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A Comparison of Oral Reading Fluency Interventions: Group-based Fluency Trials Versus Individualized Repeated Readings

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In Psychology with Honors

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Abstract

Reading is a critical skill needed to achieve success in nearly every aspect of life. Students who have difficulty reading in the early grades have a greater chance of high school dropout, a negative attitude toward reading, and even a decreased likelihood of adequate employment. Unfortunately, well over half of all elementary school students read at or below a basic level. Although many factors are involved in becoming a proficient reader, research shows that fluency is one of the most important factors for reading at a mastery level. Oral reading fluency, the speed and accuracy with which a student reads aloud, has also been related to gains in comprehension. This study compared the effects of an already established intervention, repeated reading, to a newly designed intervention, fluency trial, on students' oral reading fluency and comprehension. Four third-grade students reading below grade level participated. Using an alternating treatments design, students were assessed on four first grade passages at baseline and then read these same passages during each of the two intervention conditions. Results showed that all students' oral reading fluency and comprehension on the four passages improved during both intervention conditions, with three of the students benefiting slightly more from the fluency trial than from the repeated reading intervention. Implications of these results for the management of classroom reading interventions are discussed.

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A Comparison of Oral Reading Fluency Interventions: Group-based Fluency Trials Versus Individualized Repeated Readings

In today's society it is nearly impossible to achieve success in any domain without the basic skill of reading. Specifically, poor reading abilities early on may lead to detrimental societal and economic disadvantages in later years. Studies that have addressed potential outcomes have reported a greater chance of high school dropout, a negative attitude toward reading, and a decreased likelihood of finding a financially adequate job (Begeny & Martens, in press; Snow, Burns, & Griffin, 1998). For example, a survey of more than 3,000 employers conducted across the nation found that only 5-10% of the lowest-skilled jobs had openings available for applicants with poor literacy skills (Simmons & Kameenui, 1998). Reading affects all aspects of life, whether it be reading a menu at a restaurant or reading the street signs on a highway. Thus, lacking the ability to read early in life can prove to be costly in the future.

Unfortunately, many children at all ages are struggling with this skill. According to the National Center for Education Statistics (NCES, 2003), well over half of all fourth grade and eighth grade students, 68% and 71%, respectively, read at or below the basic level of achievement. The basic level, as reported by the NCES, "denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade" (2003). Moreover, low levels of national reading achievement have been consistent over time. The latest study conducted by the National Assessment of Educational Progress (NAEP) found that over the last 13 years since the first assessment was completed, neither fourth nor eighth grade students' average scores had

significantly changed. Since the last assessment in 2003, eighth graders' scores had actually dropped slightly (Perie, Grigg, & Donahue, 2005). The aforementioned studies discuss reading scores in general, but there are many components of reading with which students struggle. Without proficiency in the specific skills needed to read, the general task of reading is nearly impossible.

Importance of Fluency

One of the most crucial components of proficient reading is fluency. Fluency has been defined as the speed and accuracy with which a student reads text orally (Chard, Vaughn, & Tyler, 2002). According to Johnson and Layng (1996), there are five fluency aims that all readers will meet if they are truly reading fluently. These aims are selected to predict that learners will:

- (a) *remember* and perform the skill, at the frequency aim, after a significant period of no practice (a month or more);
- (b) show performance *endurance*, that is, perform the skill at the frequency aim for periods of time that are longer than the timing period used during practice;
- (c) perform the skill with *stability*, that is, performance will not be easily distracted;
- (d) easily *apply* the skill as a prerequisite or component of a more complex performance to be learned; and
- (e) demonstrate increasing capacity to learn skills instantly and on their own, as they move through a subject matter (pp. 285-287).

In terms of reading, this means that a reader should be able to read a passage fluently one month after learning it; read passages fluently for long periods of time; read through any distractions without stopping or becoming unfocused; use knowledge of easier passages to read more difficult texts; and read new passages

never before seen. From the five fluency aims just described, the mnemonic RESAA was created representing retention (R), endurance (E), stability (S), application (A), and adduction (A) (Johnson & Layng, 1996). Before fluency occurs, students lack the ability to maintain a stable performance for extended amounts of time (e.g., McDowell & Keenan, 2001). Fluency is critical to demonstrate true mastery (Binder, 1988) and one teacher in particular, Elizabeth Houghton, a pioneer of fluency technology, believes that “meeting fluency standards also increases creativity, creates high energy, increases time management, and is the best natural reinforcer for all it makes possible” (personal communication as cited in Johnson & Layng, 1996).

Another key benefit to fluent reading is improved comprehension. Rapid reading of high-frequency words and rapid decoding will inevitably enhance text understanding and are critical for typical reading development (Chard et al., 2002; Chafouleas, Martens, Dobson, Weinstein, & Gardner, 2004). When reading becomes automatic and is no longer a skill to be learned, readers can focus more of their attention on processing the meaning of the words being read (Begeny & Martens, in press). Shapiro (1996) reports that “dysfluent readers will spend significant amounts of time struggling through text, only to discover at the end of the passage that they cannot remember a thing they have read” (p. 166).

Comprehension of reading material is crucial for academic development beginning especially in the later elementary years because it becomes the basis for a substantial amount of learning in secondary education (Guthrie et al., 2004).

