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Insights into Fluency Instruction: Short- and Long-term Effects of Two Reading Programs

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Abstract

The purpose of the study was to examine short- and long-term effects of two instructional approaches designed to improve the reading fluency of second grade children: Fluency-Oriented Reading Instruction (or FORI; Stahl & Heubach, 2005) and a wide reading approach (Kuhn et al., 2006). By the end of second grade, children in the wide reading classrooms showed better fluency and self-concept compared to children in control classrooms. Classroom observations indicated children in FORI classrooms were more likely to be off-task than controls. However, by the end of third grade, children in both programs displayed better comprehension. We conclude that extensive and long-term focus on the oral reading of complex texts using practices that scaffold reading in second grade is beneficial for the long-term development of reading comprehension skills.

Classroom instruction that focuses on reading fluency is important because of the association that fluent reading has with improved comprehension (Schwanenflugel, Meisinger, et al., 2006). Fluent reading is often described as reading that is quick, accurate and expressive (National Reading Panel, 2000); however, the exact cognitive mechanisms and processes that index fluency, and the manner by which they engender

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improved comprehension, are unsettled theoretically and experimentally (Good, Kame'enui & Simmons, 2001; Kame'enui & Simmons, 2001; National Reading Panel, 2000; Stanovich 2000). Despite this, most researchers would agree that fluency entails the orchestration of a number of sub-skills which, taken together, comprise fluent reading and there is little debate regarding what fluent reading ultimately "looks" like in practice.

If there is debate regarding exactly what fluency entails, there is even less understanding which classroom practices provide the most efficient and theoretically sound means for prompting the development of fluent reading in children learning to read. Recent reviews of classroom practices (Kuhn & Stahl, 2003; National Reading Panel, 2000) suggest that one basic element might include repeated oral readings (Dahl, 1979; Koskinen & Blum, 1984; Samuels, 1979; Stahl & Heubach, 2005). In particular, approaches that incorporate repeated reading provide support for young readers through feedback and modeling of fluent, expressive reading seem to be particularly effective (Kuhn & Stahl, 2003). Often this repeated reading support comes from echo reading, choral reading, or listening to pre-recorded book tapes or CD's.

Other repeated reading approaches include the shared reading experience where the teacher and children repeatedly choral read Big Books as a group while also focusing on comprehension (Holdaway, 1979; Park, 1982). Combining practices can also be effective; programs by Morris and Nelson (1992) and Rasinski, Padak, Linek, and Sturtevant (1994) combine teacher modeling, echo reading, partner reading and the repeated readings of sections of the text. Finally, the approach focused on in our research, fluency-oriented reading instruction or FORI by Stahl and Heubach (2005), was designed for classrooms where the majority of children were reading below grade. The students reading was brought up to grade level using grade level texts from the children's basal readers through a combination of repeated reading, teacher modeling, and a focus on comprehension with echo, choral, and partner reading.

When reviewing the effectiveness of fluency-oriented approaches, Kuhn and Stahl (2003) found that repetition, alone or in combination with modeling, was the major, if not the primary, instructional component in the vast majority of interventions designed to increase learners' fluency (e.g., Repeated Readings, Readers' Theater; Oral Recitation Lesson: Fluency Development Lesson). Further, they found that most of these approaches were effective in assisting students' fluency development either in terms of accuracy, rate, prosody or comprehension, or on some combination of these outcome measures. However, in a number of cases, the repeated readings approach did not lead to greater achievement than was demonstrated by the controls. Interestingly, Kuhn and Stahl noted that when differences did not occur between the intervention groups and the controls, it was often because the control group was asked to read equivalent amounts of text with support, but without repetition. This led them to question whether there is something unique in the repetition itself that can lead to improvements in fluency or if it is simply the increased amounts of reading these students undertook that was the key to these gains.

Currently, there is only one study directly comparing wide reading and repeated reading approaches carried out by classroom teachers. In a study similar to the one presented

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here, Kuhn, Schwanenflugel, Morris, Morrow, Woo, Meisinger, et al. (2006) compared the FORI program (Stahl & Heubach, 2005) with a wide reading program using the same scaffolding approaches (choral, echo, and partner reading) in schools where many children faced difficulty in learning to read. Schools were randomly assigned to condition and the programs were carried out for the course of a school year. In the FORI approach, children read one text repeatedly throughout the week. In the wide reading approach, children received three different texts through the week. Observations confirmed that teachers carried out more of these scaffolding approaches than control classrooms whose teachers tended to use various approaches to oral reading practice, including round robin reading (Eldredge, Reutzel, & Hollingsworth, 1996), reading workshop, and guided reading. By the end of the school year, children in both FORI and wide reading classrooms showed superior Sight Word Reading Efficiency on the TOWRE and reading comprehension skill on the Weschler Individual Achievement Test (WIAT, The Psychological Corporation,1992) than children in control classrooms. However, only children whose teachers used the wide reading approach showed benefits in fluency as measured by the Gray Oral Reading Test-Fourth Edition (or GORT-4; Wiederholt & Bryant, 2004) when compared to control classrooms; the difference between wide and FORI approaches was not significant. Thus, it was unclear from the study whether, indeed, wide reading approaches produced more favorable benefits for the development of reading fluency relative to the repeated reading approach.

Beyond the basic question regarding the relative effectiveness of wide versus repeated reading approaches, it is unclear whether the long-term effects of these two approaches differ. According to automaticity theory, the importance of classroom approaches to developing fluency is to develop automatic word recognition and text recognition skills through extensive exposure to print (Adams, 1990; Samuels, 1979; Stanovich, 1984). When children's reading becomes fluent, a number of concurrent benefits accrue because resources previously only available for decoding now become available for other goals such as reading with expression (Schwanenflugel, Hamilton, Kuhn, Wisenbaker, & Stahl, 2004; Miller & Schwanenflugel, 2006) and enhanced comprehension (Fuchs, Fuchs, Hosp, & Jenkins, 2001; Schwanenflugel, Meisinger et al., 2006). These benefits did seem to accrue for the students in the FORI and Wide Reading classrooms, at least in the short-term. In the long term, however, fluency skills may undergo the *power law of learning* or the law of diminishing returns associated with the development of automaticity in any domain (Logan & Klapp, 1991). That is, gains in fluency established in young readers may begin to ceiling as they become fluent; this may allow children who have not received sophisticated fluency training to catch up over the long haul. It is possible that classroom practices for fluency may merely accelerate the attainment of fluent reading and not the outcome of improved reading skills altogether. Currently, it is unknown what the long term benefits of various fluency practices are.

Finally, classroom practices that impact students' motivation to read may play an important role in the development of fluency is the impact that classroom practices have on students' motivation to read. Research has shown that motivated readers tend to read more and with more breadth than their less motivated peers (Wigfield & Guthrie, 1997). We focused on two constructs that we believe have the greatest potential for influencing and being influenced by the development of reading fluency. The first is *reading self-concept,* which refers to

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children's global beliefs in their competence in reading. Reading self-concept is formed on the basis of past mastery experiences, social comparisons with peers, and feedback from others (Bong & Skaalvik, 2003). A second is *value of reading* which relates to the interest, importance, or utility children place on reading. With a *value of reading*, a child is more likely to engage in reading (Eccles, Adler, Futterman, Goff, Kaczala, Meece, & Midgely, 1983). Given the importance of the amount of reading on both the long-term development of reading fluency and reading skills in general, the influence of the various interventions on students' motivation to read seemed to be an important factor to consider.

