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Effects of Peer Tutoring on the Reading Fluency and Comprehension of Seventh Grade Students

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EFFECTS OF PEER TUTORING ON THE READING FLUENCY AND COMPREHENSION OF SEVENTH GRADE STUDENTS

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EFFECTS OF PEER TUTORING ON THE READING FLUENCY AND COMPREHENSION OF SEVENTH GRADE STUDENTS

Meaghan Opuda Swan, M.S.

Dissertation Advisor: Rachel Brown, PhD

This study examined the efficacy of peer tutoring, specifically Peer Assisted Learning

Strategies (PALS), as supplemental instruction for middle school students with reading

difficulties.   A multiple baseline across individuals design was used to demonstrate

changes in oral reading fluency and reading comprehension. The results of this study

suggest that students who participated in PALS did not substantially increase reading

fluency or comprehension when analyzed on the basis of non-overlapping data points.

Nonetheless, two of the three underperforming students improved their reading skills

such that they were no longer in the at-risk range by the end of the study. The third

lower-performing student did make important gains over the course of the study. Notably,

the lower-performing participants perceived themselves as having made gains in reading

and they attributed these gains to working with a partner. The limitations and

implications of future research are discussed.

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Chapter 1: Literature Review

Response to intervention (RTI) is a multi-tiered framework based on using high-quality core instruction combined with screening and data-based decision making to ensure all students are provided with appropriate instruction. At its essence, response to intervention is about problem-solving to meet the learning needs of all students (Brown-Chidsey & Steege, 2010). RTI has been well-validated at the elementary level, but far less research has been conducted with a focus on middle and high school levels. RTI involves providing students with three tiers of instructional support. Tier 1 is general education instruction, Tier 2 is small group instruction, and Tier 3 is individualized instruction.

Increasing standards for graduation have highlighted the importance of all students leaving high school with sufficient reading and mathematics skills in order to be competitive in a global workforce. As identified by Balfanz, McPartland, and Shaw (2002), increased standards without resources in place to help students meet the standards may result in greater school failure and potential for dropout. Many older students who are struggling with reading are in need of additional intervention to develop reading fluency, comprehension strategies, and ways to understand new vocabulary. Modeled comprehension strategies, mini-lessons, cooperative partnerships, guided discussions and student-selected reading material at an appropriate reading level are all components of supplemental instruction that should be implemented during the school day (Balfanz et al., 2002).

One of the challenges facing schools today is how to implement RTI with an ever-shrinking budget. Many districts do not have money to hire additional personnel to implement Tier 2 interventions effectively, yet schools must find a way to provide needed supports for students with fidelity. By definition, Tier 2 instruction is supplemental, meaning that it is provided in addition to typical instruction received by all students. This research study explored the feasibility of using peer assisted learning strategies (PALS) as a supplement to existing reading instruction at a middle school that provides English instruction for 80 minutes, 5 days biweekly to all students and 60 minutes of differentiated instruction using *Corrective Reading* or *Elements of Literature* for 60 minutes, 5 days biweekly for seventh grade students performing both at and below grade level. Growth in student oral reading fluency and reading comprehension over time was measured.

While classroom instruction is usually developed for the average or middle group of students, the collaborative learning opportunities available through peer tutoring can assist a teacher in meeting the diverse abilities often present in today's classrooms (McMaster, Fuchs, & Fuchs, 2007). Research has found that PALS improves reading comprehension and oral reading fluency for students with and without learning disabilities in grades 2-6 (Fuchs et al., 2001). According to Fuchs, Fuchs, and Burish (2000), PALS is an instructional strategy often used at Tier 1 by matching all students in the entire class into pairs, with students providing each other with structured instructional activities. Specifically, PALS involves the teacher rank ordering the entire class from highest to lowest performer, splitting the list in two and matching the top performer in the higher performing group with the top performer in the lower performing group. The next

student in each group is matched, and this method continues until all students in the class are placed into a pair. Students work with the same partner for four weeks (Fuchs et al., 2000; Fuchs et al., 2001; McMaster et al., 2007).

Once in dyads, students are trained to complete three structured activities during each 35-minute PALS session. Each student takes turns being the "coach" and "reader." When each student is not in the reader role, he or she is the coach. The higher performing student is always the "first reader," the lower performing student is always the "second reader." When each student is in the role of "coach," he or she helps the student in the "reader" role by providing error correction and asking questions as outlined for each activity. When each student is in the role of "reader," he or she reads the text aloud and completes each activity. The "first reader" always goes first and provides modeling for the lower performing student; then the students switch roles. Each activity in PALS is designed to take 5 minutes per partner, with both partners completing each activity with the exception of the 2 minute retell at the end of Partner Reading that is completed only by the second reader. The first PALS activity is Partner Reading with Retell. With this activity, the "first reader" reads a text aloud for 5 minutes, followed by the "second reader" re-reading the same text for the following 5 minutes. The coach follows a prescribed error correction procedure if he or she hears the reader make an error. The second reader then retells what was read for 2 minutes (Fuchs et al., 2000). The second activity, Paragraph Shrinking, requires the reader to read aloud, stopping at the end of each paragraph to summarize the main idea in less than 10 words. If the summarization is inaccurate, the coach prompts the reader to try again after looking at the paragraph a second time. After 5 minutes, the partners switch roles. The final activity is the

Prediction Relay. Based on research that suggests beginning readers and readers who struggle with comprehension have more difficulty developing predictions and identifying the accuracy of predictions, Prediction Relay was designed to have students practice making and checking predictions as a way to increase comprehension skills (Fuchs et al., 2000).   The prediction relay combines the skills practiced in the first two activities along with making and checking predictions. The first reader begins by making a prediction of what will be read, reads the section aloud identifying whether or not the prediction was accurate, then summarizes what was read; this continues for 5 minutes, then the partners switch roles. To provide reinforcement for completion of the PALS activities, partners are able to earn teacher-awarded points for specific skills demonstrated during the activity (Fuchs et al., 2000; Fuchs et al., 2001).

Originally designed for students in grades 2-6, in the past decade PALS has been extended to students in kindergarten and first grade, as well as students in high school. The structure of PALS remains consistent across grade levels, with students acting as both the coach and reader in each session, following a set of prescribed activities with frequent verbal interaction between partners, and a built-in reward system to help motivate students (Fuchs et al., 2001). In studies adapting PALS for high school students, three differences were incorporated to make the intervention more developmentally appropriate. First, students used high interest, easy readability, nonfiction material. Second, students earned "money" that could be used to purchase desired tangible reinforcers from the classroom-based "PALS store." Finally, pairs were switched on a more frequent basis (McMaster, et al., 2007; Fuchs, Fuchs & Kazdan, 1999).

In their study of the effects of PALS for high school students experiencing significant reading problems, Fuchs et al. (1999) assisted nine teachers in implementing PALS with high school students reading at the second through sixth grade level.   Typical reading instruction was replaced with PALS five times during each 2-week period for a total of 16 weeks. Results of the intervention group were compared to students who received typical reading instruction for the same period of time. Although the reading fluency rates remained similar between groups, the intervention group experienced greater growth on the number of comprehension questions answered correctly with an effect size of .34 standard deviations, although neither outcome was found to be statistically significant (Fuchs et al., 1999).

Although the improvement in reading comprehension was promising, results of this study were not as impressive as studies completed with younger students within the general classroom setting (McMaster et al., 2007; Fuchs et al., 2000). It may be that the adaptations made for the high school students (e.g., the frequency of PALS lessons was modified and occurred five times every 2 weeks instead of 2 days per week) affected the outcomes. Additionally, Fuchs et al., (1999) noted that reading instruction outside of the PALS sessions was of concerning quality for both the PALS and the non-PALS conditions because a true Tier 1 core program was not in place. This leads to the question of whether the Tier 2 intervention itself improved reading comprehension or if there were other variables that led to the improvement in reading comprehension. Additionally, all students participating in the PALS intervention had similar below grade-level reading abilities, perhaps masking the effects seen in the numerous studies of PALS at the elementary grade level (Fuchs et al., 1999).

One of the concerns that might be raised when using peer tutoring such as PALS is that the opportunity for increased reading comprehension could depend on how the tutor (e.g., coach) provides help for the tutee (e.g., reader). Typically in PALS, if the reader makes an error, the coach provides a verbal prompt to indicate that an error has been made, and after a brief opportunity to correct the error, the coach provides the answer to the student. In their study of elaborated help giving, L.S. Fuchs, Fuchs, Kazdan & Allen (1999) studied the efficacy of teaching coaches in grades 2 through 4 to assist readers to give correct responses if the answer provided was incorrect. With both traditional PALS and PALS with elaborated help giving, the coach will eventually provide the correct response if necessary. With elaborated help giving, coaches first provide up to four prompts, such as re-reading the first and last sentence of the paragraph, to assist readers in developing a correct answer. Fourth grade students were more likely to use the help-giving strategy than younger students. Across grade levels, students were able to identify and correct more errors with the help-giving strategy. Younger students had higher performance with traditional PALS, suggesting that although more errors were identified and corrected with the help-giving strategy, the additional effort did not increase outcomes at the second and third grade levels. Fourth grade students in the help-giving condition outperformed students in the PALS condition, suggesting that elaborated help giving may be an important add on when using PALS with older students (Fuchs et al., 1999).

