
4-2011

16 Minutes of “Eyes-on-Text” Can Make a Difference: Whole-Class Choral Reading as an Adolescent Fluency Strategy

David D. Paige
Bellarmino University, Louisville, KY

Follow this and additional works at: https://scholarworks.wmich.edu/reading_horizons



Part of the Education Commons

Recommended Citation

Paige, D. D. (2011). 16 Minutes of “Eyes-on-Text” Can Make a Difference: Whole-Class Choral Reading as an Adolescent Fluency Strategy. *Reading Horizons: A Journal of Literacy and Language Arts*, 51 (1). Retrieved from https://scholarworks.wmich.edu/reading_horizons/vol51/iss1/3

This Article is brought to you for free and open access by the Special Education and Literacy Studies at ScholarWorks at WMU. It has been accepted for inclusion in Reading Horizons: A Journal of Literacy and Language Arts by an authorized editor of ScholarWorks at WMU. For more information, please contact wmu-scholarworks@wmich.edu.



16 Minutes of “Eyes-on-Text” Can Make a Difference: Whole-Class Choral Reading as an Adolescent Fluency Strategy

David D. Paige, Ed.D.
Bellarmine University, Louisville, KY

Abstract

Research continues to suggest that adolescents struggle with reading, indicating that much work remains to ensure that all students read at levels consistent with the skills required for academic achievement (Biancarosa & Snow, 2006). This article investigates whole-class choral reading (WCCR) within the context of a sixth-grade language arts setting for the purpose of improving oral reading fluency skills with narrative text. In this quasi-experimental study involving 112 students, WCCR was implemented on a daily basis with students utilizing the repeated reading of narrative text. Results suggest that students improved both phonological decoding and oral reading fluency skills with moderate effect sizes. Implications for teaching are discussed.

Introduction

In addition to the growing interest in oral reading fluency, attention has recently focused on the subject of adolescent literacy achievement and instruction (Cassidy & Cassidy, 2009/2010). Reading Next (Biancarosa & Snow, 2006), a document proposing the elements of effective adolescent literacy instruction, has been prepared to address recent evidence that close to three-fourths of twelfth graders are unable to adequately access grade-level texts (National Center for Education Statistics, 2009). It is precisely during middle school that students must be “fluent in recognizing words, and their vocabulary and knowledge needs to expand, as does their ability to think critically and broadly” (Chall & Jacobs, 2003, p. 14). Unfortunately, too many adolescents still struggle with overall reading fluency and

are therefore disadvantaged in the process of applying the increasingly sophisticated comprehension skills that complex text requires (Rasinski & Padak, 2005; Rasinski et al., 2005). Recent research has demonstrated that oral reading fluency accounts for half of the variance in reading comprehension, while the ability to comprehend text is responsible for over 80% of the variance in academic achievement (Paige, in press). This suggests that more attention should be directed to instructional strategies for use in later elementary, middle, and high school settings that focus on the development of appropriate oral reading fluency to ensure that all students are progressing along a continuum leading to competence with increasingly difficult texts in order to maximize the potential for effective comprehension processing (Snow, Martin, & Berman, 2008). This study examines one such instructional strategy: the application of whole-class choral reading (WCCR) using the repeated-reading of narrative text situated within language arts classrooms in a middle school setting.

Automaticity and Fluency

The ability to fluently read text is highly dependent on a reader's ability to quickly recognize a large inventory of words that have been learned to the point where retrieval is automatic. Being automatic means the reader does not consciously apply phonological decoding principles (Compton, Appleton, & Hosp, 2004; LaBerge & Samuels, 1974; Torgesen, 1999; Torgesen & Hudson, 2006). While automaticity is hypothesized to aid in the creation of meaning from text by freeing attention from decoding activities (LaBerge & Samuels, 1974), it is important to recognize that automaticity is not an overall characteristic of the reader, but rather the reader becomes automatic with specific words (Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001). However, even the most fluid of readers may occasionally encounter a word that must be purposefully decoded because it is not in the reader's store of automatic words (Torgesen & Hudson, 2006). Ultimate attainment of automaticity is created through practice with orthographic representations where words previously in the reader's functional inventory are transferred fairly quickly to an autonomous sightword inventory (Anderson, 1992; Jorm & Share, 1983; Perfetti, 1992; Rayner et al., 2001; Share, 1995).

In recent research, Klauda & Guthrie (2008) suggest that readers who demonstrate the highest levels of reading comprehension fluently process text on three distinct levels. At the first level, readers have large and fast sightword inventories similar to what has been proposed by previous researchers (Jenkins, Fuchs, Espin, van den Broek, & Deno, 2000; Torgesen, Rashotte, & Alexander, 2001). On a second level, readers are able to read aloud phrases as whole syntactic units, while on a third

level readers with the best comprehension read both narrative and expository text with appropriate prosody. Some suggest that additional variance in reading comprehension attributable to oral reading fluency exists beyond that found at the word level (De Jong & van der Leij, 2002; Rayner et al., 2001; Reichle & Perfetti, 2003; Schwanenflugel, Hamilton, Kuhn, Wisenbaker, & Stahl, 2004) and can be explained by automaticity with text at these second and third levels. These results suggest that oral reading fluency may be viewed on a developmental continuum that spans not only words and phrases, but also genres and readability of text. The role of prosody, or reading with expression (Schreiber & Read, 1980), is included in many definitions of oral reading fluency and is viewed as a developmental trait of an accomplished reader (Mathson, Allington, & Solic, 2006; Pikulski & Chard, 2005; Rasinski, 2004; Walker, Mokhtari, & Sargent, 2006). The construct of oral reading fluency used in this study embraces the idea of deep processing of text by the reader and does not imply a race to the finish where the fastest reader wins (Rasinski, 2004).

