wherein the student is asked to tell what he or she has just read. As the student retells the story, the test administrator records the number of details the child provides. The retelling of the story is then rated on a scale of 1 to 4 based on the details provided. A score of 1 indicates that student provided two or fewer details. A score of 4 indicates that the student provided three or more details in a meaningful sequence that captures the main ideas of the story.

The DIBELS-DAZE is a timed, silent-reading maze test that was administered in a group setting with students given a passage that had a blank in each sentence. Students selected a word from among three options to fill in the blank that made the most sense considering the story. The number of answers attempted in 3 minutes serves as an indicator of fluency. The number of correct answers indicated the students' comprehension of the passage. Initial scores on these measurements were obtained during the first 2 to 3 weeks of the school year and used as pretest scores in this study.

The Multidimensional Fluency Scale (MFS; Zutell & Rasinski, 1991) evaluates prosody based on expression (measured as appropriate volume, phrasing, smoothness, and pace). In order to make the MFS testing more standardized, all of the participating teachers were provided with identical binders that contained 13 Lexile-leveled reading passages and included both narrative and informational passages. The lower–Lexile level passages were scored at 30, 90, 150, and 200 points. Thereafter, the readings increased at approximately 100 Lexile increments through 1100 points. The reading passages were all downloaded and printed from www.Readworks.org. The classroom teachers were trained together and then administered the MFS to the students in their respective classrooms during the first 3 weeks of school. The teacher of the control group did not obtain MFS scores for her students.

Matching students and text levels

At the outset of the study, students were ranked by proficiency levels according to the results of their initial SRI assessments. These initial SRI scores ranged from 0 to 907L with a mean of 495L. The classroom teachers paired students by separating the list at the median point to create two lists for each classroom, essentially an upper half and a lower half. Teachers then matched the students at the top of each list with each other, the second students with each other, and so forth until each child had a partner. Adjustments for behavior and personality were made as deemed appropriate by the teachers, but each assisted reader was paired with a lead reader of higher ability than his or her own. The differences in reading levels between reading partners ranged from one to five grade levels. Because 78 of the 117 students in the treatment group were reading below grade level at the beginning of the study, 22 of the 61 students assigned to be lead readers were initially reading below the SRI proficiency level but were stronger readers than their assigned partners. These partnerships were then randomly assigned to one of three groups:

- Students in Group A participated in dyad reading using materials two grade levels above the assisted readers' current reading levels.
- Students in Group B participated using materials three grade levels above the assisted readers' current reading levels.
- Students in Group C participated using materials four grade levels above the assisted readers' current reading levels.

The grade levels of the reading material were based on SRI grade-level Lexile proficiency bands (Scholastic, Inc., 2007). The lead readers' current reading levels (the upper half of students in each classroom) were not used to assign reading materials. In other words, the lead readers simply read the texts assigned to their partners, which meant that the text difficulty may or may not have been at the lead reader's own SRI-determined level. The first author of this study assisted teachers in standardizing the stratified random sampling procedure as well as the SRI Lexile-level assignments for placement of students at two, three, and four grade levels above the instructional levels of the assisted readers. In a few cases when there was an odd number of students or if students were absent, an assisted reader was assigned to read with two lead readers.

Training procedures

Participating teachers were given a copy of the Morgan, Wilcox, and Eldredge's (2000) dyad reading research to read prior to the beginning of this study and received 1 hour of dyad reading training that included a question-and-answer session conducted by two of the researchers. Students in each treatment classroom were trained by their classroom teachers in dyad reading and allowed opportunities to practice. The following student rules for dyad reading were posted in each classroom:

- Share one book
- Sit side by side
- Track with one smooth finger
- Eyes on words
- Two voices
- Not too fast, not too slow
- Write down crazy words
- Have fun

Materials

Each student pair was given a book bin that contained a minimum of three books, including a mix of informational and narrative texts, at the determined difficulty level based on the Lexile rating of the text. Each book bin also contained a notepad for students to record words they could not decode or did not understand (explained below). The texts were Lexile-leveled books that supplemented the third- through sixth-grade levels of the *Wonders* basal reading program along with books from the school's supplemental guided reading library and each teacher's classroom library. Books that did not have an indicated Lexile level were leveled using the website Lexile.com. The first author of this study helped the teachers set up their initial book bins for the dyad pairs and locate leveled reading materials for students' book bins. She was also available throughout the study as teachers had questions or needed further assistance.

Procedures

Student pairs worked together to select books from their bins to read together. Because students were reading challenging texts, there was a concern that students would interrupt their reading to ask teachers for help with unfamiliar words. To help students maximize their reading time, it was decided that teachers would instruct students to watch for what they called "crazy words." As they were reading, students were encouraged to record words that they could not decode or did not understand. After the 15-minute reading session, students wrote their session's crazy words on the whiteboard. Throughout the day, as breaks in the classroom schedule allowed (e.g., before or after recess or lunch or during transitions between activities), teachers modeled decoding the "crazy words" two or three at a time, directed students in identifying roots and affixes, and provided child-friendly definitions of the words. Although interesting in its managerial function and promotion of new vocabulary, this portion of the treatment was not measured and is not reported further in this study.