When considering peer tutoring, few studies specifically address using this strategy within a traditional middle school setting. Although the results of PALS research are impressive, many of the studies were completed either with additional staff,

such as graduate students, or with adaptations of PALS. Acknowledging the limitations identified with using PALS with homogenous groups of struggling readers at the secondary level, Spörer & Brunstein (2009) implemented PALS in heterogeneous seventh grade classrooms in Germany. Using a pretest-posttest experimental design, the PALS intervention was delivered twice per week for nine weeks. This differs from other studies that provided intervention at the secondary level five times over a two-week period, for a total of 16 weeks (Fuchs et al., 1999) and the general recommendation that PALS be implemented at least three times a week for at least a 15 week period (McMaster et al., 2007). Tier 1 instruction included whole class discussion as well as partner and whole class reading to apply skills learned during classroom instruction. Although no classroom-level treatment effects were found to be significant, when results were analyzed using the individual student as the unit of analysis, Spörer & Brunstein found that students in the PALS intervention had a statistically significant increase in reading comprehension.

In their study to assess the efficacy of peer tutoring, Dufrene, Reisener, Olmi, Zoder-Martell, McNutt, and Horn (2010) used a multiple baseline design across four middle-school students to evaluate the effects of peer tutoring on oral reading fluency rate. In this study, peer tutors were taught to implement Listening Passage Preview and Repeated Reading interventions, including assessment of reading progress through completion of running records for same-age peers in need of Tier 2 interventions. Results showed that the students' oral reading fluency improved as a result of the intervention. This suggests "peer tutoring is a cost-effective student-mediated instructional procedure in which student dyads or small learning groups work together on instructional tasks" (p.

242). Although peer tutoring may be cost-effective, it is important for schools to consider the appropriateness of peers conducting progress monitoring of other students.

Research has demonstrated the importance of students developing strong reading skills as a protective factor to reduce the likelihood of later school failure and dropout (Balfanz et al., 2002; Cappella & Weinstein, 2001; Fuchs et al., 1999; Goss & Andren, 2014). Although much effort is made to identify and remediate reading difficulties during the elementary school years, many students may continue to struggle to meet grade level reading expectations at the secondary level. Special education services may be one way a student can receive additional instruction in reading, however not all students who are low performing in reading have a disability. Although many elementary schools have implemented response to intervention, due to the differences inherent in secondary schools there has been less movement toward implementing response to intervention at that level. According to the National Center on Response to Intervention, little is known about the efficacy of implementing the elementary RTI model at the secondary level (2011). With block schedules, students having multiple teachers, and the diverse learning needs of older students, certainly the secondary level approach to RTI must be different. The nature of secondary education is such that we cannot simply take the same RTI model that has been successful at the elementary level and replicate it for secondary students.

PALS offers an approach to providing supplemental instruction to struggling readers by using peers as tutors to provide additional instruction. Prior research has demonstrated that PALS is effective for increasing oral reading fluency and comprehension as part of universal instruction for students in grades K-6, and for reading

comprehension at the high school level as well as with 7th grade students in Germany. Additional research is needed to identify if PALS is a feasible method to use as a supplemental intervention at the middle school level for a heterogeneous group of students.

Research Question and Hypotheses

The purpose of this study was to provide a Tier 2 reading intervention using peers as tutors that could be implemented with the staff members typically available in a school setting. Much educational research is conducted with additional research staff available to implement the intervention. In other cases, there are additional training resources provided to the school. Much less research has been conducted to investigate the effects of evidence-based interventions implemented by existing staff. As a supplemental reading intervention, PALS offers a way for schools to provide extra reading support through the use of peer tutors. This research study addressed the following questions: (a) will students who participate in PALS have a greater increase in oral reading fluency and reading comprehension than students who do not, (b) will the increase be observed among both lower and higher performing readers, and (c) will teachers and students find PALS to be an acceptable way to meet the supplemental instructional needs of students who are struggling readers? It was hypothesized that by using heterogeneous pairings, students participating in PALS would demonstrate a significant increase in oral reading fluency and reading comprehension. Further, it was hypothesized that this increase would be observed among both lower and higher performing students. Additionally, it was hypothesized that students and staff would find PALS to be an acceptable methodology for meeting supplemental instructional needs.

Chapter 2: Method

Design

This study used a multiple baseline across individuals design to assess whether PALS, as a supplemental Tier 2 intervention, improved oral reading fluency and reading comprehension for middle school students. The multiple baseline design included 10 students who were placed in dyads, with one lower and one higher performing student in each dyad (i.e., 5 dyads). Baseline data were collected from all students. Once three baseline data points were collected, one dyad was selected at random to begin the PALS intervention. The PALS procedures call for having students change partners in the dyads every few weeks, however, this would have created a confound in the research design by adding an additional uncontrolled variable. For this reason, the participating students stayed with the same partner throughout this study. All procedures were reviewed and approved by a University Institutional Review Board (IRB).

Participants

Participants in this study were five dyads of seventh grade students, half of whose scores on district-wide assessments indicated reading difficulties, and two paraprofessionals who agreed to provide the intervention in a rural school in the Northeast. Each student entered the study after parental consent and student assent were attained. During the course of the study, two of the students withdrew and were replaced by two students on a waiting list. One of the paraprofessionals also withdrew from the study shortly after it started, thus, only one paraprofessional completed the study. The middle school hosting the study served approximately 300 students in grades seven and

eight. Approximately 57% of the school population qualified for free and/or reduced lunch, with 16% of the students receiving special education services. Students attended the school from a total of 10 rural towns, some traveling up to an hour, one way, on a school bus.

Each grade level was divided into two "communities" named after local mountain ranges. The students selected for this study were all part of one seventh grade "community." Typical reading instruction at this school included 80 minutes of English instruction 5 times every two weeks, and 60 minutes of supplemental instruction during an RTI block 5 times every two weeks. During the RTI block, students were assigned to either *Elements of Literature* (considered Tier 1 extension instruction) or *Corrective Reading* (considered Tier 2 intervention) based on scores from the Northwest Evaluation Association (NWEA), Measures of Academic Progress (MAP), and Easy CBM. None of the participants in the study received special education services for support in reading or language arts.

Students' MAP scores, as measured during the spring of their 6th grade year, were used to identify those who might benefit from reading intervention. The scores were divided at the 50th percentile with those scoring at or above coded as higher achieving readers, and those scoring below coded as lower achieving readers. Student names were randomly selected from each group and their parents contacted to request consent for them to participate in the study. If parental consent was obtained, the procedures of the study and the option to withdraw were explained to each student, and the students were provided with the opportunity to give assent. This process was followed until there were six higher achieving and six lower achieving student participants. Although an initial

goal of the study was to provide reading intervention for students in both the *Corrective Reading* and *Elements of Literature* groups, the sampling procedure (i.e., which students' parents gave consent) and the students' schedules resulted in having only students from the *Elements of Literature* group participate. In order to verify the students' current reading skills, the participants completed baseline seventh grade oral reading fluency (e.g., AIMSweb® R-CBM) measures. The results showed significant variability between MAP reading performance and oral reading fluency scores, so students were then rank ordered according to median baseline oral reading fluency performance (see Table 1). The rank order was then split in half and students were paired so that the highest performing reader from the lower group was paired with the highest performing reading from the higher group.

Table 1.

Subjects' Spring 2013 MAP Reading and Median Baseline R-CBM Scores

Student	R-CBM	MAP Reading
A	167	214
E	154	220
C	134	217
F	134	200
B	109	202
D	98	224

Setting

The middle school had a scheduled 60-minute RTI block daily for all students. Due to block scheduling, the reading and math RTI blocks rotated such that in a two week time period each intervention group met five times. In addition to the RTI block, students had a 35-minute learning lab time each morning that served as a structured study hall as well as an opportunity to participate in chorus, band, or orchestra. The PALS intervention occurred during the 35-minute learning lab time 3 days per week, and was in

addition to the *Elements of Literature* supplemental services provided during the RTI block. The intervention took place in a multi-purpose room that was used throughout the day by a variety of classes and afterschool activities.

Materials

      Pretest-posttest materials. Prior to the intervention, all students in the study completed the AIMSweb® R-CBM and USM-maze. The AIMSweb® R-CBM is a brief measure of oral reading fluency that is administered individually. A student is directed to read orally for one minute. The number of words read correctly during the minute is calculated by subtracting errors from total words read. Measures of oral reading fluency have been found to correlate positively with improvements in reading comprehension (Reschly, Busch, Betts, Deno, & Long, 2009). AIMSweb seventh grade R-CBM passages were used for both the pre- and post-test assessments. R-CBM at each student's current reading level was used for progress monitoring every week (see Appendix A).

      A maze assessment provides a brief measurement of a student's silent reading fluency and comprehension (Guthrie, 1974; Brown-Chidsey, Johnson, & Fernstrom, 2005). A student is provided with three minutes to read a passage silently and circle missing words from a selection of three potential words. One of the words is the correct word and the other two are incorrect. The student's score is the number of correct selections during three minutes of reading. Seventh grade mazes from a collection developed by researchers at the University of Southern Maine were used for both the pre- and post-test assessments of all students. Mazes at each student's current reading level were used for progress monitoring every week during the study (see Appendix A).

PALS folders. Each dyad in the intervention was provided with a PALS folder with a Question Card, Correction Card and Points Sheet. The folders were kept in each dyad's hanging file in a locked filing cabinet, along with reading materials and a pencil. The interventionist unlocked the filing cabinet and set materials on the tables at the beginning of each intervention period. At the end of each intervention period, students returned the folders to the interventionist, who then locked them in the cabinet.

Preference assessment questionnaire. To identify what types of rewards students preferred to have in the PALS store, students were asked to complete the preference assessment questionnaire (see Appendix B).

Reading materials. Narrative reading texts were selected from available instructional reading materials used at the middle school and elsewhere in the district. Text was selected at the reading level of the lower reader of each dyad. A selection of appropriate books for each dyad was provided, and dyads were given the opportunity to agree upon a book to read during the intervention. The reading levels of all selected materials were verified using the Lexile system (Metametrics, 2013).