The wide reading and FORI interventions both have the potential to positively impact students' reading motivation. If the interventions impact reading skills, they should also have an impact on students' reading self-concept (Chapman & Tunmer, 1997; Quirk, Schwanenflugel, & Webb, 2007). In the FORI approach, this increased motivation may derive from the likelihood that children are experiencing weekly gains in fluency on the reading of particular passages accrued because of repeated reading practice (Kuhn & Schwanenflugel, 2006). Because the practice of repeated reading is present in wide reading program as well, albeit to a lesser extent, the program also may afford students the opportunity to see how they improve with each reading. Unlike the FORI program, however, the children may also have an increased opportunity to see that their improving reading ability allow them to read a wide variety of reading materials.

The intervention programs may also affect motivation to read through the provision of an array of interesting, complex materials. Both programs focus on the use of grade-level materials to provide children with scaffolded practice on grade-level texts that are potentially more interesting and have more complex ideas and plots than would material at these students' instructional level. For the wide reading program, students are exposed to a particularly broad array of reading materials and topics, some of which may overlap with already existing areas of interest and others which may inspire interests in areas with which students have little or no prior knowledge about or experience. Reading materials that are of personal interest may positively impact students' motivation to read (Wigfield, Guthrie, Tonks, & Perencevich, 2004).

There is increasing evidence that students' motivation to read and reading skill development are reciprocally related, meaning that improvements in one will contribute to improvements in the other bi-directionally (Morgan & Fuchs, 2007). This cyclical relationship has the potential to create a snowball effect where fluency benefits derived as a function of positive effects of the intervention will also have a positive effect on children's motivation to read. Thus, we felt it was important to track the effects of both fluency interventions on students' reading motivation.

In sum, the purpose of the study was to examine the impact of two whole classroom approaches to the development of reading fluency. Both programs emphasized extensive oral reading in the classroom (Rasinski & Hoffman, 2003) through practices that provided support for children's text reading efforts. Both programs emphasized repetition, although to varying degrees. A comparison between the FORI and wide reading approaches is shown in Table 1. Short-term effects of FORI and the wide reading programs on reading skills

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over the course of the second grade school year were evaluated along with their effects on motivation to read. Long-term impacts on reading skills were evaluated a year later to determine whether fluency benefits were sustained and to determine whether there were emergent benefits from the programs.

Method

Participants

Participants were 537 second grade children from 42 classrooms (10 wide reading, 20 FORI, and 12 controls) in 11 schools in New Jersey and Georgia. The New Jersey site consisted of two intervention schools and a control school in a working class, suburban location with approximately 40% free/reduced lunch rate across the district. The Georgia schools included urban and rural working class and high poverty schools (two controls and six intervention) with approximately 77.4% free reduced lunch rate. Children receiving English language support services did not take part in the assessments. None of the schools was participating in the Reading First initiative at the time of the intervention.

In terms of overall demographics, the mean age of the children was 7 years, 7 mo (SD = 5 months; range = 6 years, 0 months to 9 years, 4 months). Of the sample, 48% were African-American, 19% European-American, 28% Latino-American, 3% Asian-American, and 3% other or unknown. Sixty-six percent of the sample was from the Georgia sites and 34% from the New Jersey sites. Twenty-three percent of the sample participated in the control condition, 46% in the FORI condition, and 31% in the wide reading condition. There was a 10.1% attrition rate over the course of the 2nd grade year and 39.9% attrition over the course of the study.

Assessments

To examine the effects of the program, a number of standardized reading assessments were used; these measured word reading efficiency, oral reading fluency, and reading comprehension. The measures were selected because of their fidelity to the construct being measured and their published psychometric quality. Age-based standard scores were used in all analyses. In addition, a non-standardized assessment of motivation to read was carried out. On all standardized assessments, testers were trained by an Ed.S. - level school psychologist to the level of 100% agreement with her assessment during the first week of testing.

Word reading efficiency.—The TOWRE (Torgesen et al., 1999) was given to all children. The TOWRE has two subtests: a Sight Word Reading Efficiency subtest and a Phonemic Decoding Efficiency subtest. The Sight Word Reading Efficiency subtest is a list of words arranged in a predetermined order of difficulty. The Phonemic Decoding Efficiency subtest is a list of pronounceable nonwords which get longer and require more multi-letter phonics rules as children move through the list. Children are asked to read as many words or nonwords as they possibly can in 45 seconds. The total score used in this study combines the standard scores of the individual subscales, as recommended by the test manual. The

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TOWRE manual reports reliabilities exceeding .90 and validity with other reading measures exceeding 80.

Oral reading fluency.—The GORT-4 (Wiederholt & Bryant, 2001) was used to measure children's oral reading of connected text. The GORT-4 consists of a set of increasingly difficult texts that are read aloud until the child reaches the ceiling rule for stopping the test. Children are scored based on the number of reading miscues and the time to read each passage. The GORT-4 manual reports fluency score reliabilities exceeding .90 for children in the age ranges presented in the study and validity estimates with other reading measures ranging from .39 to .89 (median r = .64).

Reading comprehension.—The Reading Comprehension subtest of the Weschler Individual Achievement Test (WIAT, The Psychological Corporation,1992) consists of a series of passages that children can read silently or orally, as they choose. When the child is finished reading each passage, the tester asks children a question about the passage which the child answers aloud in his or her own words. The test is stopped when the child reaches ceiling and the number of questions answered correctly determines children's standard score on the test. The manual reports high reliability coefficients for the test for both fall and spring of the second grade and spring of the third-grade years (.90-.92).

Motivation to Read.—An adapted version of Gambrell et al.'s (1996) *Motivation to Read Profile* (referred to as the *MRP*) was used to assess students' reading. The MRP was used because it was designed to be used with children as young as second grade and could be used repeatedly over the course of a single school year to monitor growth/changes in students' motivational profiles. The MRP consisted of two subscales including 10 items assessing reading self-concept and10 items assessing value for reading. For example, the self-concept scale contained items such as: (a) Reading is (Very easy for me, Kind of easy for me, Kind of hard for me, Very hard for me); and (b) When I come to a word I don't know, I can (Almost always figure it out, Sometimes figure it out, Almost never figure it out, Never figure it out.). The value for reading scale contained items such as: (a) Reading a book is something I like to do (Never, Not very often, Sometimes, Often); and (b) People who read a lot are (Very interesting, Interesting, Not very interesting, Boring). All items on the MRP used a 4-point Likert scale response format. Gambrell, et al. reported Chronbach alphas in the acceptable range for both subscales (self-concept =.75 and value = .82) and test-retest reliabilities were also relatively high (self-concept = .68 and value = .70).

Procedures.