Fluency-Based Interventions

Due to the prevalence of poor oral reading fluency, researchers have examined the effects of various fluency-based interventions (e.g., Daly & Martens, 1994). One intervention that has been shown to be particularly effective at improving children's oral reading fluency is repeated reading (RR). Daly, Martens, Hamler, Dool, and Eckert (1999) compared several different treatment strategies to improve student's reading fluency as assessed by the number of correctly read words per minute. The different treatments that were examined were a reward for rapid reading, repeated readings (RR), listening passage preview (LPP), high-content overlap passages, sequential modification (SM), and lowering the difficulty of the passages being read by giving the students easier materials to read. Participants were four regular education students who received each of the treatment components in an alternating treatment design. Daly et al. found that all of the students' fluency improved the most with any condition involving RR over any condition that did not incorporate this procedure. Two of the students benefited the most from the RR/SM treatment and one of the students performed the best during the LPP/RR/SM condition.

In a meta-analysis of fluency-based interventions, Chard et al. (2002) identified 24 different studies that matched their selection criteria (i.e., students targeted were elementary-aged and diagnosed with a learning disability, the purpose of the study was related to reading fluency, and the study was published in the last 25 years). RR proved to be effective in each of the studies that evaluated it, leading to improvements in reading rate, accuracy, and comprehension. From these studies it was found that "developing students' rapid processing of print by reading target passages more than once is often effective as

a means to improve accuracy and speed, and ultimately leads to better understanding of text” (p. 402). Also, adding a modeling component seems to be even more effective (Rose & Beattie, 1986; Smith, 1979). Rose and Beattie (1986) found comprehension to improve significantly with modeling, and hypothesized that it might be due to the students having the opportunity to first listen and focus on the content of the passage before reading the words themselves. Although comprehension was not the main focus of any of these interventions, fluency improvements led to improved comprehension in almost all cases (Chard et al., 2002). These authors concluded that fluency is improved by frequent opportunities to practice text, explaining why RR is effective. The National Reading Panel (2000) also examined repeated reading effectiveness and concluded that reading the same text several times is perhaps the best-documented strategy to improving fluency.

Purpose of the Present Study

Although RR interventions have been demonstrated to be effective, one key limitation exists with this approach. RR has primarily been an individually administered intervention, requiring one-on-one attention from a teacher, particularly when using modeling. Very few studies have evaluated fluency-based interventions in a group format (Begeny & Martens, in press), and even fewer have specifically targeted RR. Begeny and Martens (in press) focused on developing a flexible group-based reading intervention that incorporated many components, one of which was RR. RR proved to be an effective component of this intervention package, yet even in this study, RR was not implemented in a group setting. Whereas the intervention did involve some group-based training

techniques, the RR component was carried out by having the students pair up with one another. The two students then took turns reading the passage until each student read the passage twice. Although RR was not facilitated individually by a teacher, it was also not done in a group, either. This study is the closest approximation to date evaluating a group-based RR intervention.

A group-based intervention that is similar in effectiveness to repeated reading but is more efficient would be a useful addition to the literature. It is difficult for a teacher to assist each of her students individually, and consequently difficult for students to get the attention that they need. It has been demonstrated that students benefit from opportunities to practice in order to improve fluency (Daly et al, 1999; Martens & Witt, 2004). When an individualized intervention is implemented in an average classroom of 20 students with only one teacher (NCES, 2001), students may not have enough opportunities to get the practice that they need. Thus, an intervention that could improve multiple students' oral reading fluency at once would be a great advantage to both teachers and students.

The purpose of this study was to evaluate a reading intervention with the potential to improve oral reading fluency as effectively as RR yet in a more efficient manner. This new intervention, fluency trial (FT), incorporated the benefit of RR (i.e., allowing for opportunities to practice text repeatedly) but was administered in a small group using a round-robin format. This format helped multiple students simultaneously since each student involved with the fluency trial was either being afforded frequent opportunities to practice reading the text aloud or was following along while listening to their peers read the text.

Hypothesis 1 was that student's oral reading fluency, as assessed by words correct

per minute (WCPM), would improve over baseline for both the FT and RR interventions. Hypothesis 2 was that data from the two intervention conditions would overlap or favor the FT procedure, showing it to be equally or more effective as the previously evaluated RR procedure. Hypothesis 3 was that with improvements in oral reading fluency, student's comprehension would improve as well.

Method

Participants and Setting

The participants of this study were four, third-grade students from an elementary school in Central New York. Three of the students were eight years old, and one student was nine years old. The students were selected by their teacher to receive additional reading practice as part of their regular instruction and based on curriculum-based screening indicating below-grade level oral reading fluency. Informed consent to conduct the study was obtained from the elementary school's principal and informed assent was obtained from the participating students. Although all participating students were reading below grade level (either one or two grade levels below), none of the students were diagnosed with a reading disability, were on medication, or were receiving special education services. All experimental sessions were conducted in the school library.

Materials and Screening Procedures

Curriculum-based measurement (CBM) procedures were used to obtain baseline measures of oral reading fluency (Shapiro, 1996). Four passages were developed using the Silver, Burdett, and Ginn (Pearson et al., 1989) reading series, all at the first grade level. Two copies of each passage were made for each

student; an examiner's copy that included a word count at the end of each sentence, and a second copy that was re-typed verbatim for the students to read. The word count on the researcher's copy was used so that the researcher could follow along with the student, marking WCPM. To aid in recording WCPM, researchers also had a pencil and stopwatch. All sessions were tape-recorded, and a protocol was used that had step-by-step instructions for each researcher to follow.

The students were asked to "do their best reading" while reading each screening passage aloud for one minute. The researcher recorded the number of words read correctly for each passage by counting the total number of words read in one minute and then subtracting the number of errors made. Errors included omitting words, saying the wrong word, reading the suffixes such as "-ed" or "-s" incorrectly, adding additional words not in the passage, or pausing for more than three seconds on a particular word and needed assistance from the researcher (Shapiro, 1996).