Repeated Reading Strategies

The use of repeated-reading strategies has been widely investigated since Samuels (1979) introduced the strategy as a method to improve oral reading fluency and word recognition automaticity through practice (Dowhower, 1987; Faulkner & Levy, 1994; Homan, Klesius, & Hite, 1993; Koskinen & Blum, 1986; O'Shea, Sindelar, & O'Shea, 1985; Paige, 2006; Rasinski, 1990; Young, Bowers, & MacKinnon, 1996). In their review of the results of repeated-reading studies, Kuhn & Stahl (2003) found this strategy implemented for students from the first grade through college with the majority of studies being conducted between the second and sixth grades. Text selections were primarily narrative in nature with some studies using grade-level text and others utilizing text that was above grade-level. Implementation of repeated-reading typically involves the student reading a single passage a set number of times that ranges between three and five (Kuhn & Stahl, 2003; O'Shea, Sindelar, & O'Shea, 1985). The National Reading Panel (NRP, 2000) found effect sizes for repeated reading strategies to average 0.44 on measures of oral reading fluency.

Whole-Class Strategies

Research into the use of WCCR is sparse at best, however, Rasinski, Padak, Linek, and Sturtevant (1994) investigated a strategy called the fluency development lesson (FDL) in a fourth-grade setting that utilized WCCR. The study involved 54 students with teachers that employed six principles for effective fluency instruction (Rasinski, 1989). These principles are (a) the modeling of fluent reading,

(b) providing corrective feedback to students, (c) providing reader support while reading such as in choral reading or reading-while-listening, (d) the use of repeated readings, (e) cuing the students regarding phrasing boundaries in text, and (f) practice using independent level text. FDL, a 15-minute lesson that includes the modeling of fluent reading by the teacher, whole-class reading of text, and the paired-reading of text by students resulted in significant progress in reading rate after several months of treatment with effect sizes ranging from .133 to .962. The purpose of the present study is to investigate the implementation of WCCR using narrative text in a repeated-reading format as a strategy to improve oral reading fluency in struggling sixth grade readers.

Research Questions

This study addressed the following research questions:

1. Does the use of repeated-reading WCCR using narrative text improve oral reading fluency in sixth-grade readers?
2. What effect does the use of WCCR have on word reading in sixth-grade readers?
3. What are teacher perceptions of WCCR?
4. What do students think about WCCR?

Method

Participants

Participants were 112 sixth-grade students who attended a middle school within a large southeastern public school district with ages ranging between 10 years, 10 months to 12 years, 7 months ($M = 11$ years, 6 months, $SD = .40$). Of the total sixth-grade population ($n = 391$ students), 348 (89.0%) were African American, 27 (7%) were Hispanic, 8 (2%) were European American, and 8 (2%) were Asian American. Approximately 43% of the children attending this school qualified for free or reduced-price lunch.

Group Assignment

Informed parental consent was provided by 231 of the 392 students (59%) enrolled in the sixth grade. Four teachers provided reading instruction to all sixth graders enrolled in the regular educational curriculum. These four teachers and all their respective classes were randomly assigned to either the treatment or control condition. From the students who provided informed parental consent who were

in classes taught by the two teachers assigned to the WCCR condition, 60 were randomly selected as study participants in the treatment condition. Likewise, 60 students from classes instructed by the two teachers in the control condition were selected as study participants. By the time of post testing, subject attrition resulted in 54 (48.2%) students in the WCCR group and 58 (51.8%) students in the control group ($n = 112$). From the total participant sample, seven (6.25%) students had a current Individual Educational Plan (IEP) and of that total, three were diagnosed with mild reading disabilities and four received services for the academically gifted.

Materials and Procedures

Reading Assessments

To address the research questions, two types of oral reading were evaluated. The first measured the ability of the reader to read isolated real- and pseudo-words, reflecting knowledge of the alphabetic principle and the depth of the reader's sight-word inventory. The second measured the student's ability to orally read connected narrative text, resulting in the measure of oral reading fluency.

Test of Word Reading Efficiency. The Test of Word Reading Efficiency [Torgesen, Wagner, & Rashotte, 1999; (TOWRE)], is composed of two subtests, Sight Word Efficiency (SWE) and Phonemic Decoding Efficiency (PDE) subtests. Form A was used for pretesting while Form B was used in posttesting. Both subtests ask the reader to read aloud as many words of increasing complexity as quickly as possible in 45 seconds. Test-retest reliability between Forms A and B of the TOWRE for the age group studied equals or exceeds .91 as reported by the test authors.

Gray Oral Reading Test. The Gray Oral Reading Test—Fourth Edition (Wiederholt & Bryant, 2001; [GORT-4]) assesses the student's ability to read connected text through a series of 14 increasingly difficult narrative passages that are read aloud by the student. While listening to the student read aloud, the examiner notes deviations from the text and the time taken to read each passage to arrive at the measure of fluency (FL). Reported reliability coefficients between forms A and B range between .88 and .97 for the age group assessed in this study.