Assessments.—Each child was tested individually by a trained assessor following the standardized test protocol in a quiet corner of his or her school at a time convenient for the teacher. Written parental consent was obtained for all children in the study. Further, the purpose of the study was explained to the participating children and child assent was obtained prior to testing. The order of the assessments was counterbalanced so that half the participants received the TOWRE followed by the GORT-4 first and then the WIAT Reading Comprehension subtest and the Motivation to Read subscales; and the other half received the WIAT and Motivation to Read first, followed by the TOWRE and GORT-4 assessments.

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To reduce the test burden on children, they were given only one of the two MRP subscales, alternating the scales with odd and even numbered children as they were tested. Each child was assessed within the first month of the second grade year and within the last month of the second grade year. Children were given the same MRP subscale at the beginning and end of the year. Children were assessed again with the TOWRE, GORT-4 and WIAT Reading Comprehension assessments a year later, at the end of third grade. Children received a small token of thanks at the end of each testing session, such as a sticker or pencil.

Teacher professional development.—Schools were randomly assigned to one of three conditions so that there would be a school-wide implementation of a fluency strategy: FORI, wide reading, or control. Teachers participated in two 2-hour sessions of formal professional development at the beginning of the school year led by an experienced teacher trainer with at least one year's experience in carrying out professional development on fluency classroom practices. The first session introduced the teachers to the instructional procedures and provided them with the lesson plan for the intervention. The second session focused on viewing and discussing a video-tape that showed the use of fluency-oriented classroom strategies that scaffolded the oral reading of text being carried out in a second grade classroom.

There were a number of commonalities across both programs. For both programs, teachers were asked to spend at least 20 minutes per day on fluency activities. For both programs, they were asked to focus on texts that were at grade level and to include a variety of text types (i.e., expository, narratives, poetry) as long as the amount of text was substantial (i.e., over 500 words). For both programs, there was some focus on repetition, but for the Wide Reading program repetition occurred two days a week and not the four days that the FORI program emphasized. All children were to be given texts to read at home; these would be a given day's selection if the children were not yet proficient at reading it. For both programs, teachers were provided with class sets of trade books that they could use to carry out the program if they wished to material other than the basal reader or literature anthology supplied by the school district. Professional development emphasized that fluency instruction should be embedded within the second grade reading curriculum, but only as part of it and not as an extra set of practices that would add additional minutes to the reading curriculum.

The lesson plan for the FORI program asked teachers to follow the same basic pattern throughout the weeks and included a gradual release of responsibility for reading the story from the teacher to the student over the week:

a. On Monday, they were asked to introduce the weekly story to the class by reading it aloud expressively and carry out comprehension activities for the story, introducing difficult vocabulary, asking various types of comprehension questions, completing graphic organizers, etc., as they normally might do.

b. On Tuesday, teachers were asked to carry out an echo reading of the story. Initially, teachers were to read two or three sentences from the story and children were asked to echo the readings back, as students became familiar with the

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procedure, the amount of text read at one time increased. Children were assigned a re-reading of the passage for homework.

c. On Wednesday, teachers were asked to carry out a choral reading of the text where they and the children read the text together. If time allowed, they read the text a second time. The students were asked to read for homework, if they could benefit from continued practice they re-read the main selection, otherwise they read a text of their own choosing.

d. On Thursday, teachers assigned the children partners to carry out partner readings as recommended by Meisinger, Schwanenflugel, Bradley, and Stahl (2004); this process involved taking turns reading the opposite pages of the book while the other child provided feedback and assistance as needed. Children were paired according to contrasting skills and friendship patterns. Again, depending on the amount of time available, the students carried out a second reading so that each child had the opportunity to read the entire text. The text selected for homework was again dependent on whether the students needed additional practice with the main text.

e. On Friday, teachers carried out extension activities which could include a variety of activities, such as writing, review of vocabulary, or carrying out running records of children's readings.

For the wide reading program, the weekly plan was more flexible, but basically captured the same fluency-oriented practices over three texts rather than just one. On Monday, the teachers were asked to introduce a story, read it aloud, and deal with comprehension up front. On Tuesday, the children echo read the story, and, if time allotted, they partner-read it as well. On Wednesday, they carried out extension activities on the selection. On Thursday and Friday, the children echo read and discussed a second and third text and, if there was time, partner or choral read them as well. Thus, the difference between the two programs was an emphasis on the number of different texts focused on during the week and the amount of repetition of the text rather than the practices used to gain fluency on them.

Control classrooms.—Since the schools were randomly assigned to one of the two intervention conditions or to the control condition, there was no specific reading program that was planned for a comparison. Rather, the reading instruction consisted of existing practice in the classrooms and schools and included a range of instruction, such as shared reading, reading workshops, and guided reading. Importantly, the amount of time dedicated to literacy instruction was consistent across the three sites. In other words, the difference between the controls and the intervention schools was not in the amount of time they spent engaged in literacy activities, instead, the differences consisted in the types of literacy activities in which the students engaged. Specifically, the control teachers tended to use approaches that emphasized small groupings, such as guided reading, centers, and reading workshop, to a greater extent than the FORI and wide reading classrooms, but like experimental classrooms, they often used practices that focused on connected texts using trade books. All control teachers received the same incentives for participation (e.g., books

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for their classroom) as the experimental groups, but were promised (and received) training on the fluency programs in the year following the intervention.

Classroom Observations.—Throughout the year, each class was observed by researchers trained to use a version of the CIERA School Change Observation Scheme (Taylor & Pearson, 2000) that was modified to incorporate codes corresponding to the core activities of the two FORI interventions. All observations were scheduled with the teachers and lasted for 30-40 minutes depending on the length of the reading instruction. Field notes on classroom activities during reading instruction were taken by observers trained to use the CIERA classroom observation system (Taylor & Pearson, 2000; Taylor, Pearson, Peterson, & Rodriguez, 2003). Specifically, the system required the observer to take qualitative field notes for five minutes followed by two minutes during which he or she would classify the notes into seven categories, or levels, and note the number of students that appeared to be on task. The coding levels identified who is giving the instruction, grouping arrangements, primary focus of instruction, the way in which that focus is implemented (e.g., if the students are working on reading, are they reading connected text or developing vocabulary), materials used, teacher style of interaction, and the expected pupil response. Because fluency-oriented reading instruction constituted only part of the students' formal reading curriculum, additional activities beyond the core fluency activities were also observed. All field notes were coded by two coders (the original observer and a second coder) who achieved a minimum Cohen's Kappa of .90.

Results

Classroom Observations

Five-minute field note observation segments were examined for the presence/absence of one of the core activities of the fluency-oriented instruction interventions: teacher read-aloud, repeated reading, choral reading, echo reading, or partner reading. The proportion of five-minute segments involving these core activities was then calculated for each classroom. As anticipated, teachers who had received professional development on the fluency-oriented instruction interventions were observed using core fluency activities in a greater proportion of segments than teachers who had not received this professional development (control $M = .057$, $SE = .022$; FORI: $M = .125$, $SE = .016$; and wide reading: $M = .135$, $SE = .021$; $F(2, 36) = 3.93$, $p = .029$). Simple contrasts indicated that teachers in both interventions were observed using core activities more often than the control teachers (both $p < .05$).