Student's comprehension was also assessed during screening and experimental sessions after each of the passages was read. Maze passages, similar to those described by Fuchs, Fuchs, Hamelett, and Ferguson (1992), were created directly from the passages that the students read using the following procedure. Starting after the first complete sentence, each seventh word was removed from the passage. Where the word should have been was a blank space, under which were three word choices. The students were asked to read the passage and circle the appropriate word that would complete the passage accurately. The two incorrect word choices were words that were similar in length but not in meaning

or sound. The percentage of correct words circled by each student on the maze passages was recorded as a measure of comprehension.

Experimental Design and Procedures

Each student's oral reading fluency and percent correct on maze passages on the four passages assessed at screening were used as baseline (A). Thus, baseline consisted of four data points, each corresponding to a different passage.

Using an alternating treatment design, students received one practice session for each passage, with passages assigned to one of two treatment conditions, repeated readings (RR) or fluency trial (FT). Thus, each treatment was applied to two passages. The sequence of treatments was the individualized RR treatment, group-based FT treatment, FT treatment again and another RR treatment session. The number of WCPM read by each of the participants and percentage of correct words circled on the maze passages were graphed to assess treatment effectiveness. Performance under both treatment conditions, FT and RR, was compared to baseline and to each other.

Baseline. As mentioned previously, baseline data were taken from the student's oral reading fluency (WCPM) and percent correct on maze passages that were administered during screening. Students were given each passage and asked to read orally for one minute while the researcher marked WCPM. After reading each of the passages, the corresponding maze passage was given to the students to complete.

Repeated readings (RR). The RR intervention was conducted as follows. The students were taken aside one by one to work individually with the researcher. The researcher first modeled the passage by reading the passage aloud

to the student. The students were asked to follow along with their fingers, reading the words to themselves as the researcher read to them. This served as the listening passage preview (LPP) component of the intervention. Once the researcher was finished with LPP, the students were then asked to read the same passage two times individually for practice. If a student came to a word that she did not know, the researcher waited three seconds and then assisted the student with the word by saying aloud the correct pronunciation. Each mistake that the child made or each word that a researcher had to assist with counted as an error. After all students completed RR, the researcher had the students read the passage once again while being assessed. Thus, as a post-test, the researcher followed along while the student read, marking WCPM.

Immediately afterward, the students were given the corresponding maze passage and a pencil to assess comprehension. The students were told before they began the post-test that if they “beat their score” by improving their WCPM from when they read the passage before LPP and RR, they would be able to pick a prize from the prize box. The prize box contained candy, pencils, stickers, games, and pads of paper, all approved by the teacher, from which the students chose. This intervention took approximately 10 minutes to administer.

Fluency trial (FT). The FT condition also began with a LPP component, but the researcher read the passage to the group of four students sitting in a circle while the students were asked to follow along. Once the LPP component was complete, the FT began. The FT consisted of a group administered, relay-race reading game. The group, including the students and the researcher, all sat in a circle. The researcher began reading the passage, and then after 15 seconds said,

“Next” and prompted the student seated to her left, to take over reading the passage from where the researcher left off. Each student was instructed to follow along in the passage reading the words to herself while another student was reading in order to successfully continue reading the passage when asked to do so. A prompt of “Next” by the researcher once again signaled when the next student in the circle (the student seated to the left of the previous student) should begin his/her turn. Each student read for 15 seconds. If during a turn a student came to the end of the passage, the student was instructed to continue reading from the beginning. If a student came to a word that she did not know or if a student lost her place, the researcher waited three seconds and then assisted the student with the word or indicated where the student should be reading from in the passage, respectively. These two instances both counted as errors recorded by the researcher. The students read for as long as it took for the group to read through the passage twice. Immediately afterwards, during the post-test phase, the students were taken out of the circle and were asked to read the passage again individually to assess gains in fluency. The researchers marked WCPM for each of the students. Identical to the RR treatment condition, the students were told that if they improved their WCPM from the pre-test, they would be able to choose a prize from the prize box. The students were also given a maze passage generated from the passage that they just read to assess comprehension.

Procedural Integrity and Interscorer Agreement

Procedural integrity was assessed for the number of steps that the researcher completed correctly on one repeated reading session and one fluency trial session (e.g., 50% of treatment sessions). (See Appendix A and B for sample

protocols of each condition). Procedural integrity was 96.9% for the repeated reading session and 100% for the fluency trial session and was calculated as the number of agreements on number of steps correctly completed divided by the total number of agreements plus disagreements multiplied by 100%. Interscorer agreement on how many words were read correctly per minute as well as the number of correct words circled on maze passages was assessed for two baseline sessions and two treatment sessions (50% of total sessions). Interscorer agreement for WCPM was conducted on a word-by-word basis and was calculated as the number of scoring agreements divided by the total number of agreements plus disagreements multiplied by 100%. This was calculated to be 99.2% (range = 93.1% to 100%). Interscorer agreement for correct words circled on maze passages was similarly computed as the number of scoring agreements divided by the total number of agreements plus disagreements multiplied by 100%. This was calculated to be 100%.

Results

Fluency

Figures 1 and 2 show the WCPM by each student during each condition. The mean WCPM by student and condition are shown in Table 1. Table 2 shows the mean percent gain in WCPM for each student. Mean percent gain represents how much each student's WCPM improved from baseline to intervention. It was calculated by subtracting the mean WCPM during baseline from the mean WCPM during each of the intervention conditions, and then dividing by the mean WCPM during baseline. Mean percent gain was also calculated to evaluate any increases in performance during FT over RR.