Teachers were allowed to schedule the 15-minute daily dyad reading sessions at any time during the day, according to their own preferences and classroom schedules, as long as they were consistent. Some classrooms used the beginning of the day, and some classrooms read after lunch. Teachers closely monitored the materials provided, student interactions, and adherence to

the procedures. Students read with the same partner for 8 to 9 weeks unless problems developed in the dyads that required reassignment. Reassignments were rare and related to personality conflicts between readers, behavior problems that required students to be moved to other seats, and one student moving to another school. All students received new reading partners at the beginning of each school term; therefore, each student had at least three different reading partners. All of the participants remained in their assigned roles as either assisted reader or lead reader throughout the study. Dyad pairs read 15 minutes each day for 95 sessions. Due to the school's year-round schedule that utilizes staggered starts, the first class completed the 95 sessions in mid-February, and the final class completed 95 sessions the second week of March.

Interim testing

Interim tests using the SRI were conducted at the end of each term (i.e., after 40 days and 80 days of dyad reading) with the final assessment conducted after 95 sessions to allow comparison with the Morgan (1997) study. Conveniently, the school was preparing for parent–teacher conferences around the 95-day point; therefore, the tests were administered at that time in order to provide data for the conferences and the study. At the end of each term, the first author met with the teachers to help them reassign Lexile levels and dyad pairs to ensure that adjustments were made according to the established criteria. All reading partners and assigned reading levels were changed at the beginning of each term based on the results of each SRI assessment and followed the procedures described in the initial partnership-assignment procedures. Again, lead readers and assisted readers remained in their assigned roles throughout the study, and assignments to treatment groups did not change. That is, assisted readers randomly assigned to read texts at two, three, or four grade levels above their instructional levels continued to do so with their new lead readers. Because the text difficulty level was a function of the assisted readers' Lexile level, the lead readers in the study were exposed to varying levels of text difficulty, from reading at their instructional level to reading texts at more challenging levels dependent on those of their assisted readers.

Analyses

Posttests were administered after 95 days using the same assessments given as pretests. Results of each assessment were analyzed to determine the differences between treatment and control groups as well as to make comparisons among the treatment groups and lead and assisted readers by group (groups A, B, C). The results were also compared to those from Morgan's study (1997) to determine whether the term-end adjustments to maintain assigned reading difficulty resulted in statistically significant differences among the assisted-reader group.

To understand the reading growth made by these third-graders, initial comparisons of mean scores led to using multilevel modeling (MLM) with the R statistical software (R Core Team, 2016; for specific packages used see Barrett & Brignone, 2016, and Bates, Maechler, Bolker, & Walker,

2015) to test for the effects of the treatment for the different groups of readers. Because there were multiple testing administrations for each participant, MLM, specifically mixed effects modeling, was warranted. Although methods such as repeated measures analysis of variance could have been used, the use of MLM provides greater flexibility and eased assumptions of sphericity (i.e., all within-group variances are equal). MLM accounts for the shared variance within subjects while modeling between-subject differences. Each of these models included a random intercept by participant to control for the lack of independence inherent in a repeated measures study (all other effects were fixed effects). For SRI Lexile scores, the model consisted of an interaction of time and treatment, as well as time squared and treatment, which allowed for the effects of the treatment to depend on time, potentially in a nonlinear fashion. For all other outcomes, an interaction of time and treatment was tested (i.e., no time squared interaction given only two time points). In addition, pairwise comparisons were used to test for significant differences among the five groups, four of which participated in the dyad reading. Gender was included as a covariate in each of the models.

Results

This study was designed as an extension of an earlier study using different levels of texts during oral reading among younger readers (Morgan, 1997). Specifically, this study randomly assigned lower-performing third-graders to read books (with higher-performing peers) that were two, three, or four grade levels above the determined level of the weaker readers to determine how the reading of challenging texts with a stronger reader might support reading achievement. This study utilized preassessment and postassessment measurements of oral-reading fluency and comprehension and monitored reading growth via the SRI at four junctures across 95 school days (approximately a half-year of school). The intermediate administrations of the SRI allowed teachers to increase the Lexile difficulty of the shared texts to ensure that partners were consistently using books at two, three, or four grade levels above the level of the assisted readers. This use of intermediate assessments and text adjustments were not included in the Morgan (1997) study and afforded a more developmental analysis of reading for the assisted readers as well as for lead readers (including some less-than-proficient readers) who were not tested in the previous study.

Posttest results

The results of this study are encouraging because all student groups made measurable reading gains. Of course, this result is expected due to their being in school, receiving literacy instruction, and developing as readers. However, the mean scores for students participating in the paired oral-reading dyads exceeded those of the control group across measures. The use of challenging texts in the dyad reading format seemed to support the reading growth of all the readers regardless of whether the shared text was two, three, or four levels above the instructional levels of the assisted readers. Girls outscored boys on all

measures, but these differences were not statistically significant and thus will not be addressed further.