Teacher Training

Two training sessions were held for the two teachers who taught classes in the treatment condition. The first session provided an overview of adolescent oral reading development followed by training in the procedures for implementing WCCR in the classroom. The second session held three days later was designed to reinforce WCCR implementation steps through researcher modeling. Teachers were also trained in a version of WCCR that included echo reading, where the teacher reads

aloud a line of text followed by the whole class reading aloud the same line, and antiphonal reading where the class is divided into two groups who then take turns reading the text back and forth until the passage is completed.

On the first day of strategy implementation, the researcher joined each teacher in her classroom and modeled the WCCR strategy for the teacher with her first treatment class. During each teacher's second treatment class, the researcher observed the teacher conducting the whole-class choral reading strategy. At the conclusion of class, the teacher and researcher consulted to review results of the implementation.

Strategy Implementation

Six passages, one for each week of the six-week WCCR treatment period, were chosen from the district literature textbook for sixth grade in close consultation with the two classroom reading teachers with each passage consisting of approximately 300 words. These passages were specifically chosen as the district and classroom expectation is that students should be able to fluently read material from the district-issued text, an expectation which these teachers felt was not being met. The participating classroom teachers shared their opinions with the researcher that the chosen passages were representative of narrative reading expectations in their classroom and school. It is believed by this author that experienced teacher input should be considered by researchers to aid in the ultimate usability of research by classroom practitioners. Passage reading levels on the Flesch-Kincaid reading scale (Flesch, 1951) as measured by the Coh-Metrix on-line tool (Graesser, McNamara, Louwerse, & Cai, 2004) ranged between 5.5 and 7.6 with a mean of 6.6 ($SD = .89$).

The steps used for implementation of WCCR are listed in Appendix A. After distributing the reading material and reviewing words anticipated to be difficult, teachers briefly discussed the passage to activate prior knowledge as an aid to comprehension. Teachers then modeled reading the passage aloud, paying particular attention to pronunciation, reading rate, prosody, and phrasing while students read along silently. When finished reading, teachers reviewed any words that the students wished to have pronounced. Teachers then began the class reading on cue by counting down aloud "three-two-one" after which all students would begin reading aloud in unison, that is, with one voice. While reading aloud so that all in the class could hear, teachers simultaneously listened for words and phrases that students had difficulty pronouncing. Teachers were cognizant to maintain appropriate reading rate and prosody while reading aloud. Once the reading was completed, teachers again reviewed difficult words and phrases in order to reinforce appropriate pronunciation. On Monday, the passage was read aloud twice by students to

reinforce appropriate pronunciation, prosody, and rate. After the second reading, a brief discussion of the text took place to aid in comprehension. On Tuesday and Wednesday, teachers reviewed word pronunciation as necessary both before and after implementation of WCCR. Also on these days only one reading of the text was conducted. On Thursday and Friday, teachers employed one whole-class reading using either echo or antiphonal reading as a strategy to maintain interest and to build upon student familiarity and mastery with the text.

Treatment Fidelity

Throughout the six-week treatment period, procedural integrity checks using direct observation of 22 implementations of WCCR were conducted in order to assess the degree to which fidelity was maintained as described in the pre-intervention treatment sessions with teachers. Using a 3-point Likert scale ranging from 1 (low fidelity) to 2 (moderate fidelity) to 3 (high fidelity), two trained observers assessed four teacher and four student attributes pertinent to the implementation of WCCR strategy. Four additional teacher attributes were rated as either observed or not observed. The teacher attributes rated were the modeling of fluent reading before the initial whole-class reading on Monday, as well as the use of appropriate reading rate, pronunciation, and prosody. Additional behaviors noted as observed or not observed were conducting two whole-class readings on Monday, providing prereading instructions to the class regarding attention to items such as the prosodic elements of the text and reading with one voice, and beginning the class reading with a "three-two-one" countdown. Student attributes were observed during the whole-class reading of the passage and a determination was made as to how well the class performed regarding the use of appropriate reading rate, correct pronunciation, reading with prosody, and reading in unison. Cohen's kappa (1960) indicated an intercoder reliability of .96 on classroom observations.

Dosing

Dosing (Dressman, 1999; Juel & Minden-Cupp, 2000) can be viewed as the quantity of input of the independent variable, in this case WCCR. Dosing was tracked as part of the data collected during classroom observations for treatment fidelity. Throughout the six weeks of treatment, the average amount of time per week students spent actively reading text aloud through WCCR was 16 minutes. While complete daily implementation of WCCR intervention took longer, the actual input that is most critical to potential reading improvement is the length of time actually spent reading by students, not the various procedural elements of treatment administration.

Control group strategies

Two reading teachers and their classes were assigned to the control condition. Reading strategies were not assigned to these teachers as part of the study, and as such, they implemented the reading curriculum per their normally planned instruction. Interviews with both teachers prior to treatment indicated that neither planned to implement WCCR in their classes. In order to assess the specific strategies that were implemented, two trained observers spent one day per week in each class to note implemented reading strategies for a total of 12 observations. Observation days were rotated so that all five days of the week were observed with Tuesday being observed twice by the observation team. An observation checklist was used by each observer that allowed for the recording of observed fluency strategies with implementation time noted in minutes. Additionally, the observer rated the level of implementation on a 3-point Likert scale as poor, proficient, or exemplary. In control classroom one, four strategies were observed over the six observation days consisting of independent silent reading, popcorn reading, reader's theatre, and paired reading. Implementation time for all observed strategies averaged 14 minutes per day. For silent and popcorn reading (a version of round-robin reading), implementation was rated as poor, while for reader's theatre and paired-reading implementation was proficient.