All four students showed increases in WCPM over baseline during the two intervention conditions. Overall, these increases were highest for Meghan with a mean percent gain of 57.7 during the FT condition and 52.6 during the RR condition, and lowest for Emma with a mean percent gain of 28.6 during FT and 11.9 during RR. Three of the four students, Billy, Meghan, and Emma, showed higher mean percent gains over baseline with the FT intervention, whereas only Annah showed higher gains with the RR intervention. These results were confirmed when comparing FT over RR. Specifically, there were positive gains when comparing FT over RR for Billy, Meghan, and Emma; only Annah showed a negative percent gain for this comparison. Thus, in terms of oral reading fluency, both FT and RR interventions were successful at increasing the four student's WCPM over baseline, with FT being slightly more effective than RR for three of the four students.

Comprehension

Originally, comprehension was going to be assessed by evaluating the percentage of correct words circled by each student on the maze passages. However, the percentage of correct words circled by each of the students was quite high during baseline making it difficult for improvements to be seen during either of the two interventions. In fact, during baseline, only 5 of the 16 passages read by all four students resulted in percentages less than 100%. For these 5 passages that did not result in 100% accuracy, the mean percentage of correctly circled words was 87.7% (range = 71.4% to 93.3%). Even though percentages of correctly circled words improved to 100% on all passages read by the four students during intervention except for one passage (Sheri circled 93.3% correctly

on one passage during a FT session), starting with such high percentages does not show overwhelming improvements.

After analyzing the percentages of correct words circled by each of the four students during both baseline and intervention, evaluating the total number of seconds needed to complete the maze passages was believed to be a better measure of comprehension. That is, the time needed to complete the maze passages decreased noticeably from baseline to intervention, and therefore was used as a measure of comprehension instead of percent accuracy.

Figures 3 and 4 show the time, in seconds, needed to complete the maze passages for all four students. The mean total seconds to complete maze passages by subject and condition are shown in Table 3. Table 4 shows the mean percent decrease in total seconds to complete the maze passages for each student, under each condition. Contrary to fluency, for comprehension the mean percent decrease, instead of gain, was calculated to represent how much less time it took for students to complete the maze passages during intervention conditions opposed to how long it took during baseline. This was calculated by subtracting the mean number of total seconds to complete maze passages during an intervention condition from the mean number of total seconds taken to complete maze passages during baseline and dividing by the mean number of seconds to complete maze passages during baseline. In addition, mean percent decrease was calculated to evaluate the decreases in time when comparing the FT and RR interventions.

All four students showed decreases in the total seconds taken to complete maze passages from baseline to when the maze passages were completed during

the two intervention conditions. During the FT intervention, Emma showed the largest decreases in time, with a mean percent decrease of 43.6, and Billy showed the smallest decrease with a mean percent decrease of 14.5. Meghan showed the greatest decrease in seconds to complete the maze passages during the RR intervention with a mean percent decrease of 35.2, while Annah showed the smallest decrease during this intervention with a mean percent decrease of 19.8. Three of the four students, Meghan, Emma, and Annah, showed larger mean percent decreases from baseline with the FT intervention, whereas only Billy showed larger decreases in time with the RR intervention. These results were evident when comparing FT to RR. Only Billy had a negative percent decrease when comparing the two interventions, indicating that he took longer to complete maze passages with the FT intervention than with the RR intervention. Thus, in terms of comprehension, both the FT and RR interventions were successful in decreasing the time taken to complete maze passages, with FT being more effective at decreasing time than RR for three of the four students.

Discussion

The purpose of this study was to compare a previously evaluated and proven effective reading intervention, RR, to a newly adapted one, FT. RR is a technique that has been used extensively in the past to improve students' oral reading fluency and comprehension. As RR is typically implemented, one student at a time will read a passage repeatedly to an adult. Although RR has been shown to successfully result in fluency gains, the process is an individualized effort which raises concerns over demands on teacher time. Fluency trial (FT) is a new method of improving oral reading fluency adapted to alleviate the problems that

can be associated with RR. FT shares the benefit of RR (i.e., opportunities to repeatedly practice text), yet is administered to a number of children at a time. This study examined whether a group-based reading intervention, FT, could be as effective or more effective than an individualized reading intervention, RR. Hypothesis 1 was that both interventions, FT and RR, would lead to improvements in the students' oral reading fluency, as assessed by words correct per minute (WCPM). Hypothesis 2 was that data from the two interventions would show the FT intervention to be equally or more effective as the previously evaluated RR intervention. Hypothesis 3 was that while improving oral reading fluency, the student's comprehension of the reading material would improve as well.

Results suggested that both interventions led to gains in the students' oral reading fluency over baseline providing support for Hypothesis 1. Increases in WCPM were seen from when the students read the passages during baseline to when the passages were read during both the FT and RR interventions. With respect to Hypothesis 2, FT was slightly more effective than RR for three of the four students. For Billy, Meghan, and Emma, increases in WCPM during the FT intervention were seen over the RR intervention. Finally, decreases in the total time taken to complete maze passages, a measure of comprehension, were seen from baseline during both FT and RR interventions, lending support for Hypothesis 3.

Limitations

There were several limitations of this study that need to be addressed. One limitation was the small number of data points in each condition. Examining

the students on only four passages does not give substantial data to establish strong effects. Also, the difficulty level of the passages could be another limitation. The students were not screened during baseline to determine what their instructional reading levels were. Instead, each student received the same passages to read, all at a first-grade difficulty level. Future research should take into consideration each student's reading level before implementing an intervention and appropriate passages based on their reading level should be administered. This would ensure that no ceiling effects, a phenomenon that occurs when a behavior is already at high levels so that further improvements of that behavior are difficult to accomplish, would occur. This was the case with three of the participants, Billy, Emma, and Annah, who were already reading at a mastery level of fluency on the passages given at baseline. According to Shapiro (1996), reading more than 60 WCPM on a first grade passage signifies a mastery level. In fact, all four of the students were reading at mastery levels on at least two of the passages during baseline.