The preassessment and postassessment means, standards deviations, and gains stratified by group across the assessments are shown in Table 1. The data show that the lead readers began and ended the study with the highest mean Lexile levels, but the assisted readers, using various levels of challenging texts, made twice the gains the lead readers made on the SRI and essentially tripled the gains of the control group by day 95. Thus, although not catching up to the more proficient lead readers, the assisted readers achieved greater gains than the leads or those in the control group. (It is important to note that the control group included the typical range of proficient and less proficient readers. Thus, the control group represents the typical mix and associated scores of a regular third-grade classroom.) Mean SRI Lexile scores for the control group were above that of the assisted reader groups (which all consisted of weaker readers) but below that of the treatment groups overall (that included the mix of lead and assisted readers) during the study. The control group showed relatively good growth on accuracy but weaker gains on reading rate, fluency, and comprehension. No prosody (MFS) data were available from the control group.

SRI results by group

Combined SRI means for gains in Lexile scores by group are shown in Table 2. These means reflect the gains across all students separated as treatment and control groups. At the beginning of the year, the mean Lexile score for the treatment group (all dyad readers) was 494.4 and the control group mean was 497.8, $t(35) = 0.07$, $p = .947$, suggesting no significant difference between the groups on the SRI pretest. At the end of the study, the combined treatment groups' SRI mean Lexile score was 676.7 compared to the control group's mean of 583.0, $t(32) = 1.95$, $p = .060$. According to the district's benchmark and SRI indicators (Scholastic, Inc. 2006, 2007), the greater increase by the dyad readers of 94 Lexiles is equivalent to at least a 6-month growth differential for the students participating in paired oral reading that they accomplished in approximately half a year of third grade.

For SRI Lexile scores (the only measure administered at baseline, 40 days, 80 days, and 95 days), both the interaction of day of test and level of text and the interaction of day of test squared and level of text were significant in a joint hypothesis test, $\chi^2(8) = 63.8$, $p < .001$. This finding suggests that the effect of the treatment depended on the time of measurement (discussed below). Figure 1 shows the scores by treatment type, showing that the treatment groups performed similarly across the study while the control group, which consisted of a mix of higher- and lower-proficiency readers, made modest gains that tapered off by midyear. The lead readers showed growth similar to the assisted readers in their various groups.

Table 3 presents the tests of significance for the interaction effects across measures, indicating that the growth of the participants in each measure differed between the treatment and control groups. As for the SRI outcome, it is clear that the treatment groups benefited from the dyad reading in ways that the control group did not from their regular reading program. Similarly, for the other measures (see Figure 2), it becomes clear that the treatment groups grew faster than the control group on all measures but the accuracy subtest.

Table 1. The unadjusted means, standard deviations by administration, and gains, stratified by group for SRI, rate, accuracy, retell, DIBELS-DAZE, and MFS.

Outcome	Leads (n = 61)	Group A: 2 above (n = 21)	Group B: 3 above (n = 18)	Group C: 4 above (n = 17)	Controls (n = 25)
SRI					
Baseline	659.59 (140.0)	310.95 (168.8)	297.33 (181.0)	337 (147.4)	497.84 (232.9)
40 days	706.52 (132.7)	396.48 (180.3)	385.5 (234.8)	436.59 (180.2)	557.56 (217.2)
80 days	754.1 (131.4)	503.67 (161.5)	508.33 (208.1)	529.82 (173.3)	562.56 (223.3)
95 days	785.64 (141.1)	563.1 (133.8)	545.44 (179.1)	565.65 (173.7)	583 (224.0)
Total gains	126.1	252.1	248.1	228.7	85.16
Rate					
Baseline	115.03 (29.0)	78.48 (25.8)	79.28 (29.1)	84.41 (31.9)	92.56 (35.5)
Posttest	134.71 (31.0)	99.29 (24.4)	91.89 (30.4)	99.41 (34.5)	102.4 (30.7)
Total gains	19.3	20.8	12.6	15.0	9.8
Accuracy					
Baseline	97.75 (1.86)	93.76 (5.46)	92.67 (9.59)	95.65 (3.16)	94.84 (4.58)
Posttest	98.28 (1.95)	96.43 (4.43)	95.0 (5.65)	96.53 (2.45)	97.08 (3.23)
Total gains	0.5	2.7	2.3	0.9	2.2
Retell					
Baseline	3.27 (0.71)	2.48 (0.98)	2.11 (1.18)	2.59 (1.12)	2.64 (0.86)
Posttest	3.3 (0.79)	2.9 (0.94)	3.17 (0.92)	3.06 (0.97)	2.92 (0.86)
Total gains	0.0	0.4	1.1	0.5	0.3
DIBELS-DAZE					
Baseline	13.77 (6.02)	8.48 (5.38)	9.06 (5.85)	10 (5.75)	8.04 (6.05)
Posttest	24.75 (7.96)	18.14 (6.26)	15.56 (7.52)	18.47 (6.64)	12.76 (6.82)
Total gains	11.0	9.7	6.5	8.5	4.7
MFS					
Baseline	12.1 (2.38)	8.81 (2.34)	9.43 (2.59)	9.38 (2.36)	—
Posttest	14.67 (1.24)	13.19 (1.83)	13.64 (1.69)	13.92 (1.32)	—
Total gains	2.6	4.4	4.2	4.5	—

Note. SRI = Scholastic Reading Inventory; DIBELS-DAZE = Dynamic Indicators of Basic Early Literacy Skills measure of fluency and comprehension; MFS = Multidimensional Fluency Scale.