Scripts for lessons. The interventionist was provided with scripts for teaching the PALS activities to students. Scripts were adapted from the PALS manual for grades 2 through 6 in order to be developmentally appropriate for seventh grade students, and to allow training to occur over the course of two intervention days. Scripts are provided in Appendix C.

Rewards. For the students who participated in the extended baseline condition, a reward for positive behaviors (e.g., Positive Behavioral Intervention and Supports [PBIS] school-wide token), such as being responsible and participating in progress monitoring,

was given. Consistent with PALS procedures, points were awarded by the interventionist

for prompt arrival to the intervention session, completion of the reading activities, and

on-task behavior during the intervention. Each dyad worked together to earn points. At

the end of each week, the pair earned one PALS coupon for every 100 points earned.

Individual students also had the opportunity to earn rewards by improving their scores

during weekly progress monitoring. Students were able to purchase tangible and non-

tangible reward items from the classroom's "PALS store" using the PALS coupons on a

weekly basis. Students were permitted to save their PALS coupons towards more costly

purchases. The PALS coupon is shown in Appendix D.

Social validity questionnaire. Schools are more likely to implement

interventions that are perceived as easy to implement (Lindo & Elleman, 2010). In order

to learn whether the participating students and interventionist(s) found the PALS reading

intervention to be an acceptable way to help students improve reading outcomes, a brief

social validity assessment was administered at the conclusion of the study (See Appendix

E).

Procedures

Pre-test measurements. Pre-test assessments were conducted for initial

participants in November 2013 before any other study procedures began. Additional pre-

test assessments occurred as needed to enroll additional participants. Pre-testing involved

having all selected students complete seventh grade AIMSweb® R-CBM and USM-maze

assessments as a part of baseline data collection.

Preference assessment. Items in the PALS store were based on results of the

preference assessment questionnaires completed by all participants prior to entering the

study. Items included both tangible (i.e., movie tickets, coupons for Dunkin' Donuts, iTunes cards, ear buds, pencils, etc.) and non-tangible (i.e., permission to go first on progress monitoring day, etc.) rewards. The preference assessment questionnaire is provided in Appendix B. Completed preference assessments were reviewed and items for the PALS store were identified. Table 2 summarizes the students' top preferences.

Table 2.

Top Student Preferences

Gift Cards	Activities	Snacks	School Items	Other
iTunes Cards	Laptop Time	Gummy Snacks	Books	Movie Passes
Walmart	Football	Candy	Notebooks	
Cabela's	Board Games	Chex-Mix	Pens/Pencils	
Olympia Sports	Knowledge Games	Cookies/Brownies	Ear buds	
Game Stop	Free time in class	Gum	Sticky notes	

Note: A list of all items identified is available from the researcher

Interventionist training. The researcher trained the two educational technicians who agreed to implement the PALS intervention following the methodology adapted from the PALS manual for grades 2-6. Interventionist training occurred during lunch, several preparatory periods, and after school.

Student training. The primary interventionist, researcher, or research assistant trained each dyad in the PALS procedures during the first two days of the pair's first week of the intervention. One training session was observed by a research assistant to determine training accuracy.

Baseline measurement. The researcher, research assistants, and interventionists conducted all baseline measurements using AIMSweb® R-CBM and USM-maze measurements. A minimum of three R-CBM and maze measures were completed by each student during the baseline phase. In addition, in order to identify performance reading levels for students in the intervention group identified as not meeting grade level

oral reading fluency benchmarks, survey level assessments (SLA) was completed using the AIMSweb® R-CBM passages. SLA involves having the student read successively easier material until the student's oral reading fluency performance falls within the average range for students of the material level. The SLA data were used to select the reading level of materials used for the PALS intervention.

Progress monitoring. All participating students, regardless of being enrolled in the PALS intervention, completed weekly progress measures. Oral reading was measured with R-CBM and silent reading with maze on a day when the intervention did not occur. Materials for progress monitoring included the AIMSweb® R-CBM and the USM-maze at the student's reading instruction level. The first dyad began the intervention at the end of November, with all other participants remaining in extended baseline until the criteria were met to extend the intervention to another dyad. In order for an additional dyad to be eligible to begin intervention, the data for at least one of the students in the most recently enrolled dyad needed to demonstrate growth. In accordance with a multiple baseline across individuals design, enrollment of additional dyads was contingent upon the most recent dyad having at least one participant demonstrate growth in oral reading fluency or reading comprehension. An intervention "week" began on Friday morning and concluded with progress monitoring on the following Thursday morning. Inter-scorer reliability checks were performed on 36.8% and 30.7% of all USM-maze and AIMSweb® R-CBM progress monitoring passages, respectively.

Treatment integrity. On eight different weeks, a research assistant was present to observe the PALS lesson and identify whether the interventionist and students being

observed implemented the activity correctly. A treatment integrity checklist for PALS is found in Appendix F.

  Post-test measurements. Post-test assessments were conducted after three dyads had enrolled in the intervention and participated for at least four weeks. The post-testing used alternate equivalent forms of seventh grade AIMSweb® R-CBM and USM-maze assessments so that the students' growth over time in grade-level materials could be analyzed. Inter-scorer checks were completed on 100% of oral reading fluency and maze probes.

Data Analysis

  Individual student progress monitoring data for both oral and silent reading fluency were analyzed using visual inspection of graphed scores. Once baseline and SLA data had been collected for all initial participants, the first dyad began the intervention, with all other students remaining in extended baseline until the criteria were met to extend the intervention to another dyad. To answer the question "Will students who participate in PALS have a greater increase in oral reading fluency and reading comprehension than students who do not participate?" results from students who participated in PALS were compared to students who remained in baseline. To answer the question "Will the increase be observed among both the lower and higher performing readers?" multiple baseline data of lower-achieving and higher-achieving readers were compared to determine if increases occurred for both partners. As well, multiple baseline data were compared on a dyad-by-dyad basis when determining to extend the intervention to another pair. The social validity of the intervention was examined by reviewing the responses on the social validity questionnaire.

Chapter 3: Results

Three of the dyads completed all phases of the study and their data are reported here. It was anticipated that the seventh grade students who participated in PALS for reading would have greater increases in oral reading fluency and comprehension than students who remained in baseline. Furthermore, it was anticipated that both lower and higher performing readers would benefit from this intervention. Finally, it was anticipated that both students and staff would find the PALS for reading intervention to be an acceptable intervention for improving students' reading abilities.

Training Accuracy

Training occurred across two days, prior to each dyad entering the intervention. The training script was reviewed and role-played with the interventionist prior to the study beginning. 16.7% of training sessions were observed by a research assistant to assess how closely the training script was followed during the initial PALS training for each dyad. Training accuracy for the training sessions observed was 96.2%.

Treatment Integrity

Treatment integrity data were recorded by a research assistant across eight sessions during the intervention to identify how accurately each specific component of the PALS session was implemented. Treatment integrity across individual components as well as the total intervention session is shown in Table 3. Treatment integrity for the observed total intervention sessions ranged from 90% to 100%. It should be noted that on day 7, the session ran out of time prior to completion of the final PALS activity due to

three out of six students in the intervention being absent, and the interventionist needing

additional time to reorganize pairs of students for the day's session.

Table 3.

Treatment Integrity

				PALS Components		
Observed Sessions	Teacher Behavior	Partner Reading	Retell	Paragraph Shrinking	Prediction Relay	Overall
1	100%	85.7%	66.7%	100%	90%	90.2%
2	88.9%	100%	100%	100%	90%	95.1%
3	88.9%	100%	100%	100%	100%	97.6%
4	100%	100%	100%	100%	100%	100%
5	100%	100%	100%	100%	70%	92.7%
6	100%	100%	100%	100%	100%	100%
7	77.8%	100%	100%	100%	No Data	93.5%
8	100%	100%	100%	100%	100%	100%

Inter-Scorer Agreement

Table 4 displays the inter-scorer agreement between the two scorers of each

measure used during the study. Inter-scorer agreement was measured on 30.7% of the R-

CBM probes and 36.8% of USM-maze probes. To facilitate opportunities to complete

inter-scorer agreement, R-CBM probes were recorded using a digital recorder; the second

scorer reviewed the recordings at a later time. Inter-scorer agreement on the R-CBM

ranged from 93.1% to 100%, with an average agreement of 97.98%. Inter-scorer

agreement on the USM-maze ranged from 94% to 100%, with an average agreement of

99.37%.

Table 4.

Inter-Scorer Agreement

	USM-maze	AIMSweb® R-CBM
Range	94%-100%	93.1%-100%
Average	99.37%	97.98%

Effects of PALS on Reading Fluency

Pretest and posttest scores were analyzed at the individual student level using multiple baseline design methodologies to answer the research questions. Pretest and posttest scores for R-CBM can be found in Table 5.

Table 5.

Pretest and Posttest Scores for Oral Reading Fluency

Student in PALS	Performance (High/Low)	Weeks in PALS	Pretest	National Norms (winter)	Posttest	National Norms (winter)	ROI*
A	H	12	163	50-75%	213	>90%	2.94
B	L	12	106	<10%	140	25-50%	2.53
C	H	7	120	10-25%	122	25-50%	0.18
D	L	7	80	<10%	100	<10%	1.37
E	H	4	146	25-50%	177	50-75%	1.94
F	L	4	118	10-25%	155	50-75%	2.18

*ROI= Rate of Improvement. ROI calculated by posttest-pretest/weeks and prorated by student start date.