Another limitation of this study was the location where the testing took place. All reading sessions took place in the elementary school's library, yet during some of the sessions, noise disturbances from other students coming in and out of the library occurred. These noise disturbances often distracted the students while reading, thus potentially influencing the results. Future research of this nature should occur in a quiet location where such noise disturbances would not be an issue.

The findings of this study have implications for the management of classroom reading interventions. This study found that a group-based reading

intervention could be just as effective as an individualized method. This finding may have significant benefits to a teacher who is trying to manage instruction for a classroom full of students. A teacher has to manage her time according to the needs of her students. As was reported by the National Center for Education Statistics (NCES, 2003), over half of students read at or below a basic level of achievement. In an average classroom size of 20 students, that equates to a minimum of 11 students who will require special attention to improve their reading skills. Unfortunately, one teacher often does not have enough time in the day to specifically attend to 11 students on an individual basis. Her attention is often shared by all students in the class who require her time and focus. A reading intervention that can help numerous students at once may have the potential to not only improve many students' oral reading fluency concurrently, but will also benefit teachers who struggle to find the time to help every student. Future research should examine how many students in a group could be effectively helped at once with this intervention. If the FT intervention is equally effective for more than four students, even greater benefits would be available to both students and teachers in the future.

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Table 1: Mean WCPM by Subject and Condition

	Baseline	FT	RR
Billy	79.3	106	102.5
Meghan	68.8	108.5	105
Emma	89.8	115.5	100.5
Annah	113.5	137	149
<i>Mean</i>	87.9	116.8	114.3

Table 2: Mean Percent Gain in WCPM by Subject

	Compare: FT over Baseline	Compare: RR over Baseline	Compare: FT over RR
Billy	33.7	29.3	3.4
Meghan	57.7	52.6	3.3
Emma	28.6	11.9	14.9
Annah	20.7	31.3	-8.1
<i>Mean</i>	35.2	31.3	3.4

Table 3: Mean Total Seconds to Complete Maze Passages by Subject and Condition

	Baseline	FT	RR
Billy	152	130	112.5
Meghan	139	89	90
Emma	163	92	107
Annah	124	78	99.5
<i>Mean</i>	144.5	97.3	102.3

Table 4: Mean Percent Decrease in Total Seconds to Complete Maze Passages

	Compare: FT below Baseline	Compare: RR below Baseline	Compare: FT below RR
Billy	14.5	26	-15.6
Meghan	36	35.2	1.1
Emma	43.6	34.4	14
Annah	37.1	19.8	21.6
<i>Mean</i>	32.8	24.3	5.3

Figure Captions

Figure 1. Words correct per minute (WCPM) during each condition for Billy and Meghan. Data points characterized by a circle represent WCPM during baseline, data points characterized by a square represent WCPM during the repeated reading (RR) condition, and data points characterized by a triangle represent WCPM during the fluency trial (FT) condition.

Figure 2. Words correct per minute (WCPM) during each condition for Emma and Annah. Data points characterized by a circle represent WCPM during baseline, data points characterized by a square represent WCPM during the repeated reading (RR) condition, and data points characterized by a triangle represent WCPM during the fluency trial (FT) condition.

Figure 3. Total seconds needed to complete maze passages during each condition for Billy and Meghan. Data points characterized by a circle represent total seconds during baseline, data points characterized by a square represent total seconds during the repeated reading (RR) condition, and data points characterized by a triangle represent total seconds during the fluency trial (FT) condition.

Figure 4. Total seconds needed to complete maze passages during each condition for Emma and Annah. Data points characterized by a circle represent total seconds during baseline, data points characterized by a square represent total seconds during the repeated reading (RR) condition, and data points characterized by a triangle represent total seconds during the fluency trial (FT) condition.