Control classroom two used three strategies over the observation days that consisted of paired reading, recorded reading using audio CDs, and popcorn reading. The average time spent on these strategies during each day observed was 17 minutes. Implementation levels varied from proficient for paired reading, to poor for recorded reading due to students who were off-task, to proficient for popcorn reading. Students took four to five minutes to eventually become organized and settle into paired reading. Popcorn reading was the most organized as it involved the highest degree of teacher oversight throughout the strategy. Recorded reading using audio CDs was poorly implemented as several students had to share books and several others engaged in various forms of disruption. After each observation the two observers reviewed their coding in order to resolve any divergence. Cohen's kappa (1960) indicated an intercoder reliability of .89 for these classroom observations.

Results

Means and standard deviations for the dependent variables are listed in Table 1. Bivariate correlations between the three dependent variables are listed in Table 2 and all were significant at $p < .01$. Correlations between the three variables exceeded .68, suggesting that PDE, SWE, and FL are highly related. Results by treatment group are shown in Table 3.

Table 1. Pre- and Posttest Descriptive Statistics by Reader Group

| Measure | All Students (n = 112) | | Treatment (n = 54) | | Control (n = 58) | |
|---------|---------------------------|-------------------|-----------------------|-------------------|---------------------|-------------------|
| | Pretest M(SD) | Posttest M(SD) | Pretest M(SD) | Posttest M(SD) | Pretest M(SD) | Posttest M(SD) |
| PDE | 98.1(13.6) | 98.2(14.3) | 99.9(13.6) | 101.7(4.4) | 96.4(13.4) | 94.9(13.6) |
| SWE | 99.1(11.5) | 97.9(10.4) | 100.6(12.7) | 99.5(11.3) | 99.7(10.2) | 96.4(9.2) |
| FL | 8.6(3.3) | 9.6(3.4) | 9.6(3.6) | 10.6(3.4) | 8.3(2.6) | 8.6(3.2) |

Note: PDE = phonological decoding efficiency; SWE = sightword efficiency; FL = oral reading fluency

Table 2. Intercorrelations of the Observed Variables

| Scale | 1 | 2 | 3 |
|-------|-------|-------|-----|
| 1 PDE | 1 | | |
| 2 SWE | .727* | 1 | |
| 3 FL | .737* | .686* | 1 |
| M | 98.1 | 99.1 | 8.9 |
| SD | 13.6 | 11.5 | 3.1 |

PDE = phonological decoding efficiency; SWE = sightword decoding efficiency; FL = fluency; All coefficients are significant at $p < .01$.

Table 3. Multivariate and Univariate Analyses of Variance F Ratios for the Dependent Variables by Group

| Source | MANOVA | Univariate | | |
|---------------------|------------|------------|------------|------------|
| | | PDE | SWE | FL |
| Readers F (df) | $F(3,108)$ | $F(1,110)$ | $F(1,110)$ | $F(1,110)$ |
| Treatment Group (T) | 3.87* | 7.64* | .03 | 7.79** |
| MSE (d) | (.38) | 19.04(.50) | 24.71 | 1.44(.64) |

Note: F ratios are Wilk's approximation of Fs. MANOVA = multivariate analysis of variance. PDE = phonological decoding efficiency; SWE = sightword efficiency; FL = Fluency.

* $p < .05$. ** $p < .01$

To assess the dependent variables for pretreatment group equivalence, an analysis of variance (ANOVA) utilizing a Bonferroni adjustment to control for Type I error was conducted and found to be nonsignificant for all three variables (Stevens, 2009). To assess potential changes to the three dependent variables due to WCCR, a two-step design was conducted where a 2 (group) x 2 (trial) MANOVA was conducted on the pre- and posttest measures to assess overall changes between the treatment and control groups. Following a significant MANOVA test, a follow-up univariate analysis was conducted to determine on which dependent measures change occurred. Effect sizes using Cohen's *d* (1988) from *F*-tests are computed and reported when the corresponding *F*-statistic is significant. Nomenclature for interpretation of effect size for *F* is adopted where a small effect equals .1 - .3, moderate effects are between .31 and .79, while large effects exceed .79.

A significant MANOVA for WCCR was found, $F(3, 108) = 3.87, p < .05, d = .38$ (medium effect) suggesting that changes occurred within the dependent variables. Univariate results indicate that those in the treatment group made significant gains on PDE, $F(1,110) = 7.64, p < .05, d = .50$ (moderate effect), reflecting an improved ability to decode words. On the measure of oral reading fluency, students in the treatment group made significant gains FL, $F(1,110) = 7.79, p < .01, d = .64$ (moderate effect), suggesting that they had improved in their ability to fluently read aloud connected text.

Teacher Perceptions

To explore teacher perceptions regarding WCCR, Ms. Merton and Ms. Castle (pseudonyms), the two reading teachers who implemented WCCR within the treatment condition were interviewed. Both teachers reported that WCCR was well received by their students. Ms. Merton commented that "When we started, around Wednesday, the students moaned a little bit, but after we got into the groove of it, they really enjoyed it." Ms. Castle added that "My students did the same thing and even after it was over, the kids asked me why we didn't have anything more to read." Regarding implementation of WCCR Ms. Merton said that "I really enjoyed it and I think it motivated the students" while Ms. Castle added that "it was really easy."