Table 2. Mean gains in scholastic reading inventory lexile scores by combined dyad and control groups.

|	Day 40	Day 80	Day 95
Combined dyad	80.05	172.76	213.77
Control	59.72	64.72	85.16

Pretest and posttest comparisons

Adjusted gains in the DIBELS subscores that measured rate, accuracy, and retelling and the DAZE for treatment groups in comparison to the control group are also shown in Table 1. All interactions of test (pretest/posttest) and text level for rate, accuracy, retell, DIBELS-DAZE, and MFS were significant and are shown in Figure 2. Group A, the assisted readers reading two grade levels above their current Lexile levels, gained more than the other groups on the SRI, rate, and accuracy, although the differences between the groups were not statistically significant.

Table 4 compares the DIBELS-based measurements by combined treatment and control groups. Notably, the control group showed greater gains in oral-reading accuracy as measured by DIBELS-ORF. Otherwise, the gains favor the dyad readers. Notably, all groups, including the controls, achieved mean accuracy levels greater than 95% on grade-level materials by day 95 and the dyad readers' mean for the comprehension task (DIBELS-DAZE) was nearly double that of the control group.

Analyses of groups and text difficulty

One of the questions guiding this study was whether reading texts of different assigned difficulty levels would influence the reading development of third-graders in reading dyads. The data present a confounding picture to answer this question. As noted, mean SRI gain scores for all treatment subgroups were significantly better than those in the control group. However, the gains among dyad groups across administrations of the SRI were not significantly different (the pairwise comparisons of the treatment groups' total gains all had *p* values > .05). In
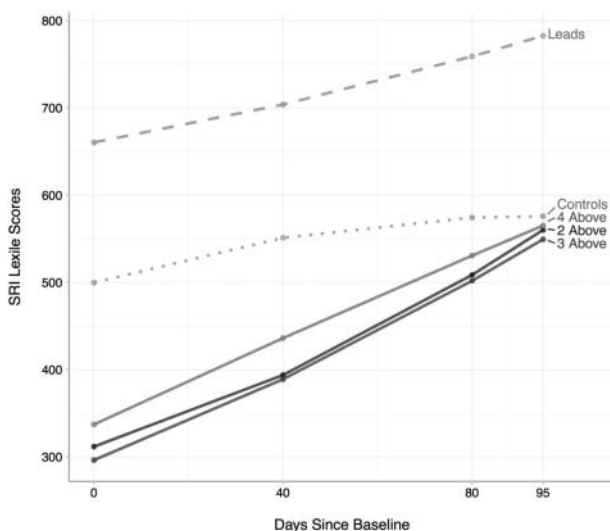
Figure 1. Gains in Scholastic Reading Inventory (SRI) level by group and administration.

other words, differences between groups A and B, A and C, and B and C at 40, 80, and 95 days were comparable. Considering all measures, each group performed better than others in some outcomes (i.e., group A produced good results in reading rate, accuracy, and prosody; group B showed greater growth on the retell measure; and group C produced great growth on retell, comprehension, and prosody), but these differences were not significant.

These results may be due to a lack of necessary power to detect differences across time given the smaller numbers of students in subgroups. Therefore, it is difficult to determine which level of challenging text was most appropriate for increasing the reading achievement of these students. That said, when considering results for all the measurements, it appears that those students reading two levels above their instructional levels, with the assistance of their lead readers, made the most robust gains, showing the greatest mean gains on three critical measures: the SRI, rate, and accuracy assessments. In addition, DIBELS-DAZE scores for this group were above those of the other assisted readers and control group and comparable to those of the lead readers. The assisted-reader groups made comparable gains on the prosody measure. When taken together, these data indicate a possible advantage for using texts two grade levels above to best support the reading growth of less proficient third-grade readers. This conclusion is given cautiously and is discussed further below.

Comparison with Morgan's (1997) study

Given that this study was, in part, a response to Morgan's (1997) call for more research, it is important to compare these findings with those she reported. Morgan (1997; Morgan et al., 2000) reported grade-level increases of 2.73 grade levels for students reading at two levels above their instructional levels and 2.06 grade levels for students reading at four levels above instructional levels. This current study found that, when converting Lexile levels to grade levels using the guidelines selected by the school (Scholastic Inc., 2007), groups A through C increased their Lexile levels by 2.52, 2.48, and 2.28 grade levels, respectively. These increases are similar to results of the Morgan (1997) study and corroborate her findings. Even if using a more conservative estimation of annual growth (Knutson, 2011) that expects an annual 160L increase for third-graders, the assisted readers in this study exceeded that goal by midyear and by 92L, 88L, and 69L (beyond the 160L goal), respectively.