A review of oral reading fluency pretest and posttest scores for all participants showed that all students in the study, regardless of condition, made improvements in their oral reading fluency. Based on AIMSweb national norms, the average rate of improvement for students in the 7th grade is 0.67 correct words per minute per week. With the exception of student C, all students surpassed the national average for rate of improvement. Importantly, growth of two or more times greater than the national average was observed for the lower level reader in all intervention dyads. Of the students who performed below the 25th percentile at baseline (i.e., within the at-risk range) on oral reading fluency, three made sufficient progress to move into the average range (at least the 25th percentile), with the another student having an impressive rate of improvement of 1.37 words per week, despite remaining in the at-risk range. Notably, although student C's rate of improvement was only 0.18 correct words per minute per week, his improvement was sufficient to move him from the at-risk range to the average

range. In addition to comparison of pretest and posttest data, progress on weekly oral

reading fluency probes was analyzed. Graphs for oral reading fluency progress are

displayed in Figure 1. Table 6 shows non-overlapping data points for oral reading

fluency. It is important to note that only data from the student's current enrolled grade

seventh grade probes were used to calculate non-overlapping data.

Table 6.

Oral Reading Fluency Non Overlapping Data Points by Individual

Dyad	Student	Weeks in PALS	Non Overlapping Data Points	Total Non Overlapping Data points
Dyad 1	A	12	11	11
	B	12	---	
Dyad 2	C	7	1	1
	D	7	---	
Dyad 3	E	4	0	1
	D	4	1	

Review of oral reading fluency progress identified considerable variability in

weekly performance of all participants. Despite significant variability, visual inspection

suggests that Dyad 1, which participated in PALS for 12 consecutive weeks, made

notable gains in oral reading fluency when compared to baseline. Gains were observed

for both readers, indicating that differences in oral reading fluency performance began

after intervention was started. Immediate gains were observed for the second reader in

Dyad 2, however the gains were not sustained throughout the duration of PALS

participation. Neither the first reader in Dyad 2 nor Dyad 3 appeared to have notable

gains in oral reading fluency that can be attributed to participating in PALS.
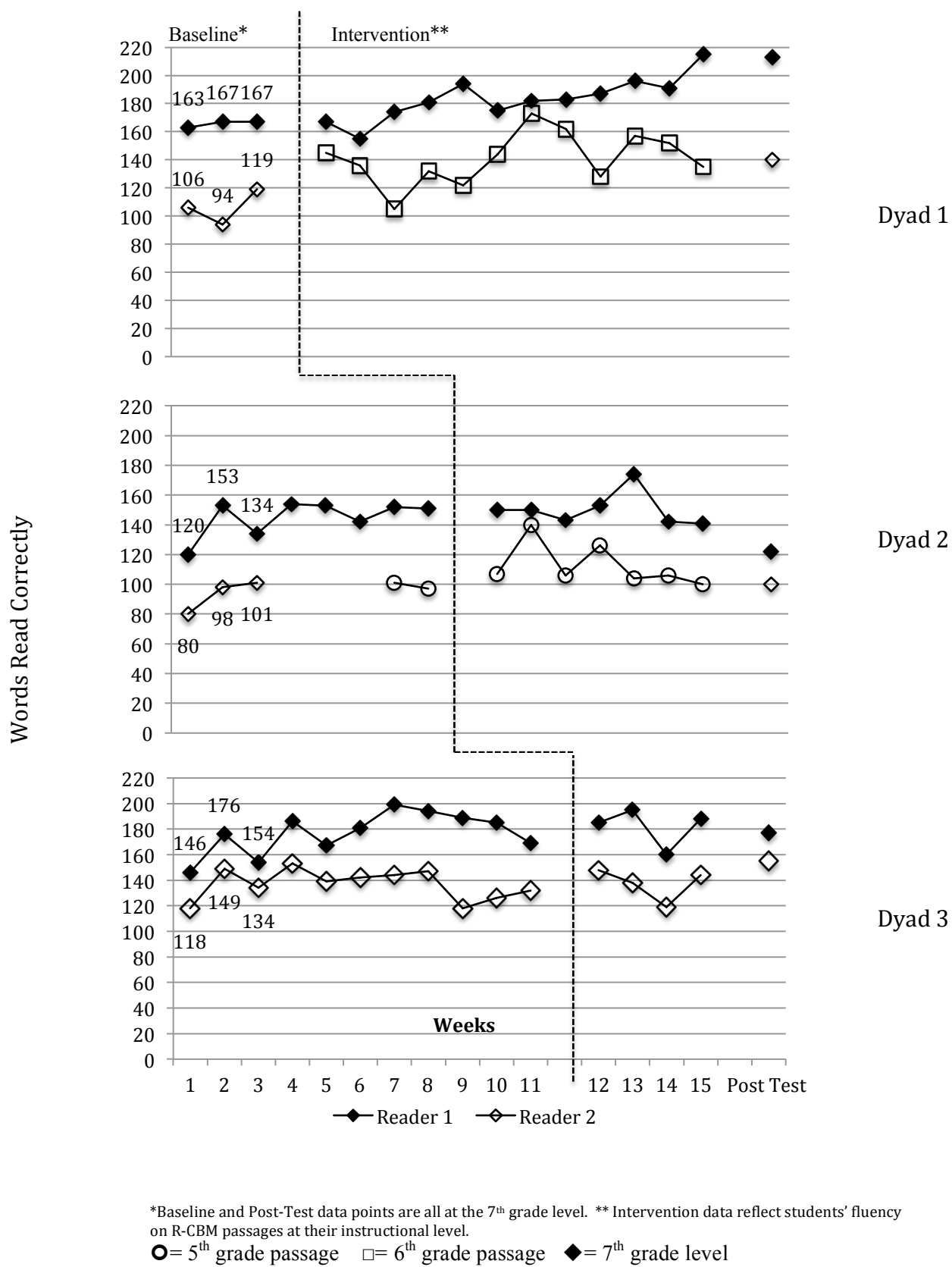
Figure 1. Oral Reading Fluency Progress

Effects of PALS on Reading Comprehension

Growth in reading comprehension was measured using the USM-maze. Pretest

and posttest scores for USM-maze can be found in Table 7. A review of reading

comprehension pretest and posttest scores as measured by the USM-maze suggests that

all participants made improvements in reading comprehension. At this time, there are no

norms available for the USM-maze, however, growth in reading comprehension was

further analyzed through inspection of graphed data across dyads.

Table 7.

Pretest and Posttest Scores for USM-maze

Student in PALS	Weeks in PALS	Pretest	Posttest	ROI*
A	12	24	31	0.41
B	12	13	23	0.59
C	7	17	32	0.88
D	7	14	18	0.25
E	4	26	32	0.38
F	4	23	25	0.13

Note. ROI= Rate of Improvement. ROI calculated by posttest-pretest/weeks and prorated by student start date.

Graphs for reading comprehension progress are displayed in Figure 2. Table 8 shows the

non-overlapping data points for maze.

Table 8.

Maze Non Overlapping Data Points by Individual

Dyad	Student	Weeks in PALS	Non Overlapping Data Points	Total Non Overlapping Data points
Dyad 1	A	12	1	1
	B	12	---	
Dyad 2	C	7	1	1
	D	7	---	
Dyad 3	E	4	0	0
	D	4	0	
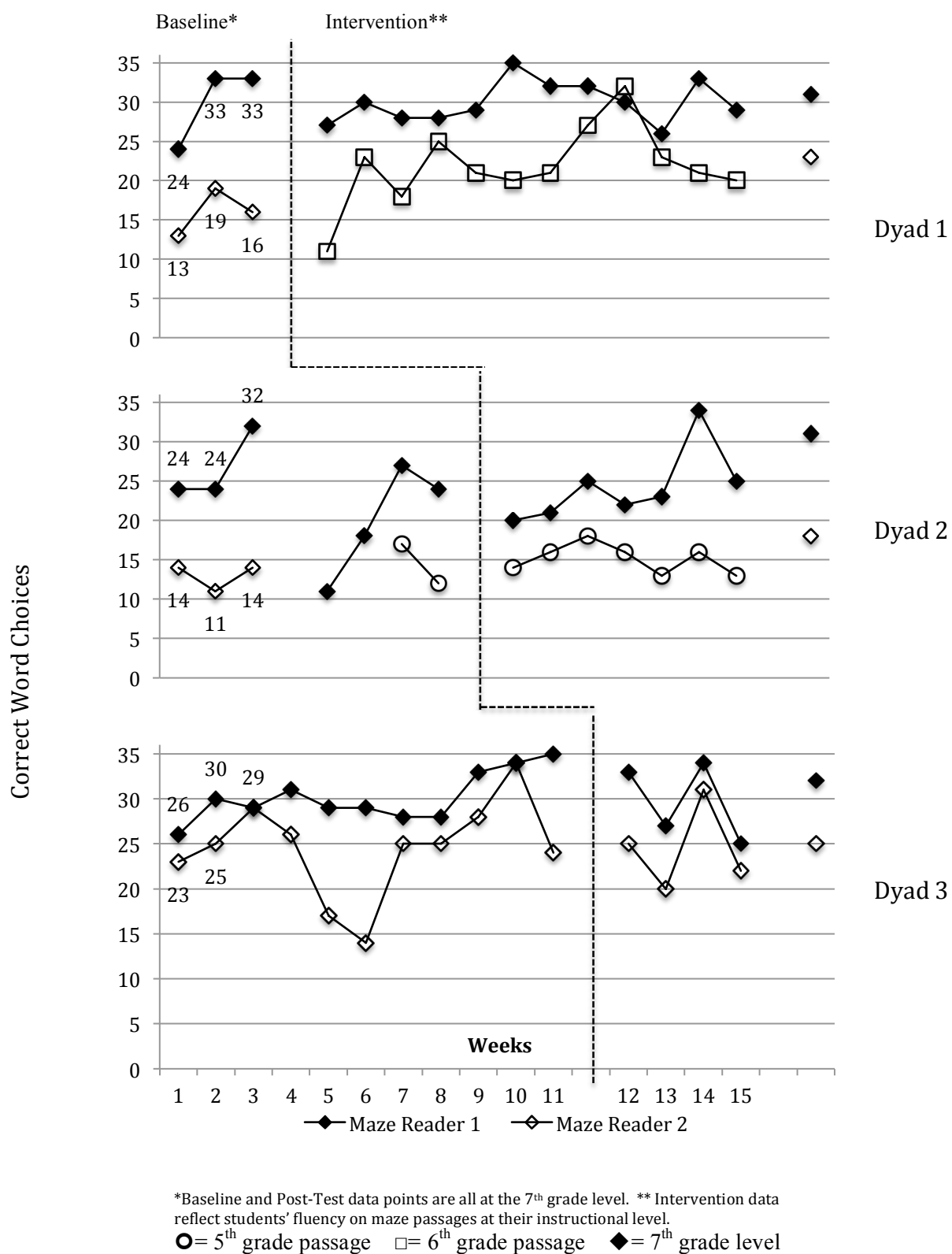
Figure 2. Reading Comprehension Progress

A review of the maze data indicated considerable variability in reading comprehension performance was detected. Significant improvement in reading comprehension was noted for the lower performing reader in Dyad 1. Some improvement was noted for the lower performing reader in Dyad 2. No improvements were observed for either of the students in Dyad 3.