Ms. Castle also reported that she felt that WCCR helped her students in learning to read text containing unfamiliar syntax:

They would stumble over a combination of words that were difficult for them to read. If you took the words out individually they could pronounce them, but it was the words in that specific context and order that they kind of stumbled over and they wouldn't read them

fluently, it was just kind of mumbled. By Friday you could hear the class reading words more fluently than they stumbled with on Monday.

Both teachers noticed increases in prosodic reading (Rasinski, 2004; Schreiber, 1980, 1991) by their students that they attributed to WCCR. Ms. Merton said that her students became “Much better at expressing what they were reading rather than just calling words.” She went on to explain how important expressive modeling of reading text was in developing prosody in her students:

Sometimes they would just read the words, so I tried very hard to model expressive reading and would almost be over-animated when I would read it. I would tell them to echo me and emulate the way I’m reading this to you.

Ms. Merton added that her students were “picking up not only the pronunciation of the word and syntax, but also getting expression and feeling.”

Finally, both teachers addressed how they used the Gradual Release of Responsibility model (Pearson, 1985; Pearson & Gallagher, 1983) with the WCCR strategy. Ms. Castle said that she would “Withdraw my oral reading support by speaking more softly and allowing the class to carry the reading on their own.” Ms. Merton agreed saying, “I would draw back my support as the class was able to read the passage on their own.” Ms. Merton concluded the interview by saying that “I thought the strategy was great. I learned a lot from it and I would definitely, definitely use it from now on.”

Student perceptions

A post treatment focus panel consisting of five students randomly chosen from the treatment group was interviewed in order to evaluate student reaction to WCCR. Of these five students (all names are pseudonyms), Katheryn was a proficient reader while Tiara, Kendrick, Jamal, and Chris all struggled with reading, although none had been diagnosed with a reading disability. These students were asked to discuss the following prompts:

1. How did the daily choral readings affect you as a reader?
2. What is your perspective on practicing reading by participating in choral reading?

Responses to the first question were varied. For example, Katheryn stated that she thought that choral reading “Was fun” because she enjoyed reading and read often at home. Chris commented that when choral reading first began, he “Didn’t like it” and “Didn’t want anyone to hear me reading.” Kendrick agreed with this comment and stated that he “Read low” so as not to be heard by other students.

On the other hand, Tiara commented that “It didn’t really matter if you didn’t like reading, we were part of the class so we kind of had to do it.” Both Chris and Kendrick agreed with her statement. Jamal, who remained quiet until queried by the researcher, added the perspective that some teachers that he had in earlier grades would have them read aloud in class. He added that WCCR was “Okay” because he “Didn’t have to read in front of the whole class” and that some of the stories were “Alright.”

The second question asked these students what they thought about practicing reading through WCCR. While by this time the group had gotten more comfortable with the interview, this question seemed to puzzle the students. Tiara broke the ice when she said that she never thought about “Practicing reading” but that “When I think about it, I guess that’s what we were doing.” Chris followed up by saying that although he “Didn’t want to do it at first,” he could tell that he “Got better at reading the story,” especially “Near the end of the week.” On the idea of practice, Jamal volunteered that “I could tell that I got better around Wednesday or Thursday.” Katheryn observed that she could “Hear the class come together” and that “Kids around me started reading a little louder.” Kendrick suggested that he “Realized that no one was really paying attention to me” and so he felt like “I could read and not worry about what other kids thought about me.” Kendrick also liked the way he could “Hear the teacher reading” because it helped him with some words that he didn’t know. Katheryn ended the conversation with an insight about her teacher, Ms. Castle: “She was good at getting us to read together.”

Discussion

The purpose of this study was to examine the effects of WCCR on sixth-grade students within the context of the language arts classroom. Study results suggest that readers benefited from WCCR when using a repetitive-text strategy through improvement in both the underlying phonological decoding process and in oral reading fluency with moderate effect sizes. Teachers reported that implementation of WCCR was simple and that students generally appeared to enjoy participating and that they observed a noticeable improvement on the part of students in both prosodic reading and in the ability to read text containing unfamiliar syntactic structures. Overall, teachers thought that WCCR was an effective strategy that helped improve oral reading in their students. While some students suggested an initial reluctance to participate in WCCR, they thought that practicing reading seemed to pay off with improved reading. Student interviews suggest that WCCR may provide some degree of psychological cover for struggling readers in that the whole-group

aspect of WCCR appears to provide a sort of tent of anonymity, meaning students were free from potential peer ridicule of their poor oral reading skill because no student was ever singled out. This aspect may allow students the freedom to practice reading aloud within WCCR without suffering a loss of self-esteem.

While readers improved in applying the phonological code, they did not expand their sightword inventory. One possible explanation for this outcome could be that this implementation of WCCR made use of repetitive text where one passage was used per week. A wide-reading strategy that employed a different text each day may have expanded the total number of unique words read by the student and resulted in increases in sight word efficiency (SWE). In sum, the findings of this study suggest the efficacy of WCCR with narrative text as a strategy to improve oral reading proficiency in sixth-grade students. Finally, this study specifically documents the effects of eyes-on-text input consisting of 16 minutes of WCCR dosing per week resulting in significant phonological decoding and fluency gains for these sixth-grade students.