Table 3. Tests of significance of the interaction effects between groups by days/test administration.

Outcome	Interaction effect	χ^2	*p* value
SRI	Level x days and level x days^2	66.2	< .001
Rate	Level x test	12.9	.011
Accuracy	Level x test	13.7	.008
Retell	Level x test	17.2	.002
DIBELS-DAZE	Level x test	17.2	.002
MFS	Level x test	13.4	.001

Note. SRI = Scholastic Reading Inventory; DIBELS-DAZE = Dynamic Indicators of Basic Early Literacy Skills measure of fluency and comprehension; MFS = Multidimensional Fluency Scale.
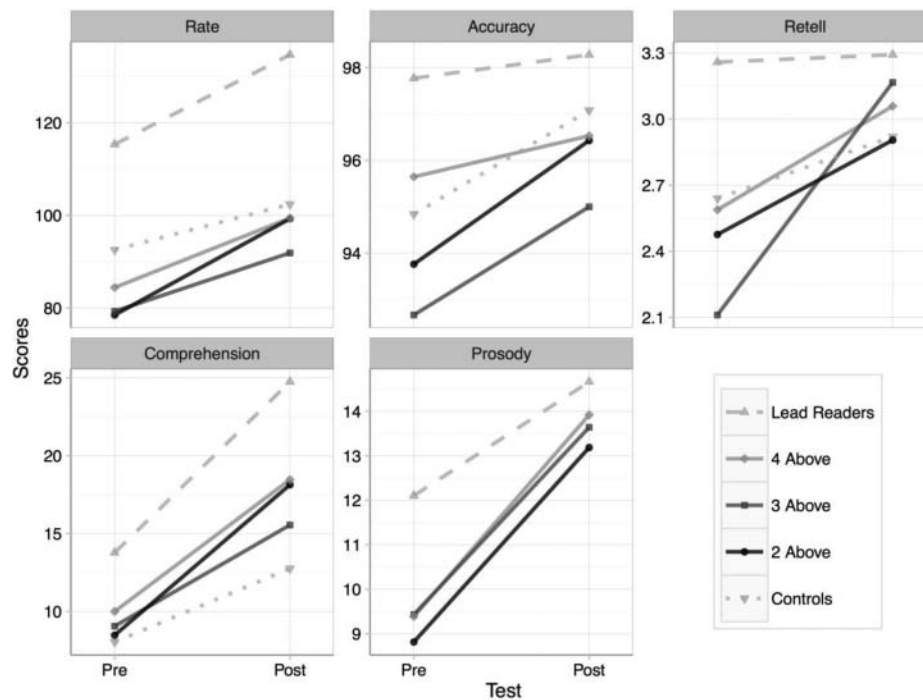
Figure 2. Gains from pretest to posttest for related measures by treatment and control groups.

The control group's mean Lexile growth of only 85L reflects a more typical half-year's growth in reading.

Comparing proficient and less proficient readers by group

An interesting challenge in the configuration of this study involved the pairing of third-graders within classrooms to support the reading development of weaker readers while engaging more proficient readers. As is typical, these classrooms included a variety of more and less proficient readers. To form well-matched dyads in which stronger readers led the oral reading with weaker peers, teachers used students' beginning-of-the-year SRI Lexile levels. Dividing the groups of students in half to determine who would serve as leads and who would be assisted did not mean that all the students in the upper half on each classroom list were truly proficient readers at the start of the year. It simply meant that they were stronger readers (within their classes) than their assisted partners. In fact, a post hoc analysis indicated that 22 (36%) of the 61 lead readers scored below what the district deemed as proficient (SRI Lexile score of 610) at the start of the school year. (The mean Lexile level for the proficient leads was 746, with a range of 410 to 907, in August, while that of the below-proficiency lead readers was 506, with a range of 410 to 594.) Of the 22 less-than-proficient lead readers, only 5 scored below SRI proficiency level at the end of the study. These less-than-proficient readers had an

Table 4. Mean gains on DIBELS subscores by combined dyad and control groups.

	Rate	Accuracy	Retell	DAZE
Combined dyad	16.9	1.6	0.5	8.9
Control	9.8	2.2	0.3	4.7

Note. DIBELS = Dynamic Indicators of Basic Early Literacy Skills; DAZE = measure of fluency and comprehension.

average SRI score of 721 by the end of the study, with a range of 534 to 944, an average increase of 215 Lexile points in a half-year.

This study included a pragmatic approach to conducting paired oral reading in classrooms, which must be taken into consideration when evaluating the benefits of dyad reading on different kinds of readers. To include all students in the reading dyads, some less-than-proficient readers were assigned the role of lead reader and led the oral reading with peers who were even less proficient. This may be seen as a positive element and outcome, given their gains and that such a distribution of readers would likely be common in classrooms using oral reading practice with student pairs.