Social Validity: Participants

At the end of the intervention period, all study participants completed a social validity questionnaire regarding their perception of the PALS intervention and reading. PALS participants were provided with six questions to rate from 0 (least) to 5 (most). A summary of the answers to the PALS participant's questionnaire is shown in Table 9.

Table 9.

Participant Perceptions of PALS and Reading

Question	Higher Performing Readers		Lower Performing Readers	
	Average	Range	Average	Range
I have improved my reading skills since the beginning of the year.	3.33	2-5	4.33	4-5
I like to read.	2.67	1-4	2	0-3
My teachers have helped me become a better reader.	2.67	2-4	3	1-5
Working with a partner has helped me become a better reader.	2.33	2-3	4	3-5
I like working with a partner for reading.	1.67	1-3	3	0-5
I would be interested in working with a partner more in my other classes.	1.67	0-3	2.67	0-5

Both the higher performing and lower performing readers in each dyad identified improvements in reading since the beginning of the school year. Lower performing readers reported a perception of greater gains than higher performing readers, with all respondents identifying gains. On average, higher performing readers in the study identified a greater preference for reading than lower performing readers. The higher

performing readers were slightly more inclined to attribute gains in reading skills to working with a teacher than lower performing readers. Notably, the lower performing readers, on average, attributed gains in reading skills to working with a partner, with all respondents answering that working with a partner helped them improve in reading. Additionally, two out of three lower performing readers identified that they enjoyed working with a partner. Finally, the lower performing readers, on average, were slightly more interested in working with a partner for other classes.

Two open-ended questions were provided in the social validity questionnaire to gather further information about what the PALS participants liked most about working with a partner and what they would change. Responses to open-ended questions are displayed in Table 10.

Table 10.

Participant Responses to Open-Ended Questions

Participant	Q1. What did you like most about working with a partner?	Q2. What would you want changed if you were to do something like this again?
Higher Performing Readers		
A	"She could tell me if I missed or mis-pronounced a word."	"I would want to change how much we did it. Like every day a week for me wasn't the best. And how long it was, like 4 months is a lot."
C	"The fact that my partner would help me correct stuff if I was wrong"	"I would change the times of the different activities"
E	"If you ever made a mistake your partner would correct it."	"More independent exercises."
Lower Performing Readers		
B	"Well working with a partner really helped me read faster. It helped me be calmer when I was reading to knowing it wasn't just me there."	"The only thing I would change is the time frame. It was really hard to stay focused after like a month."
D	"We both did the work."	"The time and dates."
F	I liked, well having laughs with my partner"	"Of how long it was!!!"

Although participants generally identified positive reasons they enjoyed working with a partner, it is notable that higher performing readers typically identified the corrective role the partner could take, while the lower performing readers identified positive social qualities such as sharing the work load, feeling calmer when reading with a partner, and laughing with a partner. This suggests that, for struggling readers, a secondary gain from peer tutoring is positive social interactions. Importantly, three out of six readers identified that the time frame for the activities was too long. Finally, one reader identified a desire for more independent activities.

Social Validity: Interventionist

Due to the secondary interventionist withdrawing from the study, only the primary interventionist provided social validity information. This interventionist was provided with five questions to rate from 0 (least) to 5 (most). Answers to the questionnaire are shown in Table 11. Two open-ended questions were provided to the interventionist to gather further information about what the interventionist liked most about implementing PALS for reading and what she would change. Responses to open-ended questions are summarized in Table 12.

Table 11.

Interventionist Perception of PALS and Reading

Question	Response
I found PALS reasonable to implement.	5
Students seemed to enjoy PALS.	5
Students reading ability improved from participating in PALS.	5
I would implement PALS for reading again.	5
I would like to implement PALS for another subject.	3

Table 12.

Interventionist Responses to Open-Ended Questions

Questions	Points Identified by Interventionist
1. What did you like most about implementing PALS for reading?	- Increased confidence observed in participants - Students identified their own improvements - New friendships formed between partners - Perceived reduction in late arrivals/absenteeism among participants - Perception that rewards system was meaningful to students
2. What would you change if you were to do something like this again?	- Time of day for intervention was challenging due to arrival procedures, interruptions and necessity of getting extra help for core classes during same period. - Length of class period did not allow sufficient time for students to settle in to the intervention period or allow time for questions to be answered. - Close proximity of dyads made it difficult for partners to hear each other. - Students had difficulty calculating points, especially after a break or a weekend.

The interventionist indicated that implementing PALS was very reasonable given the resources typically available within a middle school setting. In addition to improvement in students' reading performance, the interventionist further articulated that students appeared to gain greater confidence in their reading abilities. New friendships appeared to form within dyads and reductions in student tardiness and absenteeism were perceived. Importantly, students appeared to enjoy participating in PALS.

Challenges to implementing PALS included the scheduled intervention occurring during the first period of the school day that also served as a period where students could get extra help from teachers when needed. Further, the duration of the period in which the PALS intervention took place did not allow for sufficient time to transition into activities. This was likely further impacted when students had questions or confusion regarding how many points they had earned. Finally, the physical space of the room was something to be considered when implementing PALS. In order to work effectively, sufficient space must be provided for students to read at a comfortable volume with each other.

Chapter 4: Discussion

Effects of Peer Assisted Learning Strategies

The goal of this study was to evaluate the efficacy of using PALS to provide a Tier 2 reading intervention for seventh grade students with the standard staff members typically available within a middle school setting. This method for implementation of PALS is in contrast to most prior research about PALS which typically included a high level of technical assistance, including frequent interventionist observation and performance feedback to ensure problems are solved quickly (Fuchs et al., 2000). Specifically, the study evaluated the effect of PALS on participants' reading fluency and comprehension for both higher and lower performing readers with limited additional support from the research staff. In addition to reading outcomes, the study also investigated the participants' and interventionist's perception of PALS and the social validity of using PALS as a Tier 2 reading intervention.

When considering the effects of PALS on oral reading fluency performance, the PALS intervention led to mixed, but limited, gains. Prior to intervention, four of the six students were reading within the at-risk level, according to national norms for oral reading fluency. On R-CBM, both students in Dyad 1 made gains after PALS was implemented. Additionally, the second reader in Dyad 2 showed improvements in oral reading fluency while participating in PALS. By comparison, the first reader in Dyad 2 and both students in Dyad 3 made few gains in R-CBM. Although the data showed overall slow reading growth for most of the students, their rates of improvement (ROI) were above national averages and suggest that the PALS intervention did have some effects, particularly for readers whose instructional reading level was below their current

grade. Further, after participating in PALS, all but one student was performing within the seventh grade average range, or higher, in oral reading fluency. These findings are in contrast to findings by Spörer & Brunstein (2009) and Fuchs et al., (1999) who did not find gains in reading fluency for older students who participated in PALS. Importantly, similar rates of growth in oral reading fluency were observed for both higher and lower performing readers participating in PALS. This finding is similar to findings by Fuchs et al. (2001) who suggested that when students use peer tutoring it is beneficial for both readers; notably Dufrene et al. (2010) that found peer tutoring was effective at increasing oral reading fluency for certain students.

In regard to the effects of PALS on increasing reading comprehension among middle school students, both second readers in Dyads 1 and 2 showed improvements, but the first readers in Dyads 1 and 2, as well as the two students in Dyad 3 did not. These mixed results are similar to previous research by Fuchs et al. (1999) that found PALS resulted in moderate gains in reading comprehension with an effect size of .34, but weaker readers made the greatest gains. It should be noted that during the intervention, several of the higher performing students were able to complete the USM-maze probes in less than the allotted three-minute time frame; this may have impacted the amount of growth observed. Additionally, it was observed, several weeks into the intervention, several of the lower-performing students began to "finish" their maze task early with a noted increase in error rate; it is possible that these students disliked the stigma of taking longer than peers and, therefore, quickly circled words at random instead of reading carefully. This likely contributed to the variability observed for the second reader in Dyad 3.

Further, the maze probes were from published children's literature, rather than controlled passages. Using passages from children's literature may have affected students scores based on individual prior knowledge of the passage topic (Brown-Chidsey, et al., 2005). As a result, there are limitations to maze assessments. As identified by Tolar et al, (2011) the use of novel maze passages across time may not be as sensitive to changes in low performing students' ability to use background information, make inferences, and comprehend text as when using familiar passages. Further, there is some question regarding the validity of maze probes to measure reading comprehension of passages. For example, January & Ardoin (2012) found that students performed nearly as well on scrambled maze probes as intact maze probes. This suggests that rather than measuring reading comprehension at the passage level, the maze task more accurately measures reading comprehension at the sentence level. Another factor that may have contributed to similar rates of maze growth for all students was the practice effect inherent in completing maze probes weekly. These limitations of the maze task make the obtained results less generalizable than the oral reading data.