Chall's (1996) stage three, that of confirmation and fluency, suggests that reading practice is required by students to become unglued from the decoding process. Other researchers also suggest that practice is a prerequisite for children to become better readers (Adams, 1990; LaBerge & Samuels, 1974; Logan, 1988) and WCCR provides monitored practice to assist students in this process. While the idea of time-with-text is pertinent to the ungluing process due to the reciprocal relationship between phonological knowledge and reading practice, where one strengthens or otherwise improves the other (Perfetti, Beck, Bell, & Hughes, 1987), the question remains as to the amount of practice required for such changes to occur. Along this line, Anderson, Wilson, and Fielding (1988) report that readers at the 20th percentile spend about 3.1 minutes per day reading while students at the 50th percentile spend about 12.9 minutes. Within the present study, all students in the treatment group spent an additional 16 minutes per week with eyes-on-text. If the results reported by Anderson et al. (1988) are even approximate, WCCR increased the time that readers spent with eyes-on-text. The 16 minute-per-week input in this study resulted in an output of moderate gains for decoding knowledge and oral reading fluency. The question must then be asked that if the duration of treatment were increased from 16 minutes per week to a significantly greater amount such as 25 minutes per week or more, how would decoding indicators change? For example, what would be the result if WCCR and other known effective oral reading fluency strategies were employed with efficacy in two, or even three content classes over the course of a school year that effectively doubled or tripled the dosing input? This is a question for future research.

Teaching Implications

WCCR was found to be easily implemented by teachers. Classroom observations suggest that teachers implementing the strategy paid close attention to modeling appropriate oral reading, both when introducing a passage and during the whole-class reading of the text. Teacher modeling during WCCR is important as it provides students an immediate expert model for correctly pronouncing unknown or difficult words, appropriate rate, and prosody. Beyond the word level, modeling aloud may also assist students in the reading of whole syntactic units, a characteristic of fluent readers (Klauda & Guthrie, 2008). An area that teachers may wish to pay particular attention to is the motivational effect that encouraging comments from the teacher may have on students. This element of teacher motivation and enthusiasm, while difficult to measure in the classroom, should be recognized as potentially adding to the overall motivational atmosphere that may contribute to student success with WCCR.

While this study employed only the repeated-reading of narrative text within WCCR, teachers may consider expanding this strategy to other text genres, to extending the amount of practice time, and to incorporating a wide-reading strategy. One advantage of WCCR is its adaptability to various texts and genres (Paige, 2008). For example, within a content classroom such as science, a trade book closely aligned with the curriculum could be introduced and read aloud using WCCR by simply displaying the text through the use of an overhead projector. Daily or frequent readings of the book on a nonrepetitive basis, meaning the book is read in a consecutive, page-by-page manner, enables the teacher to expand and deepen student content knowledge while improving oral reading fluency with expository text. The concept of using WCCR for distributed practice across content classes is a possible strategy to increase student time-with-text, deepen content knowledge, and contribute to reading growth on a school-wide basis.

Study Limitations

Results of the present study should be considered in light of several inherent limitations. The four sixth-grade reading teachers within the study school were randomly assigned to one of the two experimental conditions. However, due to this small number of teachers, it is possible that a potential teacher effect could impact results either positively or negatively. Secondly, while teachers and their respective classes were randomly assigned to treatment conditions, students were not so assigned, leaving open the possibility for violations of internal validity.

Future Research

The major finding of this study was that daily implementation of WCCR for 16 minutes per week of eyes-on-text oral reading resulted in increases in decoding knowledge and oral reading fluency. This dosing of oral reading is similar to that found to be efficacious in other studies (Homan et al., 1993). Additional research should be conducted so as to carefully match the duration of eyes-on-text training with various dependent measure outcomes. When investigating oral reading strategies, the effect on reader motivation and its subsequent influence on reading outcomes should also be explored. Research into the use of WCCR with other methods of monitored oral reading strategies should also be conducted to identify strategy blends that optimize the development of oral reading proficiency in struggling readers.

Conclusion

While WCCR may be a strategy more familiar to elementary school teachers, it is a strategy that lends itself to implementation with adolescent readers. As long as students arrive in middle school with languid reading skills, teachers will be challenged by their students’ difficulty in accessing texts that ultimately restrain progress within the curriculum. This leaves teachers with one of three choices with the first being to provide no support for struggling readers and to continue instruction as though all students have equal access to text. A second option is to modify instruction to fit the reduced reading competency of struggling learners. A third option, and the one advocated here, is to assist these readers by employing strategies that help them to increase their literacy skills, thus gaining greater access to the grade-level literacy of the content area. A final note is that the irony of WCCR is that the one thing struggling readers want to avoid, reading aloud in class, appears to be well tolerated when completed as part of a whole-class activity.