Figure 1

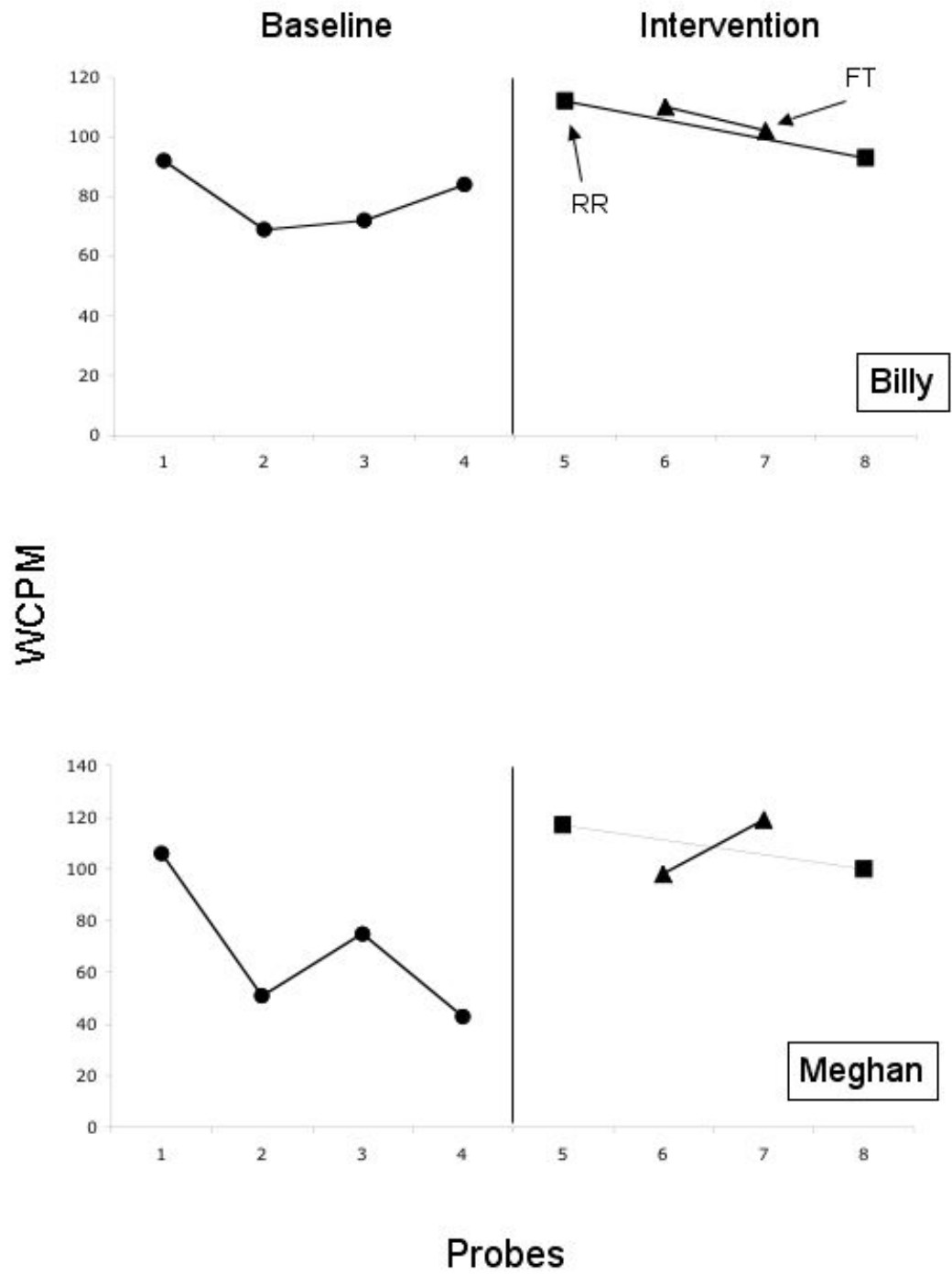
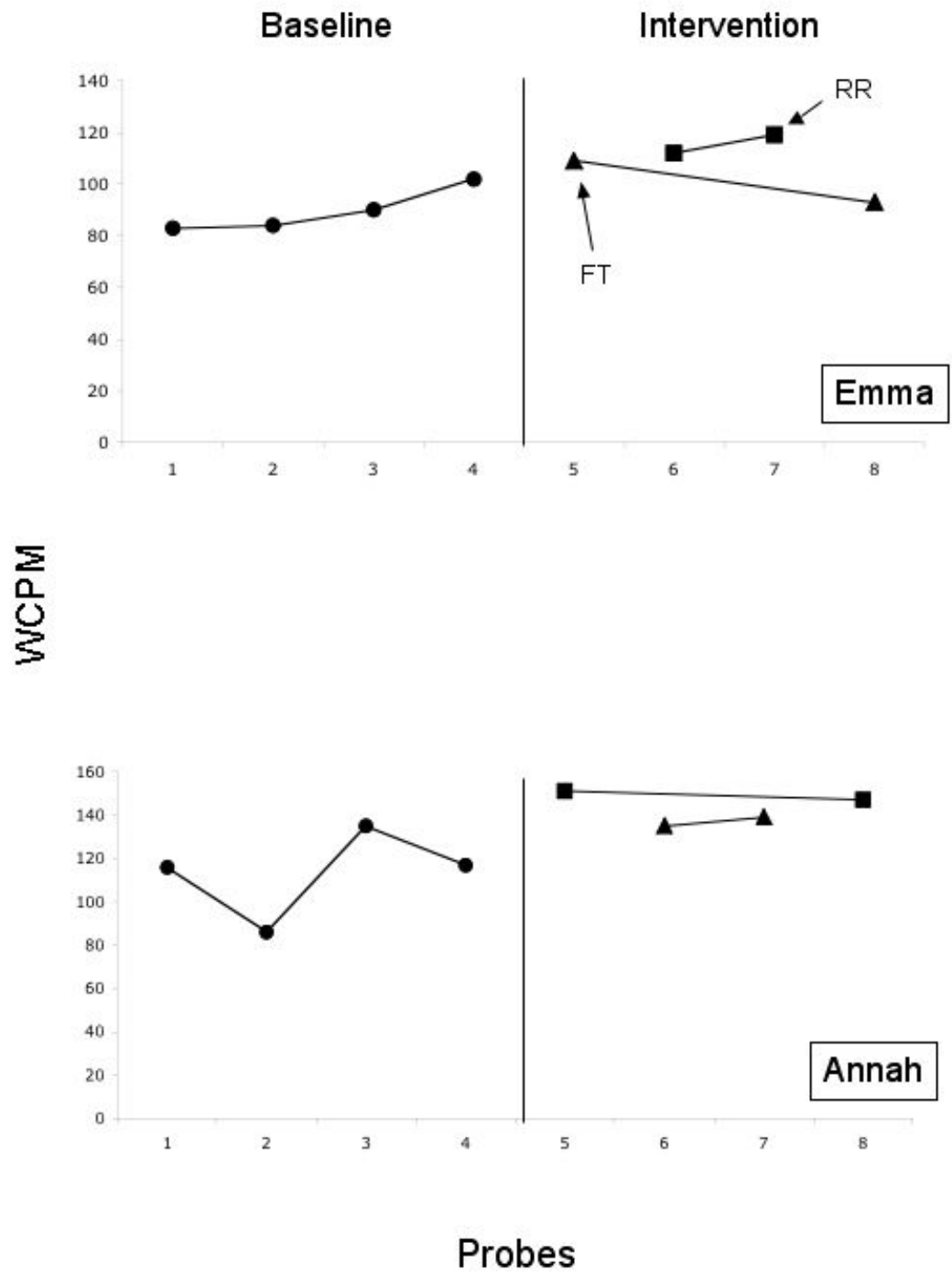