Treatment integrity data suggested that the PALS intervention was implemented as designed. Interestingly, the remaining interventionist noted that students had a hard time understanding how long the activities took. Given that the role of the interventionist was to assign points and signal when activities needed to change, it was unclear why students had this confusion. It is unclear if there was a fundamental misunderstanding of the role of the interventionist or if there was another reason why students were confused about how many points they earned. One possibility is that the training sessions for each dyad occurred during the initial two intervention sessions when each dyad was enrolled

in the intervention condition. This is in contrast to 12 training days outlined by the PALS 2-6 Manual, or the four training days and additional 6 guided practice days employed by Spörer & Brunstein (2009). Further, no opportunity for guided practice of full PALS sessions were explicitly provided for each dyad, which may have contributed to the confusion among the students. Finally, it is possible that without the more intensive technical assistance typically provided during PALS studies and described by Fuchs et al. (2001), small changes in the PALS procedures were made by the students and never corrected by the interventionist.

It is worth noting that the students who made the greatest gains used PALS for the longest time. It is possible that the observed higher effects for both students in Dyad 1 resulted because they had 12 weeks of intervention, while Dyad 2 had only 6 weeks, and Dyad 3, 4 weeks. There has been some research about how long an intervention needs to be in place before effects will be seen (Christ, Zopluoglu, Monaghen, & Van Norman, 2013). Christ et al. (2013) found that it is best to have at least six data points for R-CBM measures gathered weekly before the effects of the intervention could be observed. It may be that in order for middle school students to benefit from an intervention like PALS it must be implemented for a longer duration. This is consistent with findings that older students make smaller reading gains than younger students (Christ, Silberglitt, Yeo, Cormier, 2010). It is worth noting that all but one of the students had weekly oral reading gains higher than the AIMSweb R-CBM seventh grade 50th percentile national average of .64.

Information provided through the social validity questionnaires provided important information regarding secondary gains for lower performing readers

participating in PALS. Although the lower performing readers were unlikely to identify that they liked to read, two out of the three lower performing readers identified that they liked working with a partner for reading. Further, lower performing readers tended to attribute working with a partner as helping them become a better reader. Importantly, all lower performing readers in the PALS intervention identified that they had become better readers over the course of the intervention. Other studies of PALS with secondary students have not identified such secondary gains of positive beliefs about reading for low performing readers (Fuchs et al., 1999). The increase in confidence while reading is an important factor to consider, particularly when providing intervention for older students who continue to struggle with reading. In this regard, it may have been the weekly progress assessments that boosted the students' reading scores rather than the intervention itself.

The interventionist also perceived increased self-confidence displayed by PALS participants. Additionally, the friendships formed through PALS participation, including participants identifying laughing with partners and feeling calmer when reading with a partner, may be an important consideration for providing additional reading intervention for students in this age group. As suggested by Lindo and Elleman (2010), evidenced-based interventions are more likely to be implemented when the practitioners in the field (i.e., teachers and students) find the intervention enjoyable and feasible to implement with the resources available. The results from the social validity questionnaires support that PALS may be one way to help struggling readers find greater enjoyment in reading; such enjoyment is a helpful component for improving student outcomes (Balfanz, et al., 2002).

Instructional Implications

Results from this study suggest that PALS was associated with some long-term gains in student reading performance, but that the weekly progress monitoring, rather than the PALS activities, may have led to increasing oral reading fluency and reading comprehension performance for seventh grade students. Similar rates of improvement were noted for both higher and lower performing students during baseline and once they began PALS. All of the students reported an increase in their perceptions of their reading abilities. This suggests that increasing meaningful partner work during reading activities may serve to increase student's positive perception of themselves as readers. The smaller gains observed for Dyads 2 and 3 are perplexing. One possible explanation is that the wait time from enrollment in the study to when Dyads 2 and 3 began, affected their reading performance once PALS was implemented. If so, then the data support a lack of expectancy effects among the students once PALS began. Additionally, because students engaged in weekly progress monitoring for both oral reading fluency and reading comprehension while waiting to join the PALS intervention, it is possible that weekly progress monitoring and performance feedback on reading fluency rate served to increase oral reading fluency to a sufficient level prior to joining the PALS intervention. Another possible explanation may be related to the difference in reading levels for material used. The two students who showed impressive growth were also students who used different grade level reading material during the intervention phase. This would suggest that reading interventions conducted at the student's current Lexile level (e.g., fifth or sixth grade) improve students grade level reading skills as well. However, it also begs the

question of whether the obtained results from Dyad 1 were from PALS, maturation, or from progress monitoring with performance feedback.

Limitations and Future Research

Several limitations are noted in this current study. First, stability of R-CBM baseline was never fully established, with greater than 20 correct words per minute variability noted for many of the participants. A major threat to internal validity existed due to the limited number of students available during the class period the intervention was held. Additionally, release time for staff training was not available, therefore rather than providing a comprehensive overview and training in PALS in a full day session, training was provided as the schedule allowed. Although the same training components were provided, it is unclear if the shorter training sessions served to increase or decrease fidelity of intervention implementation. Notably, multiple intervention days were missed for the whole group due to special activities, snow days, or interventionist illness, and for individual students due to absences.

PALS at the secondary level continues to be an area ready for future research. Results from this study suggest that intervention provided at the instructional level can lead to improvements in grade level material, but that the effects may have resulted from weekly progress monitoring rather than the intervention. There was some evidence of a possible secondary gain of increased confidence in reading abilities for students who participate in PALS and this should be considered through further research. Additionally, as significant gains were observed for both readers in Dyad 1 who participated in PALS for 12 weeks, but not for those who participated for seven weeks or less, it may be beneficial to consider the effects of participating in PALS for a longer period of time.

Chapter 5: Summary

Peer Assisted Learning Strategies (PALS) for reading have substantial research indicating positive outcomes for both high and low performing readers in grades 2-6. This study attempted to expand the literature on PALS to outcomes at the middle school level. The results of this multiple baseline across individuals study indicated that improvements in reading fluency and comprehension were observed for the first Dyad, and were observed but were very limited in the second two Dyads. Nonetheless, the lower performing readers who participated in PALS were more likely to express a perception that their reading abilities had improved. Lower performing readers in PALS reported enjoying working with a partner and were likely to attribute reading gains to working with their partner. The results of this study suggest that although weekly progress monitoring may be a component of increasing reading skills, working with a partner may contribute to increased perception of reading improvements for individual students.

References

Balfanz, R., McPartland, J., Shaw, A. (2002). Re-conceptualizing extra help for high school students in a high standards era. *The Journal for Vocational Special Needs, 25,* 24-41.

Brown-Chidsey, R., Davis, L., Maya, C. (2003). Sources of variance in curriculum-based measures of silent reading. *Psychology in the Schools, 40,* 363-377.

Brown-Chidsey, R., Johnson, P., Fernstrom, R. (2005). Comparison of grade-level controlled and literature-based maze CBM reading passages. *School Psychology Review, 34,* 387-394.

Brown-Chidsey, R., Steege, M. W. (2010). *Response to intervention: principles and strategies for effective practice 2ⁿᵈ edition.* New York: The Guilford Press.

Cappella, E., Weinstein, R. S. (2001). Turning around reading achievement: predictors of high school students' academic resilience. *Journal of Educational Psychology, 93,* 758-771.

Christ, T. J., Silberglitt, B., Yeo, S., & Cormier, D. (2010). Curriculum-based measurement of oral reading: An evaluation of growth rates and seasonal effects among students served in general and special education. *School Psychology Review, 39,* 447-462.

Christ. T. J., Zopluoglu, C., Monaghen, B. D., & Van Norman, E. R. (2013). Curriculum-based measurement of oral reading: Multi-study evaluation of schedule, duration, and dataset quality on progress monitoring outcomes. *Journal of School Psychology, 51,* 19-57.

Daly, E. J., Chafouleas, S., Skinner C.H. (2005). *Interventions for reading problems: designing and evaluating effective strategies.* New York: The Guilford Press.

Dufrene, B. A., Reisener, C. D., Olmi, D. J., Zoder-Martell, K., McNutt, M. R., Horn, D. R. (2010). Peer tutoring for reading fluency as a feasible and effective alternative in response to intervention systems. *Journal of Behavioral Education, 19,* 239-256. doi:10.1007/s10864-010-9111-8

Fuchs, D., Fuchs, L. S., Burish, P. (2000). Peer-assisted learning strategies: an evidence-based practice to promote reading achievement. *Learning Disabilities Research & Practice, 15,* 85-91.

Fuchs, D., Fuchs, L. S., Thompson, A., Svenson, E., Yen, L., Otaiba, S. A., et al. (2001). Peer-assisted learning strategies in reading. *Remedial and special education, 22,* 15-21.

Fuchs, L. S., Fuchs, D., Kazdan, S. (1999). Effects of peer-assisted learning strategies on high school students with serious reading problems. *Remedial and Special Education, 20,* 309-318.

Fuchs, L. S., Fuchs, D., Kazdan, S. Allen, S. (1999). Effects of peer-assisted learning strategies with and without training in elaborated help giving. *The Elementary School Journal, 99,* 201-219.

Fuchs, D., Fuchs, L. S., Simmons, D. C., Mathes, P. G. (2008). *Peer Assisted Learning Strategies: Reading Methods for Grades 2-6.* Nashville, TN: Vanderbilt University.