References

- Adams, M. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Anderson, J. R. (1992). Automaticity and the ACT theory. *American Journal of Psychology*, 105(2), 165-180.
- Anderson, R. C., Wilson, P. T., & Fielding, L. G. (1988). Growth in reading and how children spend their time outside of school. *Reading Research Quarterly*, 23(3), 285-303.
- Biancarosa, G., & Snow, C. E. (2006). *Reading next-A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York* (2nd ed.). Washington, DC: Alliance for Excellent Education.
- Cassidy, J., & Cassidy, D. (December 2009/January 2010). What's hot for 2010. *Reading Today*, 27(3), 1, 8, 9.
- Chall, J. S. (1996). *The stages of reading development* (2nd ed.). Fort Worth, TX: Harcourt-Brace.
- Chall, J. S., & Jacobs, V. A. (2003). Poor children's fourth-grade slump. *American Educator*, 27(1), 14-15, 44.
- Cohen, J. A. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, 20, 37-46.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, N J: Erlbaum.
- Compton, D. L., Appleton, A. C., & Hosp, M. K. (2004). Exploring the relationship between text-leveling systems and reading accuracy and fluency in second-grade students who are average and poor decoders. *Learning Disabilities Research and Practice*, 19(3), 176-184.
- De Jong, P. F., & van der Leij, A. (2002). The effects of phonological abilities and linguistic comprehension on the development of reading. *Scientific Studies of Reading*, 6, 51-77.
- Dowhower, S. L. (1987). Effects of repeated reading on second-grade transitional readers' fluency and comprehension. *Reading Research Quarterly*, 22, 389-406.
- Dressman, M. (1999). On the use and misuse of research evidence: Decoding two states' reading initiatives. *Reading Research Quarterly*, 34(5), 258-285.
- Faulkner, H. J., & Levy, B. A. (1994). How text difficulty and reader skill intersect to produce differential reliance on word and content overlap in reading transfer. *Journal of Experimental Child Psychology*, 58, 1-24.
- Flesch, R. F. (1951). *How to test readability*. New York: Harper.
- Graesser, A., McNamara, D. S., Louwerse, M., & Cai, Z. (2004). Coh-Matrix: Analysis of text on cohesion and language. *Behavioral Research Methods, Instruments, and Computers*, 36, 193-202.
- Homan, S., Klesius, P., & Hite, S. (1993). Effects of repeated readings and non repetitive strategies on students' fluency and comprehension. *Journal of Educational Research*, 87, 94-99.

- Jenkins, J. R., Fuchs, L. S., Espin, C., van den Broek, P., & Deno, S. L. (2000). Accuracy and fluency in list and context reading of skilled and RD groups: Absolute and relative performance. *Learning Disabilities: Research and Practice, 18*(4), 237-245.
- Jorm, A. F., & Share, D. L. (1983). Phonological recoding and reading acquisition. *Applied Psycholinguistics, 4*, 103-147.
- Juel, C., & Minden-Cupp, C. (2000). Learning to read words: Linguistic units and instructional strategies. *Reading Research Quarterly, 35*, 458-492.
- Klauda, S. L., & Guthrie, J. T. (2008). Relationships of three components of reading fluency to reading comprehension. *Journal of Educational Psychology, 100*(2), 310-321.
- Koskinen, P. S., & Blum, I. H. (1986). Paired repeated reading: A classroom strategy for developing fluent reading. *The Reading Teacher, 40*, 70-75.
- Kuhn, M. R., & Stahl, S. A. (2003). Fluency: A review of developmental and remedial practices. *Journal of Educational Psychology, 95*(1), 3-21.
- LaBerge, D., & Samuels, S. J. (1974). Toward a theory of automatic information processing in reading. *Cognitive Psychology, 6*, 293-323.
- Logan, G. D. (1988). Toward an instance theory of automatization. *Psychological Review, 95*(4), 492-527.
- Mathson, D. V., Allington, R. L., & Solic, K. (2006). Hijacking fluency and instructionally informative assessments. In T. Rasinski, C. Blachowicz, & K. Lems (Eds.), *Fluency instruction: Research-based best practices* (pp. 106 -119). New York: Guilford.
- National Center for Education Statistics. (2009). *The nation's report card: Reading 2009* (NCES 2010-458). Institute for Education Sciences, U.S. Department of Education, Washington, DC.
- National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. (National Institute of Health Pub. No. 00-4769). Washington, DC: National Institute of Child Health and Human Development.
- O'Shea, L. J., Sindelar, P. T., & O'Shea, D. J. (1985). The effects of repeated readings and attentional cues on reading fluency and comprehension. *Journal of Reading Behavior, 17*(2), 129-142.
- Paige, D. D. (2006). Increasing fluency in disabled middle school readers: Repeated reading utilizing above grade level reading passages. *Reading Horizons, 46*(3), 167-181.
- Paige, D. D. (2008). *An evaluation of whole-class choral reading on oral reading fluency in struggling adolescents*. Unpublished doctoral dissertation, University of Memphis.
- Paige, D. D. (in press). Engaging struggling adolescent readers through situational interest: A model proposing the relationships among extrinsic motivation, oral reading proficiency, comprehension, and academic achievement. *Reading Psychology*.
- Pearson, P. D. (1985). Changing the face of reading comprehension instruction. *The Reading Teacher, 38*(8), 724-738.