The SRI gains of proficient readers (determined as > 610 by SRI Lexile score pretests) in both the treatment and control groups were not significantly different, $\chi^2(1) = .23$, $p = .82$, indicating comparable growth for the better readers during the first half of the school year. However, those initially identified as below-proficiency assisted readers across treatment groups had essentially double the mean gains of the below-proficiency readers in the control group. In other words, readers deemed less than proficient at the beginning of the year greatly benefited from the dyad oral reading by midyear.

Figure 3 presents the adjusted gains of the below-proficiency lead readers and the below-proficiency readers in the control group. The SRI gain scores for below-proficiency readers in the treatment group were significantly different than those of the control group in a linear test of the interactions, $\chi^2(2) = 13.2$, $p = .001$. In fact, the overall trajectories of the gains clearly diverge across time. Thus, serving as lead readers did not hinder the more proficient readers and, importantly, below-proficiency readers, whether lead or assisted, appeared to benefit from the dyad reading based on SRI scores. These findings provide a nuanced answer to the question of how paired oral
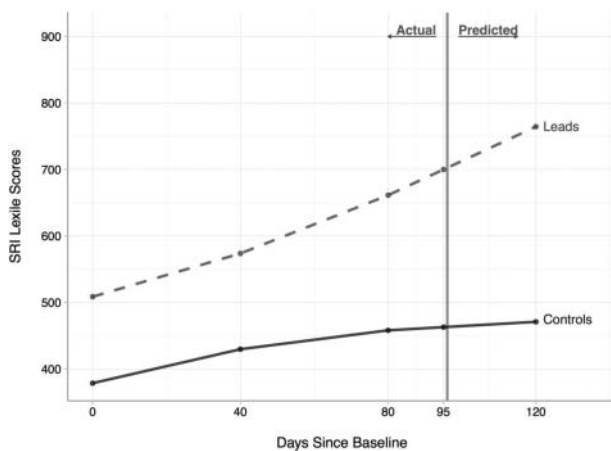
Figure 3. Assessed and predicted Scholastic Reading Inventory (SRI) Lexile scores for below-proficiency leads and below-proficiency readers in the control group by administration.

reading supports lead readers. Essentially, proficient lead readers made typical progress and, thus, were not hindered in their reading development. Less proficient readers serving as lead readers made increases over time, while their less proficient peers in the control group had diminishing gains, indicating that serving as a lead reader can be a powerful experience for many weaker readers.

Prosody results

The third question guiding this research sought to extend Morgan's (1997) study by measuring and comparing the prosody of lead and assisted readers. Pretesting and posttesting using the MFS as a measure of prosody show comparable increases among the assisted readers, with lesser gains for lead readers. In other words, the initial gap between lead and assisted readers narrowed by the midyear assessment, when the study ended. However, the lead readers were more prosodic at the outset, giving them less room for improvement as measured by the MFS. It is noteworthy that the lead readers were reading texts not selected to challenge them, so any increase in prosody scores is likely related to their roles as lead readers in the dyads or the value of oral reading in general. Of interest, assisted readers in group C, reading texts of the greatest challenge, made the greatest gains in prosody, which aligns with previous research indicating that the more challenging the text, the more prosody is used to interpret the text (Benjamin & Schwanenflugel, 2010). In this case, the prosody challenge posed by the most difficult texts seems to have yielded greater prosody gains on the grade-level assessment. Future research could analyze the subscores of the MFS or a similar scale to understand how young readers employ aspects of prosodic reading to successfully read and comprehend challenging texts.

Discussion

Key findings

In some respects, the implications of this study and its results are straightforward: Third-graders participating in 19 weeks of oral reading with peers for 15 minutes a day in their own

classrooms made significant progress in several measures of reading achievement when compared to students in the same school who did not participate in dyad reading. Moreover, student partners made notable progress in both oral-reading fluency and comprehension with challenging texts. It appears that, with support of more proficient peers, third-graders can successfully read materials determined to be two, three, or four grade levels above their identified reading levels. This study supports the claim that students can extend their reading abilities when reading challenging texts, as determined by Lexile level, with the help of more capable peers.

Additional claims are less straightforward. Determining the optimal level of challenge in texts is less clear because the classroom-administered assessments rendered some conflicting results and the groups' trajectories varied. It appears that group A, students reading books two grade levels above their instructional levels, made the most progress on comprehension (as measured by SRI tests) between days 80 and 95 and across the full 95 days (as shown in Figure 4). This is an important finding because it attends to concerns about reciprocity between fluency and comprehension. However, group B students (who read books three levels above) made the most progress on the SRI between days 40 and 80, and group C students (who read books four levels above) made the greatest SRI gains between day 0 and Day 40. Thus, groups reading texts of varying difficulty show varying surges in their reading development, which is an enigmatic result. In addition, Figure 5 shows the varying trajectories projected out to day 120, which would be a more consistent comparison with the other SRI administrations (i.e., 40 days apart). The predicted trajectory indicates that group A (reading two levels above) might continue to experience the greatest gains as the dyad reading continued.