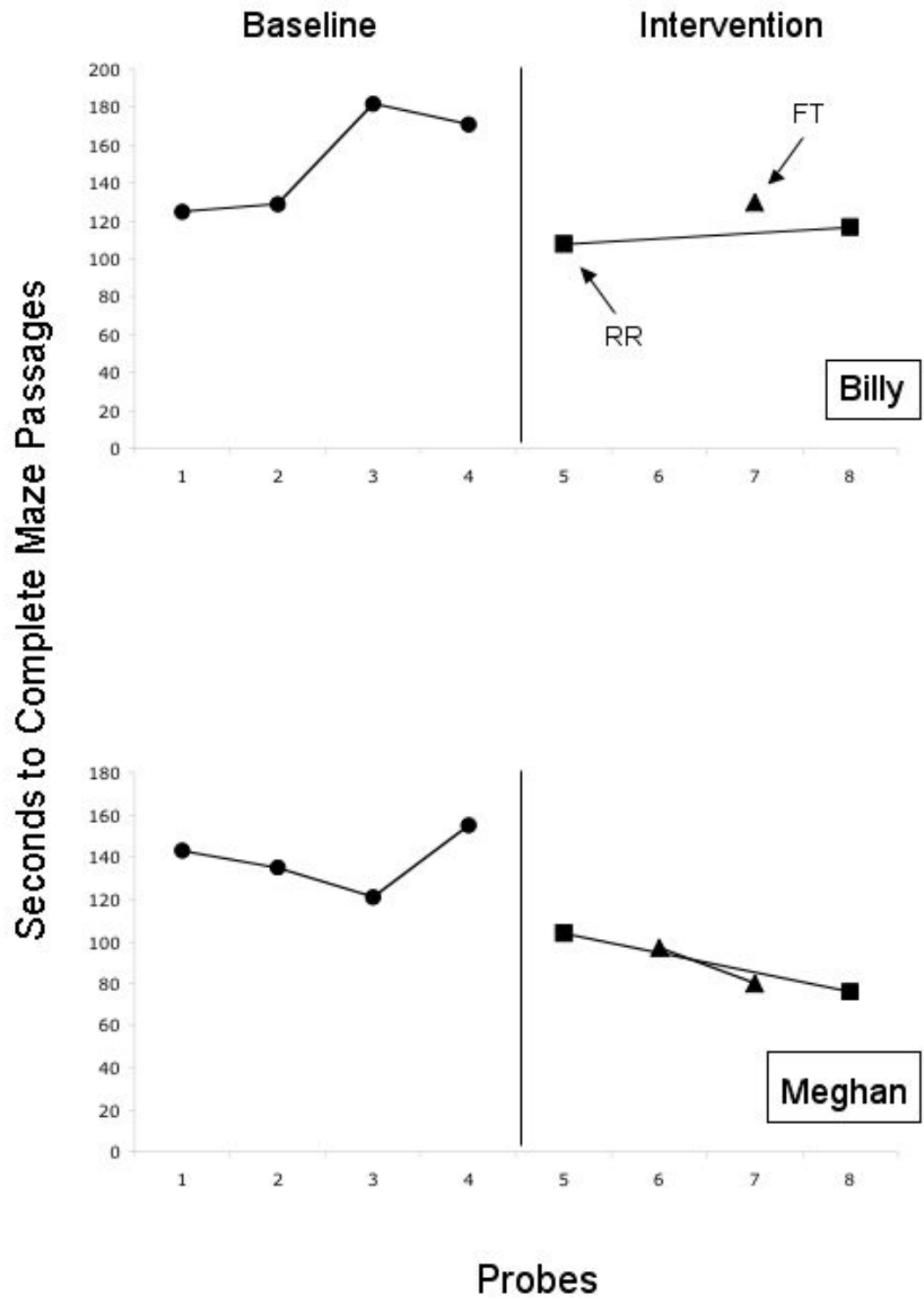
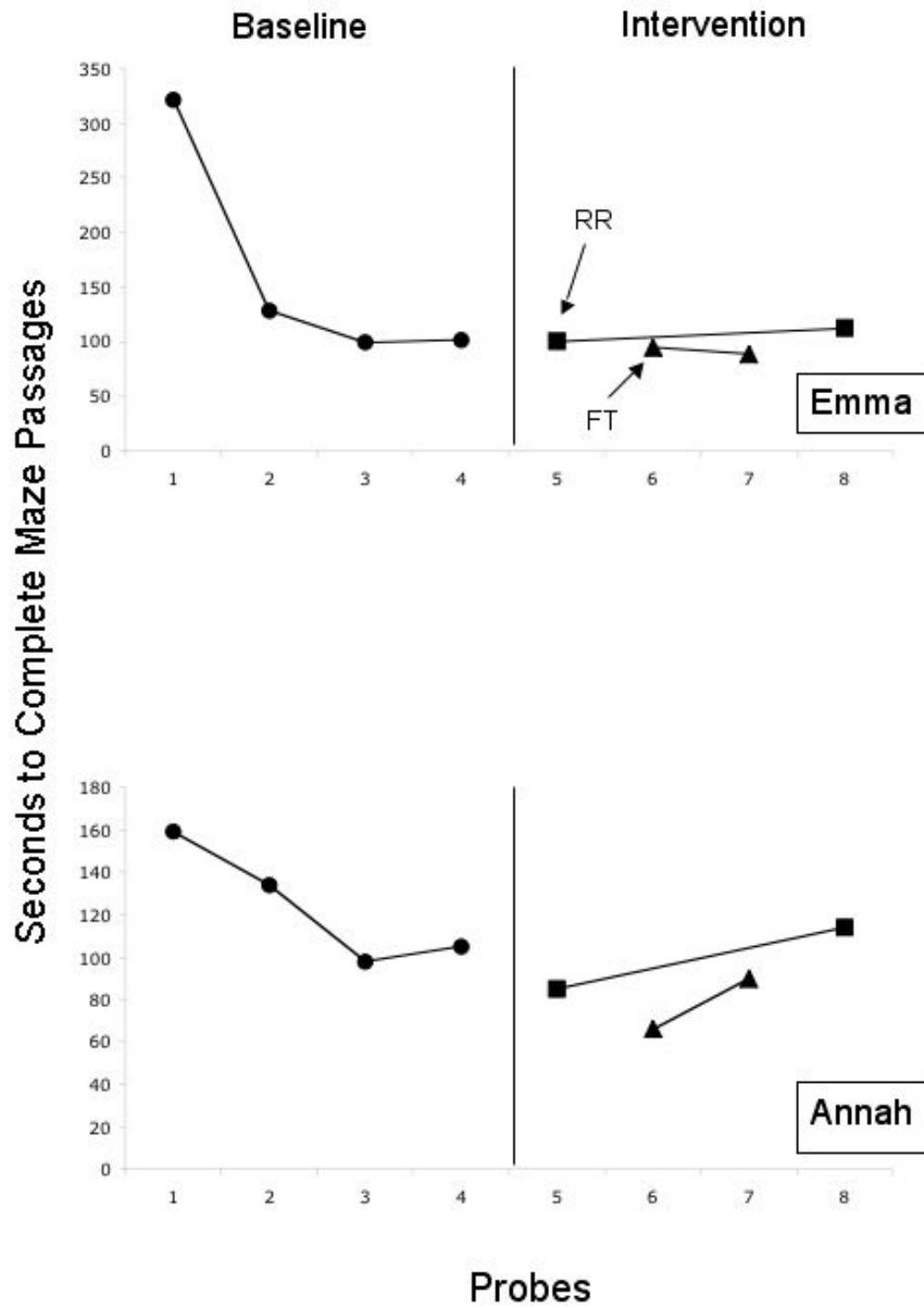