Goss, C. L., & Andren, K. (2014). *Dropout Prevention.* New York: The Guilford Press.

Guthrie, J. (1973). Reading comprehension and syntactic responses in good and poor

readers. *Journal of Educational Psychology, 65,* 294-299.

January, S. A., Ardoin, S. P. (2012) The impact of context and word type on students'

maze task accuracy. *School Psychology Review, 41, 262-271.*

Kazdin, A. E. (1982). *Single-case research designs- methods for clinical and applied*

settings. New York: Oxford.

Lindo, E. J., Elleman, A.M. (2010) Social validity's presence in field-based reading

intervention research. *Remedial and Special Education, 31* (6), 489-499.

doi.10.1177/0741932510361249.

McMaster, K. L., Fuchs, D., Fuchs, L. S. (2007). Promises and limitations of peer-

assisted learning strategies in reading. *Learning Disabilities: A Contemporary*

Journal, 5, 97-112.

National Center on Response to Intervention (2011). *RTI in middle schools: frequently*

asked questions. Washington, DC: U.S. Department of Education, Office of

Special Education Programs, National Center on Response to Intervention.

Reschly, A. L., Busch. T.W., Betts., J., Deno, S. L., Long, J.D. (2009). Curriculum-based

measurement oral reading as an indicator of reading achievement: a meta analysis

of the correlational evidence. *Journal of School Psychology, 47*, 427-469.

Tolar, T. D., Barth, A. E., Francis, D. J., Fletcher, J. M., Stuebing, K. K., Vaughn, S.

(2012). Psychometric properties of maze tasks in middle school students.

Assessment for Effective Intervention, 37, 131-146.

Doi:10.1177/1534508411413913.

Sporer, N., Brunstein, J. C. (2009) Fostering the reading comprehension of secondary

   school students through peer-assisted learning: Effects on strategy knowledge,

   strategy use, and task performance. *Contemporary Educational Psychology, 34,*

   289-297. Doi:10.1016/j.cedpsych.2009.06.004

Appendix A

R–CBM ADMINISTRATION DIRECTIONS

Place the unnumbered copy of the R–CBM probe in front of the student. Place the Examiner's Copy or computer/device screen in front of you, shielded from the student's view.

Say to the student:
When I say "Begin," start reading aloud at the top of this page. Read across the page (demonstrate by pointing across page)**. Try to read each word. If you come to a word you don't know, I'll tell it to you. Be sure to do your best reading. Are there any questions?**

Answer any questions the student may have. Say:
Begin.

Start timing when the student says the first word. If the student does not say a word after 3 seconds, say the first word. Mark the word that you provided as incorrect. When the student says the next word, start timing.

As the student reads, mark any errors (words read incorrectly, skipped, or out of order).

o **Paper administration:** Draw a slash (/) through the incorrect word. Record any insertions by writing them above the line of text where the insertion was made. If the student self-corrects within 3 seconds, mark the self-correction with "SC."

o **Computer-assisted administration:** Click/touch the incorrect word. If the student self-corrects within 3 seconds, click/touch the word again to remove the mark. If the student skips a line, click the box to the left of the line.

Do not correct errors. Mark them as incorrect and let the student continue reading. If a student stops or struggles with a word for 3 seconds, give the student the word, mark it as incorrect, and move on.

At the end of 1 minute, place a bracket ( ]) (or click/touch) after the last word the student attempted. Let the student finish reading the sentence and then say; **Stop.**

For universal screening, administer the second and third probes the same way, but shorten the directions. Say:
When I say "Begin," start reading aloud at the top of this page.

You may also use these abbreviated directions in progress monitoring after the student has become familiar with the task.

In universal screening, if the student reads 10 words or less correctly on the first or second probe, do not administer the remaining probe(s).

Sample R-CBM

When Maggie Ray's mother told her they would visit Mrs. Zale at teatime next	14
Thursday, Maggie Ray said she wasn't going. Mrs. Zale lived in the big house on	29
the corner of the block. Mrs. Zale's yard was filled with dead trees and surrounded	44
by a tall, spiked fence. The curtains over Mrs. Zale's windows were never pulled	58
open, and her house was always dark at night. Mrs. Zale didn't seem to have any	74
visitors except the mailman when he delivered her mail.	83
On Wednesday, Maggie Ray cornered the mailman. "What's Mrs. Zale like? I'm	95
supposed to go to her house on Thursday for tea, and I need to know."	110
The mailman smiled at Maggie Ray. "Don't tell me you've never met Mrs. Zale.	124
You've lived down the street from her for over a year."	135
"Well I haven't," Maggie Ray said. "But I have to meet her tomorrow. Do you	150
think you could tell me a bit about her?"	159
"Oh, no," the mailman said. "Mrs. Zale will want you to be surprised."	172
When teatime rolled around the next day, Maggie Ray's mother had to drag	185
Maggie Ray up the sidewalk to Mrs. Zale's front door.	195
"I don't want to go in there," Maggie Ray panted. "Please don't make me go in	211
there."	212
Before Maggie Ray could escape from her mother's grip, the front door opened.	225
Maggie Ray's eyes nearly fell out of her head when a monkey in a red velvet vest	242
opened the door. The monkey squawked at Maggie Ray and her mother and	255
pointed them toward the dining room.	261
The dining room held another surprise. A parrot was sitting on the chandelier.	274
"Hello, hello, hello," he said as they walked into the room. "Would you like cream	289
or sugar, cream or sugar?"	294
Maggie Ray couldn't believe her eyes. A silver tea service was laid out on the	309
dining room table. There were trays of cookies, tarts, candies, and chocolates.	321
"Welcome, welcome," said the old woman who stepped into the room. She was	334
dressed in an emerald ball gown. "I'm so glad you could make it, Maggie Ray." Mrs.	350
Zale really was full of surprises!	356

When Maggie Ray's mother told her they would visit Mrs. Zale at teatime next Thursday, Maggie Ray said she wasn't going. Mrs. Zale lived in the big house on the corner of the block. Mrs. Zale's yard was filled with dead trees and surrounded by a tall, spiked fence. The curtains over Mrs. Zale's windows were never pulled open, and her house was always dark at night. Mrs. Zale didn't seem to have any visitors except the mailman when he delivered her mail.

On Wednesday, Maggie Ray cornered the mailman. "What's Mrs. Zale like? I'm supposed to go to her house on Thursday for tea, and I need to know."

The mailman smiled at Maggie Ray. "Don't tell me you've never met Mrs. Zale. You've lived down the street from her for over a year."

"Well I haven't," Maggie Ray said. "But I have to meet her tomorrow. Do you think you could tell me a bit about her?"

"Oh, no," the mailman said. "Mrs. Zale will want you to be surprised."

When teatime rolled around the next day, Maggie Ray's mother had to drag Maggie Ray up the sidewalk to Mrs. Zale's front door.

"I don't want to go in there," Maggie Ray panted. "Please don't make me go in there."

Before Maggie Ray could escape from her mother's grip, the front door opened. Maggie Ray's eyes nearly fell out of her head when a monkey in a red velvet vest opened the door. The monkey squawked at Maggie Ray and her mother and pointed them toward the dining room.

The dining room held another surprise. A parrot was sitting on the chandelier.

"Hello, hello, hello," he said as they walked into the room. "Would you like cream or sugar, cream or sugar?"

Maggie Ray couldn't believe her eyes. A silver tea service was laid out on the dining room table. There were trays of cookies, tarts, candies, and chocolates.

"Welcome, welcome," said the old woman who stepped into the room. She was dressed in an emerald ball gown. "I'm so glad you could make it, Maggie Ray." Mrs. Zale really was full of surprises!

USM-maze Directions

MAZE (silent reading) Administration and Scoring Instructions

Administration

1. Place the silent reading passage in front of each student and say:

   "When I say 'begin' I want you to read a story. You will have three (3) minutes to read the story. Some of the words in the story are replaced with a line that has 3 words under it. Your job is to circle the one (1) word that makes the most sense in the story. Only one (1) word is correct."

   "When I say 'begin' turn to the first story and start reading silently. When you come to a group of three words, circle the one (1) word that makes the most sense. Work as quickly as you can without making mistakes. If you finish the page turn to the next page and keep working until I say stop or you are all done with the story. Do not go on to the next story until I tell you. Do you have any questions?"

2. Say "Begin" and start your stopwatch.

3. Monitor students to make sure they understand that they are to circle only one (1) word.

4. At the end of three [3] minutes say "Stop. Put your pencils down.

Scoring

1. Count the number of word choices that the student circled up to the point of the last word circled. Do not count any words past the last circled word.
2. Count how many word choices were incorrect.
3. Write the total number of choices and errors in a number sentence at the bottom of the page as follows:

   16 – 2 = 14 correct word choices

Sample USM-maze

The sun is bright, the heat heavy. No longer do sudden visions of _____ in
<u>water   to   feet</u>

the distance stir comment, for _____ now we know them to be _____ of
<u>show   by   the</u>   <u>can   tricks   plates</u>

light. Marius rides beside me _____ a time, but when the Sea of Salt
<u>part   see   for</u>

_____ in view at last, his lips _____ with smiles that start and vanish,
<u>comes   finds   she</u>   <u>more   sleep   twitch</u>

_____ his eyes burn with too bright a _____. Finally, he can wait no
<u>can   and   starting</u>   <u>light   on   crow</u>

longer.