Another key finding is that the lead readers, who provided support for weaker readers and whose own reading levels were not used to select materials for the dyads, did not suffer in their role as leads. Their own reading levels increased significantly; they maintained their advantage on all measures except on the retell assessment, one measure of comprehension. Although this particular finding is not easy to explain and may be related to the assessment measure used, it allays fears that lead readers might be held back if consistently assisting lower-performing
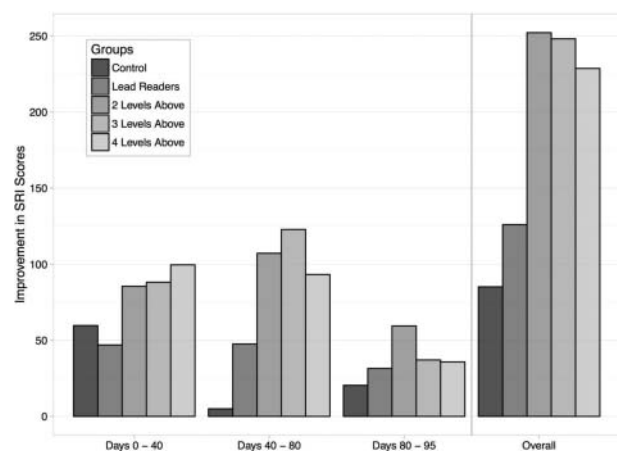

Figure 4. Summary of Scholastic Reading Inventory (SRI) gains by group and administration.
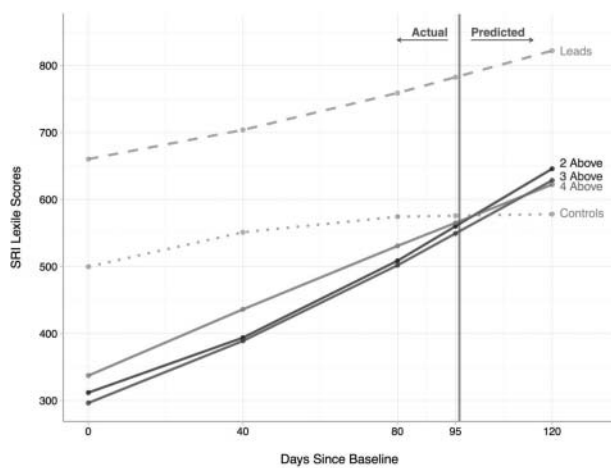
Figure 5. Assessed and predicted Scholastic Reading Inventory (SRI) Lexile scores from baseline to day 120 by group and administration.

peers. The fact that, in this study, reading levels were assessed several times and the levels of texts were adjusted to maintain the challenge for the assisted reader may help explain the shared growth of the lead readers. That is, although the lead readers' reading levels were not considered when determining the level of texts used during the dyad reading sessions, the materials that they read with their less-proficient peers increased in difficulty every 40 days. Together, the key findings substantiate the value of dyad reading with challenging materials that are adjusted intermittently to maintain challenge, at least among third-grade students.

Critical insights

Data for the students in this study, as measured by the SRI, evidence a plateau among control group students and surges of development among the treatment groups. These group surges varied by level of text difficulty and may warrant attention in future research. It is not known whether the differential trajectories or increases in Lexile levels among groups across administrations are a function of this group of students or their grade-level reading characteristics or whether there might be a developmental aspect that could be a factor in using challenging texts to improve students' oral-reading fluency. The use of four administrations of the SRI assessment provided the data to indicate possible surges and plateaus in reading growth. Revealing varying growth patterns affords a challenge to researchers and teachers in understanding ways to support reading growth, particularly among students who are in the process of moving through the transition between primary and intermediate grades. Such use of formative assessments can be part of a flexible approach to monitoring reading levels and could prevent students from lingering at a level that is too easy for them for longer than necessary. Of course, teachers must also consider whether the potential benefits outweigh the time required to test so frequently and how testing can be used flexibly to effectively track student growth and keep students challenged in their reading practice.

In this study, both proficient and some below-proficiency readers were given the opportunity to serve as lead readers who assisted weaker readers in accessing challenging texts. It

appears that this opportunity benefited those readers in significant ways, which is consistent with other research showing that students improve when they are placed in the role of tutor or teacher (Paquette, 2009). Students in the control group did not experience this opportunity. In fact, the proficient readers in the control group made the fewest gains overall on the SRI, which suggests that they might have also benefited from the opportunity to be lead readers. It would be of interest to determine whether the control students' and assisted readers' growth would have been positively influenced had they been given the opportunity to work with peers as lead readers during the latter half of the year. Another option might be to allow less-proficient third-graders to act as lead readers for first- or second-graders.