Figure 2







Student _____

Date _____

Fluency Trial Training Protocol

Trainer LPP

- Say, **“I’m going to read this story to you. Please follow along with your finger, reading the words to yourself as I say them.”**
- Read the entire passage at a comfortable reading rate (approximately 130 words per minute). Prompt the student(s) as necessary to make sure that they are reading and following along. Praise the students when finished.

Trainer FT

- Say, **“Now we’re going to have a reading relay race. I will start reading the story and when I say, ‘Next,’ I want the person on my left to start reading the story where I left off while everyone else follows along with their finger. When I say, ‘Next,’ again, the next person in the circle will then take over reading the story. If you come to the end of the story, start over from the beginning. If you come to a word you don’t know, I will help you. This reading relay race will continue until the entire group has read through the story twice.”**
- Say, **“It is important that you all follow along while the other students are reading so that you will be able to start reading from exactly where the last person stopped reading.”**
- Say, **“OK, we’re ready...begin!”** Start the stopwatch and begin reading the passage. After 15 seconds, say **“Next,”** to prompt the next student to begin reading. Continue timing saying **“Next”** every 15 seconds. Follow along on the trainer copy and correct errors as the students read. If a student hesitates for more than 3 seconds, say the word. If a student loses their place and/or does not know where to begin reading when **“Next”** is called for their turn, wait 3 seconds and then signal to where the student should read.
- Praise the students for reading.
- Say, **“Now I’d like each of you to practice reading the story once more to me. Last time you read this story, you read {insert baseline number of WCPM}. If you can beat this number, you can pick a prize from the prize box so be sure to do your best reading. Begin.”**
- When the student is done reading, determine if their reading goal was met.
- (Goal met) Say, **“You met your goal – good job! You may choose a reward from the prize box.”**
- (Goal not met) Say, **“You did not meet your goal this time, but thank you for doing your best reading.”**

Student _____

Date _____

Repeated Reading Training Protocol

Trainer LPP

- Say, **“I’m going to read this story to you. Please follow along with your finger, reading the words to yourself as I say them.”**
- Read the entire passage at a comfortable reading rate (approximately 130 words per minute). Prompt the student as necessary to make sure that they are reading and following along. Praise the student when finished.

Trainer RR

- Say, **“Now you’re going to practice reading the story a couple of times to me. If you come to a word you don’t know, I’ll tell it to you.”**
- Have the student read the story to you twice while you follow along. Correct errors as the student reads. If the student hesitates for more than 3 seconds, tell the student the word.
- Praise the student for reading.
- Say, **“Now I’d like you to practice reading the story once more to me. Last time you read this story, you read {insert baseline number of WCPM}. If you can beat this number, you can pick a prize from the prize box so be sure to do your best reading. Begin.”**
- When the student is done reading, determine if their reading goal was met.
- (Goal met) Say, **“You met your goal – good job! You may choose a reward from the prize box.**
- (Goal not met) Say, **“You did not meet your goal this time, but thank you for doing your best reading**