A follow-up MANOVA comparing the proportion of segments containing these fluency practices was carried out to determine how teacher use of the particular practices varied as a function of condition. This analysis painted a picture of remarkable similarity in the extent to which the fluency practices were carried out on a given day. The MANOVA indicated similarity between the repeated and wide conditions in the proportion of segments in which teachers used the practices, $F(5, 21) < 1$, $p = .569$. There was a similar proportion of segments in which children participating in the FORI and wide reading programs engaged in listening to text, $F(1, 27) = 1.08$, $p = .309$; partner reading, $F(1, 27) < 1$, echo reading $F(1, 27) < 1$, choral reading $F(1, 27) = 1.23$, and repeated reading $F(1, 27) < 1$. Of

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course, because the wide reading group would move on to new texts three times within the week, children in the FORI condition would repeatedly read each text more often than children in the wide reading condition. However, on the specific days that the classrooms were observed, the children in the wide reading groups would repeatedly read the day's text as often as their FORI counterparts. In sum, professional development established change in teacher behavior in the direction of enhancing teachers' use of fluency practices compared to control teachers (see Table 2).

Both fluency programs had emphasized the importance of embedding fluency practices within discussion and other practices associated with comprehension. This was to prevent children from viewing reading as a "word calling" exercise and to reinforce the view that the main goal of reading is comprehension. For this analysis, the five-minute segments were examined for the presence/absence of lower-level/explicit questions surrounding text, higher-level/inferential questions surrounding text, discussion of children's background knowledge for reading text, and vocabulary carried out as part of a whole classroom activity. As anticipated, teachers who had received professional development on the fluency-oriented instruction interventions were observed carrying out these comprehension activities a similar proportion of time as control teachers (control: $M = .251$, $SE = .030$; FORI: $M = .299$, $SE = .022$; and wide reading: $M = .260$, $SE = .028$; $F(2, 36) = 1.11$, $p = .343$). Thus, teachers receiving professional development did not carry out fluency practices at the expense of comprehension instruction.

Finally, during the classroom observations, observers had alternated between spending five minutes taking field notes on teacher activities and two minutes coding and determining the number of children who appeared to be on-task. For each classroom, we computed the mean proportion of children who were on-task across these observations. We carried out a simple univariate ANOVA comparing control, repeated and wide reading conditions in the proportion of children found to be on-task. We found a main effect of condition on on-task behavior, $F(2, 36) = 5.06$, $p = .012$. A follow-up contrast indicated that children in the FORI program were significantly less likely to be on-task than control children, $p = .003$. Thus, this may an unintended negative side effect of the program for which teachers may need specific professional development.

Children's Assessments.

Prior to carrying out analyses of the effectiveness of the FORI and the wide reading approaches to fluency instruction, raw scores on each assessment were converted to standard scores using the tests' age-based norms. The use of age-based norms served to control for differences across sites in terms of age of school entry and starting date of the school year (Crone & Whitehurst, 1999; Stipek & Blyler, 2001). Because our data had a hierarchical structure (i.e., children were nested within classrooms), hierarchical linear modeling (HLM 5.0; Raudenbush, Bryk, Cheong, & Congdon, 2001) was used to correct for statistical issues associated with the lack of independence among scores of children nested within each classroom and to correct for the intra-class correlation among scores that may result, as recommended by Kreft and de Leeuw (1998), and Raudenbush et al. (2001).

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Dummy coded variables were created to serve as Level 2 (classroom) variables for each of the interventions. These dummy codes served as independent variables in the HLM analysis to distinguish intervention from control children. Pre-test scores were entered as a Level 1 predictor to adjust for the within-classroom variance among children in their initial skills on each outcome measure. The unadjusted means can be found in Table 3. Further, because our earlier demographic analyses had indicated that there were *a priori* differences among our conditions in terms of child ethnicity and gender. Outcome dependent variables were children's scores on the spring assessments. For each assessment, two dummy coded variables (FORI, wide reading) were created to represent the Level 2 (classroom) predictor variable for each of the interventions. These dummy codes (0 = control, 1 = intervention) served as Level 2 predictors in HLM to distinguish intervention classrooms from control classrooms. For all analyses, we included a *slope* as well as an *intercept* parameter to analyze for potential differential effectiveness of the interventions for classrooms having children beginning the school year with varying levels of skill on that measure. Significant coefficients in the intercepts of these codes represent effects of the classroom intervention.

Further, prior to analyzing whether the fluency-oriented instruction interventions accounted for significant variation in children's standardized assessment scores, a null model analysis including pre-test scores at Level 1was carried out to evaluate whether there was significant classroom-level variation in outcome scores after controlling for prior achievement. We also carried out a second set of null model analyses to determine whether there were effects of gender or minority status (Caucasian versus other) in classroom level outcome scores after controlling for prior achievement. If the effects of gender or minority status for a particular outcome variable were not significant in this null analysis, these variables were dropped from further consideration when analyzing intervention effects. In no case were there significant differential benefits as a function of gender or minority status. Thus, in what appears below, we can assume that girls and boys, minority students and non-minority students benefited similarly from the intervention when the effects of the intervention were significant.

As seen in Table 4, HLM was carried out using the intervention codes as Level 2 predictor variables, adjusting for pre-test scores at Level 1, and the TOWRE 2nd grade post-test score as the outcome variable. In carrying out the analysis, we controlled for a priori variation in children's reading scores at pre-test so that pre-test adjusted intercepts of reading outcome intercept scores could be compared between control and intervention children. Thus, pre-test standard scores on each assessment were entered as the Level 1 (children) covariate for the analyses of intervention effectiveness. Further, for all analyses, we included a *slope* as well as an *intercept* parameter to analyze for potential differential effectiveness of the interventions for classrooms for low-skilled versus generally high skilled readers at pre-test. In no case did we observe a significant differential slope in the benefits observed for the interventions as a function of initial pre-test level (all $p > .05$) when there was also a significant effect of the intervention on a particular outcome. We used a one-tailed test (alpha = .10, two-tailed) to determine significance of the intervention because we had directional hypotheses regarding the effects of the intervention (i.e., that reading skill would be improved as a function of the intervention). Table 4 presents the Level 2 regression coefficients and standard errors on the outcome assessments as a function of

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the classroom-level intervention after pretest scores were entered as a Level 1 predictor of post-test outcomes.

An HLM analysis was carried out using the intervention codes as the predictor variables, the pre-test standard scores as a covariate, and the outcome TOWRE standard scores as the dependent variable. The null analysis had indicated significant classroom level variation in the outcome once pre-test was controlled for ($p = .003$), but when the intervention codes were added to the equation, neither the FORI or Wide Reading intervention children showed improvement on the TOWRE compared to control children, no significant variance was accounted for in on the TOWRE outcome scores, $t(39) = 1.62$, $p = .114$ and FORI: $t(39) = .66$, $p = .535$.

A similar analysis was carried out to examine the effects of fluency instruction on children's GORT-4 fluency standard score. A null analysis had indicated significant classroom level variation in the outcome once pre-test was controlled for ($p < .001$), but when the intervention codes were added to the equation, children in the Wide Reading intervention outperformed control children, $t(39) = 1.76$, $p = .087$, whereas the FORI children did not, $t(39) = .74$, $p = .466$.