It must be acknowledged that one goal of the study was to relate improved oral-reading fluency with improved comprehension, which is typically measured via silent reading. The DIBELS retell measure involves asking the reader to restate what was read orally in the passage during the timed-reading assessment. The SRI and DIBELS-DAZE assessments involve silent reading and selected responses to measure comprehension. The DIBELS-DAZE test is a timed maze test that requires students to read and select the best of three words to complete sentences, indicating their knowledge of vocabulary and comprehension of the passage. The SRI assessment requires students to read online and select answers to multiple-choice questions. Using silent reading to measure effects of oral-reading practice and the relationship to comprehension is problematic but also a pragmatic approach for classroom-based studies. Although the use of three different measures of comprehension strengthened this study, any conclusions are based on the merits and constraints of these assessments. The use of other comprehension measures may have yielded different results and influenced the conclusions about how oral-reading fluency practice supports students' comprehension of texts.

Limitations

This replication study incorporated modifications and enhanced the design of previous research. This study's results support dyad reading using challenging texts. The study, however, is limited by its sample size, especially when the treatment group students, although randomly assigned, were divided into lead readers and three subgroups whose size ranged between 17 and 25 in order to be matched with the lead readers ($n = 61$). In addition, the control group consisted of only one classroom of 25 students. Another limitation in interpreting this study's results is that a majority of these students represented a higher SES. Replicating this research in more diverse schools and populations and with larger sample sizes would be important in informing the field.

The MFS was used as a measure of prosody, although the scale and its criteria do not include the term *prosody*. However, the criteria of the MFS (i.e., expression and volume, phrasing, smoothness, and pacing) are constituents of prosodic reading (Kuhn et al., 2010). The MFS has been used to measure prosody in other studies (Rasinski, Rikly, & Johnston, 2009). A different scale or an assessment targeting prosody specifically might have yielded different results. Unfortunately, in this study, there

were no data on the MFS for the control group. Having that information would have yielded a more thorough comparison with the treatment groups. Without such data, the only conclusion is that the dyad reading with materials that challenged the assisted readers appeared to improve the reading prosody of both lead and assisted readers. In fact, as measured by the MFS, the more challenging the level of text, the greater the prosody gains among the assisted readers. The lead readers also made gains (2.6 points) in prosody even though the texts were not selected to challenge them and despite their higher prosody scores at the beginning of the year.

In this study, students were trained to notice unfamiliar words and record them for informal analysis with the teacher later in the day. This instructional element was not scrutinized, but could be in future iterations of dyad reading. Another limitation of this study that could be considered in subsequent research would be a measurement of word-reading skills. Improved word recognition has been correlated with fluency practice. Dyad reading provides struggling readers with repeated visual and auditory exposure to words, hopefully increasing word recognition over time (Kaskaya, 2016; Kuhn, Schwanenfluegel, Meisinger, Levy, & Rasinski, 2010; Stahl & Kuhn, 2002). Therefore, future studies could measure word recognition growth as a factor supporting comprehension, fluency, and reading achievement.

Conclusion

Implementing dyad reading is a relatively easy and practical activity for teachers wanting to include peer interaction and daily oral reading as elements of their literacy programs. The accessibility of leveled texts facilitates the selection of reading materials, and teachers can feel comfortable that reading with a partner is supportive of both weaker and stronger readers. Although this was not a formal part of the study, all of the teachers who participated in this study acknowledged the impact of dyad reading on the reading performance of their students. The teachers reported that classroom experiences with paired oral reading were positive because the students had increased social interaction in connection with reading experiences. Comments from parents at end-of-term conferences revealed positive reactions to their children's increased reading scores. Some parents described their children as having an increased interest in reading at home. All but one class in the study continued dyad reading after the conclusion of the research, and all of the teachers who participated in this study expressed the intention of using dyad reading in their classrooms the following school year. The teacher of the control group, upon seeing the positive results, also planned to use dyad reading during the next school year. Discussions among faculty resulted in other teachers in the school seeking information about the study, adopting the practice in their own classrooms, and reporting positive results.

Attitudes of the students were not explored in depth in this study, but students were given writing prompts by teachers who were interested in their responses to dyad reading. When responding to the written prompt "What do you like about dyad reading?" student responses included "you can read with someone and reading with someone is really fun"; "we get a chance to read with our friends and sometimes we find the books very interesting"; and "I like learning new things like knowledge, learning new words." When responding to the prompt "What don't you like about dyad reading?" typical student responses included "sometimes your partner will read too fast or too slow"; "we don't get to choose our partners"; and "sometimes your partner doesn't want to read a book you want to read." Although there were some exceptions, most of the students gave positive responses and said they would like to continue dyad reading. These positive affective comments are consistent with other research on dyad reading (Morgan, Wilcox, & Eldredge, 2000; Klvacek, 2015).

Implementing dyad reading with texts that challenge young readers was shown here to be a powerful contributor to overall reading achievement for the third-grade students who participated in this study. Dyad reading seems to be a practical intervention that can show positive results in a relatively short time, which may help educators as they address the lack of progress on national assessments and high dropout rates. Although achievement in relation to the level of text difficulty, as based on Lexile level, did not produce statistically significant differences, there were statistically significant differences in achievement between the combined treatment groups and the control group. Therefore, the benefits of providing students with support as they encounter challenging texts has been demonstrated in this and related studies using similar practices. Incorporating challenging texts is a promising revision of the well-supported practice of paired oral reading as a means for supporting development among all levels of readers.

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