- Pearson, P. D., & Gallagher, M. C. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology, 8*(3), 317-344.
- Perfetti, C. A. (1992). The representation problem in reading acquisition. In P. B. Gough, L. C. Ehri, & R. Treiman (Eds.), *Reading acquisition* (pp. 145-174). Hillsdale, NJ: Erlbaum.
- Perfetti, C., Beck, I., Bell, L., & Hughes, C. (1987). Phonemic knowledge and learning to read are reciprocal: A longitudinal study of first grade children. *Merrill-Palmer Quarterly, 33*, 283-319.
- Pikulski, J. J., & Chard, D. J. (2005) Fluency: Bridge between decoding and reading comprehension. *The Reading Teacher, 58*(6), 510-519.
- Rasinski, T. V. (1989). Fluency for everyone: Incorporating fluency instruction in the classroom. *The Reading Teacher, 42*, 690-693.
- Rasinski, T. V. (1990). Effects of repeated reading and listening-while-reading on reading fluency. *Journal of Educational Research, 83*(3), 147-150.
- Rasinski, T. V. (2004). *Assessing reading fluency*. Honolulu, HI: Pacific Resources for Education and Learning.
- Rasinski, T. V., & Padak, N. D. (2005). Fluency beyond the primary grades: Helping adolescent struggling readers. *Voices From the Middle, 13*(1), 34-41.
- Rasinski, T. V., Padak, N. D., Linek, W. L., & Sturtevant, E. (1994). Effects of fluency development on urban second-grade readers. *Journal of Educational Research, 87*, 158-165.
- Rasinski, T. V., Padak, N. D., McKeon, C. A., Wilfong, L. G., Friedauer, J. A., & Heim, P. (2005). Is reading fluency a key for successful high school reading? *Journal of Adolescent & Adult Literacy, 49*(1), 22-27.
- Rayner, K., Foorman, B. R., Perfetti, C. A., Pesetsky, D., & Seidenberg, M. S. (2001). How psychological science informs the teaching of reading. *Psychological Science in the Public Interest, 2*, 31-73.
- Reichle, E. D., & Perfetti, C. A. (2003). Morphology in word identification: A word-experience model that accounts for morpheme frequency effects. *Scientific Studies of Reading, 7*(3), 219-237.
- Samuels, S. J. (1979). The method of repeated readings. *The Reading Teacher, 32*, 403-408.
- Schreiber, P. A. (1980). On the acquisition of reading fluency. *Journal of Reading Behavior, 12*, 177-186.
- Schreiber, P. A. (1991). Understanding prosody's role in reading acquisition. *Theory Into Practice, 30*(3), 158-164.
- Schreiber, P. A., & Read, C. (1980). Children's use of phonetic cues in spelling, parsing, and - maybe - reading. *Bulletin of the Orton Society, 30*, 209-224.
- Schwanenflugel, P. J., Hamilton, A. M., Kuhn, M. R., Wisenbaker, J. M., & Stahl, S. A. (2004). Becoming a fluent reader: Reading skill and prosodic features in the oral reading of young readers. *Journal of Educational Psychology, 96*(1), 119-129.

- Share, D. L. (1995). Phonological recoding and self-teaching. Sine qua non of reading acquisition. *Cognition*, 55, 151-218.
- Snow, C. E., Martin, T., & Berman, I. (2008). State literacy plans: Incorporating adolescent literacy. *Harvard Educational Review*, 78(1), 211-230.
- Stevens, J. P. (2009). *Applied multivariate statistics for the social sciences* (5th ed.). New York: Routledge.
- Torgesen, J. K. (1999). Phonologically based reading disabilities: toward a coherent theory of one kind of learning disability. In R. J. Sternberg & L. Spear-Swerling (Eds.), *Perspectives on Learning Disabilities* (pp. 231-262). New Haven: Westview Press.
- Torgesen, J. K., & Hudson, R. F. (2006). Reading fluency: Critical issues for struggling readers. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about fluency instruction* (pp. 130-158). Newark, DE: International Reading Association.
- Torgesen, J. K., Rashotte, C. A., & Alexander, A. (2001). Principles of fluency instruction in reading: Relationships with established empirical outcomes. In M. Wolf (Ed.), *Dyslexia, fluency, and the brain* (pp. 333-356). Timonium, MD: York Press.
- Torgesen, J. K., Wagner, R. K., & Rashotte, C. A. (1999). *Test of word reading efficiency*. Austin, TX: Pro-Ed.
- Walker, B. J., Mokhtari, K., & Sargent, S. (2006). Reading fluency: More than fast and accurate reading. In T. Rasinski, C. Blachowicz, & K. Lems (Eds.), *Fluency instruction: Research-based best practices* (pp. 86-105). New York: Guilford Press.
- Wiederholt, J. L., & Bryant, B. R. (2001). *Gray oral reading test* (4th ed.). Austin, TX: Pro-Ed.
- Young, A. R., Bowers, P. G., & MacKinnon, G. E. (1996). Effects of prosodic modeling and repeated reading on poor readers' fluency and comprehension. *Applied Psycholinguistics*, 17, 59-84.

Appendix A

Procedures for Classroom Implementation of Whole-Class Choral Reading Using Repeated-Reading of Text

Before Reading

1. Distribute reading passages to students (or display on overhead).
2. Ensure that all students are on the correct passage.
3. Briefly discuss text to aid comprehension.
4. On Monday, model aloud a fluent reading of the entire passage while students read along silently.

5. Review model reading by reading aloud target words that may not be familiar to students.
6. Teacher reminds students to observe prosodic elements of oral reading such as commas, periods, question marks, etc.

During Reading

7. Teacher counts down aloud to begin students reading on cue (“Three-two-one”).
8. Students and teacher read passage aloud with one voice.
9. Teacher is listening for reading miscues, proper phrasing, and difficulties with text while simultaneously modeling fluent reading.

After Reading

10. Through modeling aloud, review pronunciation of words and phrases that were difficult for students.
11. Teacher may have the entire class reread part or all of the passage as necessary to reinforce appropriate oral reading.
12. On Monday review important vocabulary and meaning of text to aid comprehension.

About the Author

As an Assistant Professor of Education at Bellarmine University, Dr. Paige teaches graduate courses in literacy assessment, research, and measurement. Dr. Paige’s research focuses on the description of adolescent literacy behaviors and the measurement of instructional strategies that can assist struggling readers.