Theoretically, we predicted that fluency instruction should relate to improvements not only in reading fluency, but also in reading comprehension, particularly because both programs required teachers to begin the week with a focus on comprehension. However, a null analysis on WIAT comprehension subtest outcome scores indicated non-significant classroom level variation in reading comprehension scores ($p = .182$), so there was no significant effects of the interventions on reading comprehension scores once pretest scores were controlled for either, FORI $t(39) = -.618$, $p = .54$, and Wide Reading $t(39) = 1.52$, $p = .135$. Thus, improvements in reading fluency attributable to the interventions were not accompanied by corresponding improvements in reading comprehension skill, at least during the second grade year.

One issue that we were interested in investigating during this important year in the development of reading skill is the influence on the reading programs on the development of children's motivation to read. One key aspect of motivation to read is the value that the child places on reading as an activity. Because gains in reading skill are directly related to the amount of reading activity in which students choose to engage (Anderson, Wilson, & Fielding, 1988), the value that a child places on reading-related activities may be important for the later development of their reading skill. A null analysis indicated that there was little classroom variation to be accounted for in the value of reading subscale outcome scores ($p = .50$). In fact, children rather uniformly rated the value of reading as high at both pre- and post-tests. Only 11% of children at pre-test and 15% at post-test had mean ratings below 3.0. The distribution of scores was excessively skewed (> 1) and leptokurtic at each time point (pretest: 2.45 and post-test: 4.29), suggesting that there were psychometric issues with the scale itself. Thus, this subscale was dropped as an indicator of motivation to read.

Reading self-concept is generally defined as a child's perception of his or her own competence as a reader and the perception that reading activities are generally easy or

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difficult (Chapman & Tunmer, 1997). By contrast to the value of reading subscale, the self-concept as a reader subscale showed reasonable psychometric characteristics (all skewness and kurtosis levels within acceptable limits). Further, a null analysis indicated that there was classroom level variation to be accounted for in outcome scores once pre-test scores were accounted for ($p = .015$). When intervention codes were entered into the equation, children in the Wide Reading intervention had a higher self-concept as a reader than control children, $t(39) = 2.85$, $p = .007$, whereas the FORI children did not, $t(39) = .12$, $p = .906$.

Long-term follow-up

We were carrying out our interventions in working class and high poverty schools and, as a result, we had substantial attrition in our long-term follow-up (39.9%). Thus, to be able to put the long-term effects into perspective, it was necessary to compare the pretest scores of children who remained in the study with children who did not to determine potential a priori differences between the two groups. The children who remained in the sample began the study with somewhat higher reading comprehension scores than those who did not, remained: $M = 99.1$, $SD = 14.1$, versus did not: $M = 96.02$, $SD = 13.69$; $F(1, 531) = 6.18$, $p = .013$; and fluency scores, remained: $M = 7.80$, $SD = 3.35$, versus did not: $M = 7.22$, $SD = 3.14$, $t(1, 535) = 4.09$, $p = .044$; but similar word reading efficiency scores, remained: $M = 194.04$, $SD = 25.3$, versus did not: $M = 189.85$, $SD = 25.65$, $F(1, 536) = 3.49$, $p = .062$. Fortunately, this differential attrition of low skilled readers at pretest from the sample was similar for the experimental and control conditions, 2 Attrition X 3 Condition interaction $F's < 1$ for all reading measures ($p > .10$), so this attrition would not differentially affect outcomes across conditions.

With this in mind, we analyzed the followed-up data on the development of children's reading skills a year later at the end of third grade (see Table 5). A year later, children whose 2nd grade teachers had participated in either intervention did not display better text reading fluency than control children, FORI $t(39) = .96$, $p = .341$, and Wide $t(39) = .69$, $p = .489$, or word reading efficiency, FORI $t(39) = 1.04$, $p = 305$, and Wide $t(39) = 1.38$, $p = .174$; but they did show superior comprehension skill, FORI $t(39) = 2.94$, $p = .006$, and Wide $t(39) = 2.03$, $p = .048$.

Discussion

Our results indicate some effectiveness of the wide reading approach, in particular, for reading outcomes in second grade. Children in classrooms with teachers using this approach showed better fluency by the end of the second grade year, although their word reading efficiency and reading comprehension did not show benefits compared to control children. Further, by the end of third grade, children whose second grade teachers had used the wide reading classroom practices showed better reading comprehension. Unfortunately, the benefits that the program had shown for reading fluency in second grade over control children were not enduring.

Benefits from the FORI approach were not as clear. By the end of the second grade year, children whose teachers used the FORI program did not show better word reading efficiency, fluency, or comprehension. The only evidence that the program had any impact on children's

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reading skills came a year later when these children showed superior reading comprehension compared to control children. Classroom observations suggested that the program may have negatively impacted children's behavior in that they were observed as being off-task more often than children in the control classrooms. It may be that children found re-reading the same passage for an entire week boring and occupied themselves by being off task. Some have suggested that repeated readings work best in classrooms when a rationale for the repeated readings is provided through the use of texts that are meant to be performed or that have a strong voice, such as poetry, song, plays, or speeches (Rasinski, Padak, Linek, & Sturtevant,1994). In the current study, we have no evidence that teachers focused on these types of texts, so there was no particular motivation from the students' point of view for all the repetition that was going on. As long as longer versions of such texts were used to provide sufficient reading practice, it might be that such an approach might be helpful to circumvent to the problem of children being off-task while still embedding considerable repeated practice

One goal of the current study was to examine the effects of the programs on motivation to read. We examined two aspects of motivation to read: value of reading and self-concept as a reader. We found no effects of either program on children's value of reading, but this is not surprising given that children's ratings on this scale were at ceiling most of the time. There is considerable social desirability felt by second grade children in indicating that reading was important. Further, the relatively low test-retest reliability suggests that there were fundamental measurement issues associated with the scale. We did, however, find that, compared to control children, by the end of the intervention year, children in the wide reading program showed higher self concept as a reader. Improvements in skill have been shown to influence young children's self-concept in academic context, so it is likely that this effect emerged from the improvement the program had on children's fluency. Moreover, the program provided much opportunity for students to test out the idea that they could read a variety of reading materials. As noted above, without a particular motivation to read texts so repeatedly, the FORI program may not have provided a coherent rationale for the extent of repetition that occurred. It is possible that FORI would have affected children's reading self-concept in a positive way if they were reading the types of texts that allowed them to look good in performances in plays, speeches, or poems as a result of all this extended practice.

The findings of current study show some similarities and some differences to previous studies examining repeated and wide reading approaches. The current study support those of other studies finding particular effectiveness of wide reading approaches (Kuhn, 2005; Kuhn et al., 2006) for the enhancing the reading of connected text. Although the current study found limited gains during the intervention year on word reading efficiency, previous studies found benefits of this approach (Kuhn, 2005; Kuhn et al., 2006). Both Kuhn (2005), Kuhn et al. (2006), and the current study found that wide reading produced gains in comprehension compared to controls, but the current study found these effects to be delayed. To this growing body of research we add the finding that wide reading encourages the development of a good self-concept as a reader. The conclusion that we draw from this picture is that having children read a wide variety of challenging connected text with some minimal

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repetition but in a manner that supports their decoding needs is more consistently effective than asking them to carry out repeated reading on the same texts over and over again.

One surprise to us is the total lack of effectiveness of the FORI for developing word reading efficiency and reading fluency. Scaffolded repeated reading, around which the program is based, is quite possibly the most oft-prescribed recommendation for fluency problems (Kuhn & Stahl, 2003). Unfortunately, most studies that have evaluated the effects of repeated reading have assessed the reading of the passages on which the repeated readings focused (National Reading Panel Report, 2000). In the current study, we were interested in transfer of skills to texts outside those used for fluency practice. Stahl and Heubach (2005) did examine such transfer and found large and important normative improvements in children's reading fluency as a function of FORI. Stahl and Heubach, however, lacked a control group. Possibly more importantly, though, Stahl and Heubach also had unusually motivated teachers. In that study, their teachers had singled out fluency as the primary goal they wished to work on with their students. They developed the program with the researchers to meet the special requirements of their district that all teachers should teach reading using grade-level materials, regardless of the readiness of the children for them. The teachers read all of the original relevant research as part of a graduate course taught by the researchers on the topic. Thus, they were highly committed to the outcome of the research. In the current study, there was no such unusual motivation or special relationship between the researchers and the teachers. Instead, teachers participated merely because they agreed that their students could improve in fluency. Regardless, the current findings for FORI are more in line with those of Kuhn et al. (2006) who also did not find effects of FORI on reading fluency as compared to a control group (although they did find effects for word reading efficiency and comprehension).

One striking finding of the current study, however, was that both programs showed long-term effects on reading comprehension over control children despite the lack of persistence for fluency effects. The main purpose of fluency programs is to improve, not only fluency, but comprehension. If improved comprehension is the "gold standard" against which all reading interventions are measured, both programs might be considered successful.

One tenant of automaticity theory is that reading comprehension should be linked to reading fluency in a causal way (Schwanenflugel et al., 2006). Fluency is supposed to free up cognitive resources that can then be dedicated to improving comprehension. In the current study, changes in comprehension do not appear to be linked to improvements in fluency per se. For example, although the children in the wide reading program ended up with better reading fluency in second grade, they did not display better comprehension right away. Further, even though children in all programs performed similarly in terms of reading fluency a year later, the intervention children showed improved comprehension over controls anyway. The lack of a linkage between fluency and comprehension is a bit of a puzzle. To what might this improved comprehension be attributed?

We think that the long-term benefits on comprehension might be attributed to several features that both programs had in common. First, the use of complex text was an important aspect of both programs. For both programs, teachers were asked to focus their fluency

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practices on grade-level texts. The provision of class sets of a range of grade-level trade books and other materials for the classrooms as incentives for participating in the program ensured that teachers did, indeed, use grade-level texts. For most of the children in these schools, these texts were challenging. Such complex texts serve to expose children to a variety of concepts, vocabulary (Nagy, 1988), and ideas to which they might not otherwise have access which would provided an expanded basis for comprehension. From an instance theory of automaticity point of view (Logan, 1997; Kuhn et al., 2006), exposure to such texts results in the establishment of a wide range of traces in memory that can be used to support comprehension in the future.

Second, the scaffolding that both programs provide supported the children who participated as they read these texts; this allowed the meanings of the texts to be more fully extracted. Both programs required that children spend at least 20-40 minutes per day focusing on these complex texts. Finally, both programs included at least *some* repeated reading. Repeated reading has been shown to improve comprehension of texts by itself (Walczyk, Marsiglia, Johns, & Bryan, 2004). In less effective high poverty classrooms, teachers tend to focus on phonics, sight word reading, and simple books, rather than on processing complex texts with a broad variety of ideas. We believe that the comprehension practice gained from focusing extensively on grade level texts in both of these programs provided the basis for the long-term benefits.

There are a number of methodological issues with the current study that limit the conclusions that might be drawn regarding the relative effectiveness of these programs. The first of these has to do with statistical power. The current study used only 42 classrooms balanced rather unequally across conditions when a larger number of classrooms (around 63 classrooms) would have been closer to ideal. Moreover, we would have recruited a larger number of schools so that we could have treated school rather than classrooms as the Level 2 variable. Thus, we should be cautious in interpreting lack of an effect as meaning that there, indeed, was no effect of the program.

A second methodological issue is that we know little about the other kinds of training the control teachers may have had in the interim. It is reasonable to assume that, when schools volunteer for professional development, those assigned to the control do not wait for professional development that targets their needs. Although we have evidence that experimental teachers used more fluency practices espoused by our professional development than control classrooms, there was still a considerable focus on texts in control schools. Indeed, other fluency approaches such as Reading Recovery and Balanced Literacy approaches also focus on attention to texts rather than word work. What distinguishes ours from those approaches is the amount and structure of repeated reading and the use of grade-level, rather than instructional level, texts. Further, our program did not advocate any specific approach to word identification which was supposed to emanate from the teacher's regular reading series, which we also did not monitor. Ideally, we would have gathered information about the specifics of the types of programs that were being used in both control and experimental classrooms. Still, despite these issues, we were able to find some effects indicating the effectiveness of the programs over business-as-usual approaches.

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Future research needs to explore the impact of key programmatic factors involved in the wide reading program on the development of reading fluency and other reading skills in young children. For example, is the number of repeated readings, the length of texts, or the nature of support given to student most relevant for enabling greater success? We think it is likely that each of these program features may have important and distinguishable impact on children's fluency development. For example, although some repetition is likely to be desirable, the benefits of repeated reading may build up within a relatively few repetitions (3-5 according to many authors; e.g., O'Shea, Sindelar, & O'Shea, 1985, 1987; Reutzel, 2003) and this has a theoretical basis (Logan, 1997). Further, we made recommendations to teachers regarding the length of text that we believed would be most beneficial (over 500 words). Kuhn and Groff (2006) found some preliminary evidence that practice with shorter texts might not have the same impact in enhancing fluency skills, but this was not systematically evaluated in the current study. In both programs, the use of practices designed to scaffold student reading were recommended and largely adhered to. However, it is unclear that the success of the programs could be traced these practices or if the same effects would be found if children were provided silent reading practice on their own. Distinguishing the key programmatic factors underlying the development of fluency, motivation, and long-term comprehension is key if we are to develop empirically-based programs for this stage of reading.

The current study provides evidence that an extensive and long-term focus on the oral reading of connected, complex texts using classroom practices that scaffold the processing of these texts may be advantageous for the development of good comprehension skills. Moreover, our findings are suggestive that wide reading is a preferred approach to carrying out this oral reading. Ideally, by assisting learners through such methods, we can begin to close the achievement gap that exists between more skilled readers and their peers who struggle with their literacy development. In this way, we can help prepare them for the increasingly complex reading that occurs in fourth grade and beyond.

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References

Adams MJ (1990). Beginning to read: Thinking and learning about print. Cambridge, MA: M.I.T. Press.

Anderson RC, Wilson PT, & Fielding LG (1988). Growth in reading and how children spend time outside of school. Reading Research Quarterly, 23, 285–303.

Berliner DC (1981). Academic learning time and reading achievement. In Guthrie JT (Ed.), Comprehension and teaching: Research reviews (pp. 203–226). Newark, DE: International Reading Association.

Bong M, & Skaalvik E (2003). Academic self-concept and self-efficacy: How different are they really? Educational Psychology Review, 15, 1–40.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Chapman JW, & Tunmer WE (1997). A longitudinal study of beginning reading achievement and reading self-concept. British Journal of Educational Psychology, 67, 279–291.

Chomsky C (1978). When you still can't read in third grade? After decoding, what? In Samuels SJ (Ed.), What research has to say about reading instruction, (pp. 13–30). Newark, DE: International Reading Association.

Crone DA, & Whitehurst GJ (1999). Afe and schooling effects on emergent literacy and reading skills. Journal of Educational Psychology, 91, 604–614.

Dahl PR (1979). An experimental program for teaching high speed word recognition and comprehension skills. In Button JE, Lovitt T, & Rowland T (Eds.), Communications research in learning disabilities and mental retardation, (pp. 33–65). Baltimore: University Park Press.

Eccles JS, Adler TF, Futterman R, Goff SB, Kaczala CM, Meece JL, & Midgley C (1983). Expectancies, values, and academic behaviors. In Spence JT (Ed.), Achievement and achievement motivation (pp.75–146). San Francisco, CA: W. H. Freeman.

Eldredge JL, Reutzel DR, & Hollingsworth PM (1996). Comparing the effectiveness of two oral reading practices: Round robin reading and the shared book experience. Journal of Literacy Research, 28, 201–225.

Fountas IC,& Pinnell GS (1999). Matching books to readers: Using leveled books in guided reading, K-3. Portsmouth, NH : Heinemann.

Fuchs LS, Fuchs D, Hosp MK, & Jenkins JR (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. Scientific Studies in Reading, 5, 239–256.

Gambrell LB, Palmer BM, Codling RM, & Mazzoni SA (1996). Assessing motivation to read. The Reading Teacher, 49, 518–533.

Good RH, Simmons DC, & Kame'enui EJ (2001). The importance of decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high stakes outcomes. Scientific Studies of Reading, 5(3), 257–288.

Hoffman JV, & Crone S (1985). The oral recitation lesson: A research-derived strategy for reading basal texts. In Niles JA & Lalik RV (Eds.), Issues in literacy: A research perspective, 34th yearbook of the National Reading Conference (pp. 76–83). Rochester, NY: National Reading Conference.

Holdaway D (1979). The foundations of literacy. Sydney: Ashton-Scholastic.

Kame'enui EJ, & Simmons DC (2001). The DNA of reading fluency. Scientific Studies of Reading, 5, 203–210.

Koskinen PS, & Blum IH (1984). Repeated oral reading and the acquisition of fluency. In Niles JA & Harris LA (Eds.), Changing perspectives on research in reading/language processing and instruction: Thirty Third yearbook of the National Reading Conference, (pp. 183–187). Rochester, NY: National Reading Conference.

Kuhn MR, Schwanenflugel PJ, Morris RD, Morrow LM, Bradley BA, Meisinger E, Woo D, & Stahl SA (2006). Teaching children to become fluent and automatic readers. Journal of Literacy Research, 38, 357–387. [PubMed: 19946472]

Kreft I, & de Leeuw J (1998). Introducing multilevel modeling. Thousand Oaks: SAGE Publications.

Kuhn MR (2004/2005). A comparative study of small group fluency instruction. Reading Psychology, 26 127–146.

Kuhn MR, & Groff CA (2006, 12). Teaching children to become fluent readers: An overview. Paper presented at the National Reading Conference, Los Angeles, CA

Kuhn MR, & Stahl SA (2003). Fluency: A review of developmental and remedial practices. Journal of Educational Psychology, 95, 3–22.

Leinhardt G, Zigmond N, & Cooley W (1981). Reading instruction and its effects. American Educational Research Journal, 18, 343–361.

Leslie L, & Caldwell J (1995). Qualitative reading inventory-II. Boston: Longman

Logan GD, & Klapp ST (1991). Automatizing alphabet arithmetic: Is extended practice necessary to produce automaticity? Journal of Experimental Psychology: Learning, Memory, and Cognition, 17, 179–195.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Logan GD (1997). Automaticity and reading: Perspectives from the instance theory of automaticity. Reading & Writing Quarterly: Overcoming Learning Difficulties, 13, 123–146

Meisinger EB, Schwanenflugel PJ, Bradley BA, & Stahl SA (2004). Interaction quality during partner reading. Journal of Literacy Research, 36, 111–140. [PubMed: 19830259]

Miller J, & Schwanenflugel PJ (2006). Prosody of Syntactically Complex Sentences in the Oral Reading of Young Children. Journal of Educational Psychology, 98, 839–853. [PubMed: 19777079]

Morris D, & Nelson L (1992). Supported oral reading with low achieving second graders. Reading Research and Instruction, 32, 49–63.

Mostow J, & Beck J (2005). *Micro-analysis of fluency gains in a reading tutor that listens*: Wide vs repeated guided oral reading. Paper presented at the Society for the Scientific Study of Reading Conference, Toronto, Canada.

Nagy WE (1988). Teaching vocabulary to improve reading comprehension. Newark, DE: International Reading Association.

National Reading Panel (2000). Report of the Subgroups: National Reading Panel. Washington, DC: National Institute of Child Health and Development.

Optiz MF, & Rasinski TV (1998). Good-bye round robin reading: 25 effective oral reading strategies. Portsmouth, NH: Heinemann.

O'Shea LJ, Sindelar PT, & O'Shea DJ (1985). The effects of repeated readings and attentional cues on reading fluency and comprehension. Journal of Reading Behavior, 17, 129–142.

O'Shea LJ, Sindelar PT, & O'Shea DJ (1987). The effects of repeated readings and attentional cues on the reading fluency and comprehension of learning disabled readers. Learning Disabilities Research, 2, 103–109.

Park B (1982). The Big Book trend – a discussion with Donald Holdaway. Language Arts, 59. 815–821.

Quirk M, Schwanenflugel PJ, & Webb M-Y (2007). An Examination of the Causal Relationship between Motivation to Read and Reading Fluency Skill in Second Grade Children. Unpublished manuscript, University of Georgia, Athens, GA.

Rasinski TV, & Hoffman JV (2003). Oral reading in the school curriculum. Reading Research Quarterly, 38, 510–522.

Rasinski TV, Padak ND, Linek WL, & Sturtevant E (1994). Effects of fluency development on urban second-grade readers. Journal of Educational Research, 87, 158–165.

Raudenbush S, Bryk A, Cheong YF, & Congdon R (2001). HLM5: Hierarchical Linear and nonlinear modeling. Lincolnwood, IL: SSI Scientific Software International.

Reutzel DR (2003, 5). Fluency: What is it? How to Assess it? How to develop it! Paper presented at the Preconference Institute 15 of the International Reading Asscociation, Oralndo, FL

Samuels SJ (1979). The method of repeated readings. The Reading Teacher, 32, 403–408.

Schwanenflugel PJ, Meisinger EB, Wisenbaker JM, Kuhn MR, Strauss GP, & Morris RD (2006). Becoming a fluent and automatic reader in the early elementary school years. Reading Research Quarterly, 41, 496–522. [PubMed: 20072665]

Schwanenflugel PJ, Hamilton AM, Kuhn MR, Wisenbaker J, & Stahl SA (2004). Becoming a fluent reader: Reading skill and prosodic features in the oral reading of young readers. Journal of Educational Psychology, 96, 119–129. [PubMed: 19777077]

Stahl SA, & Heubach K (2005). Fluency-Oriented Reading Instruction. Journal of Literacy Research, 37, 25–60.

Stanovich KE (1984). The interactive-compensatory model of reading: A confluence of developmental, experimental, and educational psychology. RASE: Remedial & Special Education, 5, 11–19.

Stipek D, & Byler P (2001). Academic achievement and social behaviors associated with age of entry into kindergarten. Applied Developmental Psychology, 22, 175–189.

Taylor BM, & Pearson PD (2000). The CIERA School Change Classroom Observation Scheme. Minneapolis: University of Minnesota.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Taylor BM, Pearson PD, Peterson DS, & Rodriguez MC (2003). Reading growth in high-poverty classrooms: The influence of teacher practices that encourage cognitive engagement in literacy learning. The Elementary School Journal, 104, 3–28.

Torgesen J, Wagner R, & Rashotte C (1999). Test of Word Reading Efficiency. Austin, TX: Pro-Ed.

Walczyk JJ, Marsiglia CS, Johns AK (2004). Children's compensations for poorly automated reading skills. Discourse Processes, 37, 47–66.

Wechsler Individual Achievement Test. (1992). San Antonio, TX: Psychological Corporation.

Wiederholt JL, & Bryant BR (2004). Gray Oral Reading Tests (Fourth ed.). Austin, TX: Pro-Ed.

Wigfield A, & Guthrie JT (1997). Relations of children’s motivation for reading to the amount and breadth of their reading. Journal of Educational Psychology, 89, 420–432.

Wigfield A, Guthrie JT, Tonks S (2004). Children's motivation for reading; Domain specificity and instructional influences. Journal of Educational Research, 97, 299–309.

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Table 1

Comparison of Fluency-Oriented Reading Instruction and Wide Reading Approaches

Similarities	Differences
Teacher read-aloud	Amount of repetition: Wide <FORI
Focus on comprehension	Number of texts per week: 3 Wide, 1 FORI
Choral reading	Trade books: Wide > FORI
Echo reading	At-home reading:
Partner reading	Wide: child passage choice
Focus on oral reading	FORI, weekly target passage
Focus on whole class instruction	

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Table 2

Observation of teacher practices as a function of condition

Feature Observed	Control	FORI	Wide
Proportion 5-min. segments using:			
Any core fluency activity	.057	.125	.135
Listening to teacher read text	.171	.127	.210
Choral reading	.058	.088	.053
Echo reading	.000	.095	.072
Partner reading	.011	.152	.194
Repeated reading	.047	.155	.149
Any comprehension activity	.251	.299	.260
Proportion children on task during 1-min segments	.978	.864	.907

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Table 3

Means and Standard Deviations for Assessments as a Function of Condition[a]

		Assessment			
Condition		**TOWRE**	**GORT**	**WIAT**	**MPR-SC**
Control					
Gr. 2 - Fall	M	197.9	8.1	101.0	30.5
	SD	25.2	3.3	14.7	4.8
Gr. 2 - Spring	M	204.1	9.3	103.5	30.2
	SD	23.8	3.1	12.1	4.1
Gr. 3 – Spring	M	205.7	9.5	97.6	---
	SD	25.5	3.7	12.8	---
Wide					
Gr. 2 - Fall	M	197.0	8.1	100.1	31.5
	SD	24.1	3.3	13.7	4.3
Gr. 2 - Spring	M	208.4	9.7	104.2	32.2
	SD	25.7	3.3	13.2	4.2
Gr. 3 – Spring	M	207.0	9.8	99.7	---
	SD	24.3	3.3	12.4	---
Repeated					
Gr. 2 - Fall	M	190.0	7.4	97.5	31.4
	SD	25.8	3.3	14.0	4.8
Gr. 2 - Spring	M	199.0	8.8	101.0	31.1
	SD	25.6	3.2	11.5	5.2
Gr. 3 – Spring	M	202.3	9.2	98.9	---
	SD	26.5	3.6	11.0	---

[a]Gr. = Grade; TOWRE – Test of Word Reading Efficiency, Total; GORT – Gray Oral Reading Test, Fluency; WIAT – Weschler Individual Achievement Test – Reading Comprehension Subtest; MRP –SC – Motivation to Read Profile, Self Concept Scale

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Table 4

Pre-test adjusted HLM coefficients for intervention post-test in second grade

Assessment	Fixed Effect	Coefficient	Standard Error
TOWRE total	Post-test Intercept	199.23 2	1.955
	Wide Reading	3.440	2.129
	FORI	1.456	2.330
	Pre-test Slope Intercept	0.839	0.057
	Wide Reading	0.083	0.062
	FORI	0.419	0.070
GORT-Fluency	Post-test Intercept	8.689	0.295
	Wide Reading	0.606	0.345
	FORI	0.269	0.365
	Pre-test Slope Intercept	0.788	0.048
	Wide Reading	0.066	0.060
	FORI	0.021	0.055
WIAT-Reading	Post-test Intercept	101.414	0.663
	Wide Reading	1.270	.833
	FORI	−0.589	.954
	Pre-test slope Intercept	0.619	.056
	Wide Reading	.112	.066
	FORI	.017	.068
MRP-Self Concept	Post-test Intercept	30.040	0.604
	Wide Reading	2.064	0.724
	FORI	0.099	0.832
	Pre-test Slope Intercept	0.513	0.151
	Wide Reading	−0.041	0.198
	FORI	0.214	0.201

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Table 5

Pre-test adjusted HLM coefficients for intervention follow-up in third grade

Assessment	Fixed Effect	Coefficient	Standard Error
TOWRE total	Post-test Intercept	100.704	2.217
	Wide Reading	2.661	2.557
	FORI	3.587	2.592
	Pre-test Slope Intercept	0.819	0.071
	Wide Reading	−0.066	0.083
	FORI	−.008	0.091
GORT-Fluency	Post-test Intercept	8.751	0.585
	Wide Reading	0.491	0.705
	FORI	0.622	0.645
	Pre-test Slope Intercept	0.887	0.087
	Wide Reading	−0.074	0.095
	FORI	−0.050	0.104
WIAT-Reading Comprehension	Post-test Intercept	95.573	0.978
	Wide Reading	2.638	1.297
	FORI	3.465	1.180
	Pre-test Slope Intercept	0.597	0.082
	Wide Reading	−0.048	0.111
	FORI	−0.030	0.096