_____ takes his leave and rides ahead _____ join the vanguard,
<u>On   Sun   He</u>   <u>can't   to   army</u>

hoping, I believe, _____ get the first glimpse of the _____ he hungers to
<u>am   flatten   to</u>   <u>enemy   part   forest</u>

engage. A solid _____ of compact build, he gallops back _____ forth,
<u>place   man   unless</u>   <u>and   more   horse</u>

searching the hills for the _____ stronghold, for we wind our way _____
<u>men   characteristic   partly</u>   <u>back   along   forgetting</u>

the Sea of Salt now, and the _____ must not be far.
<u>rock   cars   or</u>

I see _____ now, spurring toward me with triumph _____ his
<u>desk   him   earlier</u>   <u>about   cannot   in</u>

restless eyes, sweating from the _____ heat, dusty from the hellish sands
<u>awful   golden   less</u>

_____ this devil's land twelve hundred feet _____ the sea. A man so
<u>be   of   growing</u>   <u>close   under   shoe</u>

eager _____ battle might be an asset to _____ army. But he is one
<u>cup   for   running</u>   <u>are   any   fortune</u>

to _____, for hate, not reason, rules him.
<u>collect   watch   soap</u>

"The _____ they call Masada is ahead!" he _____, the words
<u>ominous   rock   bottle</u>   <u>says   jumps   aren't</u>

7-1: *Masada: The last fortress* by G. D. Miklowitz (L=850).   1

Appendix B

PALS Store Survey

Please list items that you would like to see in the PALS store.

Gift Cards

Activities

Snacks

School/Fun Items

Other

Appendix C

Day 1

Prior to introducing PALS to students, identify partners to each other, as well as identify which student will be the first (always the higher performing student) or second (always the lower performing student) reader. Do not identify for students which reader is higher or lower performing.

Introduction to PALS/Materials Set Up: 1-2 minutes

You and your partner will be working together for each PALS session

"In PALS you're going to take turns doing the two roles: the Coach and the Reader. The Coach is like a tutor; when you're the Coach, you're helping your partner. When you're the Reader, you read the stories out loud and answer questions. The Coach may help you with this when needed. You're going to do each role every day."

You and your partner will do each job everyday when you're team participates, so each day you're get a chance to be both the Reader and the Coach."

"So let's talk about working with your partner. For each activity, the first reader will always read first and the second reader will always read second. Remember, when your partner is reading, you are the Coach.

Each day you will get your team's box; which will contain your PALS folder, book and writing utensil. Each day when you come in, one of you will need to get the box so you're ready when it's time to begin.

"First things first, whichever partner gets the box will take the books out so you each have one. At the end of each session you'll put a bookmark where you left off, that way you know where to begin the next day."

Observe to make sure each partner has a book

"Great- the other thing you'll do each day when you come in is get the materials out of the folder. Get the questions card out and put in at the top of your table."

Demonstrate and monitor students.

The questions on the card will help you with the reading activities we will learn about later. Next take out the correction card- the coach will use the correction card to help the reader correct mistakes. Next, take the point sheet and put it next to the reading book, so you can mark it easily.

Monitor students

"Everyday when you come in, you'll need to set up your materials this way."

Partner Reading: 1-2 min

"The first activity each day is the Partner Reading. The goal with Partner Reading is to help you learn to read quickly and correctly. "

"Who remembers what the two PALS jobs are?"

(Student: Coach and Reader)

"Yes- Readers read aloud and answer questions; coaches read along silently and help their partners with mistakes and hard words."

"Most activities will take 5 minutes. It's really important that you do not switch roles until I tell you to. I'll usually say something like "time to switch." When this happens, the first reader will become the Coach, and the second reader will begin reading."

"The second reader will always re-read what the first reader read during the first 5 minutes. This means that the second reader will need to go back to where the first reader started reading that day. When you switch roles, you'll also switch materials, so the second reader will give the first reader the points sheet and question cards."

"When you're reading aloud, you should always try your best to read quickly, carefully and with expression. What does it mean to read with expression?"

Discuss the meaning of reading with expression, demonstrate if needed.

Excellent. Now we can talk about how to help, and the retell, then we'll put it all together and practice. "

How to Give Help: 2-3 minutes

"Everyone makes mistakes occasionally when reading- especially when reading out loud. It's important to correct errors, that way you'll learn new words and become a better reader."

"When you're a Coach, your job is to help your partner find and correct mistakes. That's why you're following along and reading silently when your partner is reading. By helping with mistakes, you're working as a team to help both of you become better readers."

Show the Correction Card (transparency 3.3)

"When your partner makes a mistake, and doesn't correct it, as the Coach your job is to immediately say 'Check it.' This way you're partner knows he or she made a mistake."

(point to correction card where it says 'check it.')

"You're not being rude or making a buzzer sound, you're just giving your partner the heads up. When the coach says 'Check it' it gives the reader the chance to correct the mistake on his or her own, or to say 'I need some help.'"

(point to correction card where help is given)

"If the reader asks for some help, you will tell him or her, 'the word is_____. What word?' and your partner will repeat the word. If s/he gets it right, say "good. Read the sentence again."

Giving help is really pretty fast- this is what it looks like

(demonstrate with a student the help giving strategy).

Types of Errors: 3-4 minutes

Show the "4 Kinds of Mistakes" sheet (Transparency 3.1)

"Before you practice giving help, we're going to practice finding mistakes. There are 4 major types of mistakes people make when reading out loud- who can read the 1st one?"

Have someone read the 1st one to the group, while you point to it (saying the wrong word).

"Thank you. Saying the wrong word happens when someone says a different word from what is written on the page and it's a pretty common mistake to make."

Point to the second mistake (leaving out a word).

"The second kind of mistake people make when reading out loud is leaving out a word or a word ending. This happens when you skip a word while reading. Who can read the 3rd one?

Point to the third mistake; have someone read the 3rd one to the group (adding a word or word ending).

"Thank you. This means saying a word that is not in the sentence. If your partner says an extra word that's not in the sentence, it's a mistake. This can be tricky to catch if you're not following along, because sometimes our ears don't notice there's an error."

Point to the third mistake (waiting longer than 4 seconds to say a word).

"The 4th type of mistake is waiting longer than 4 seconds to say a word. Sometimes this happens if the reader is trying to think of what the word says. If you're partner doesn't know the word after 4 seconds, it's the coaches job to help.

"Let's practice catching these types of mistakes. What will you say when you hear a mistake?"

(Student: check it)

"Good, and if your partner says 'I need help' or take longer than 4 seconds to say a word, what do you do?"

(Students: tell your partner the word, have your partner say the word, then read the sentence again).

"Excellent! Listen to me read and see if you can identify mistakes as though you both are my partner. I'll be reading from the first paragraph of the activity packet"

Show Activity Packet Page two, read the first and second paragraphs of "Forgetful Faye" as written below. For some errors, correct on your own, for two errors say "I need help" and have students perform the error correction procedure. The underlined word is the error, *italics* is the correct word.

"In Faye's house, everyone remembered things… everyone except Faye. Faye's mother remembered where she put things. Faye's father (wait 5 seconds…) (*remembered)* how to fix things. Even Faye's little sister remembers (*remembered)* things better than Faye did. Faye had trouble remember (*remembering)* even the smallest things. If her mother asks (*asked*) her to go to the store for (*to get)* milk, Faye would bring home the (*inserted the)* bread. If her father asked (wait 5 seconds) (*her*) to feed the dog, Faye would give a soccer (*saucer)* of milk to the cat. Faye had truffles (*trouble)* remembering anybody (*anything)."*

"Great work following along and catching my mistakes. Now we will learn how to record points and do the retell, then I will have you practice with each other in the books from your box."

Recording Points: 1-2 minutes

Show printed out copy of the points sheet

You'll be working as a team to earn PALS coupons that will be redeemable in the PALS store. For every 100 PALS points you earn, you'll be able to get 1 PALS coupon. You'll also get PALS coupons each week when we do progress monitoring. The store will be open on Thursday's for you to spend your PALS coupons."

"During Partner Reading, you'll earn 5 points every time you read a page, so the more sentences you and your partner read, the more points you'll earn. Be sure to read quickly, correctly and with expression so that you also understand what you read. If you make a reading mistake, it's okay. You will still be able to earn points for that page as long as your coach is correcting mistakes and you're rereading the sentence correctly."

"When your team earns points for each page read or bonus points awarded by me, who ever is the coach at the time will simply make a line through the points like this."

Demonstrate with a pencil on the points sheet.

Retell: 2-3 minutes

"The second activity of PALS called Retell. After you and your partner have each read for 5 minutes, we'll do retell for 2 minutes."

"Retell is helpful because it lets you know if you understood what your read. When you retell a story, you talk about the most important information you learned. Reading many sentences is good, but understanding what you read is even more important."

"The second reader will retell what happened in the story. When you do this, second readers, you will tell the things that happened in the order in which they happened."

Show Question Card/ transparency 2.2

"Take out the question card."

Observe to make sure students have question card out

"First readers you will always ask the second readers 'What happened first?' then wait for their response. Then you will ask them, 'what happened next?' and so on."

"Who can tell me what the first reader's job is during retell?"

(Students: to ask the questions/ what happened first/what happened second)

"Who can tell me what the second reader's job is during retell?"

(Students: to retell the story in order)

"Excellent. Second readers, it is okay to refer back to your book to make sure you didn't miss any important details, but the goal is to give a summary, not just re-read the details.. Since you need to condense 5 minutes of reading into a 2 minute retell, you'll want to make sure you're including just the big details."

"First readers, sometimes you may disagree with your partner about something she or he says during Retell. Or your partner may forget what came next in the story. Since you're working as a team, if this happens your job will be to help your partner with the retell by telling the next thing that happened in the story. Then the second reader can continue to tell the next thing that happened. It's really important to listen to what your partner says so that if your partner gets stuck, you can help."

One thing we didn't cover was how many points you will earn during Retell. The first reader is the one responsible for marking points during retell. He or she will mark 1 point for each detail provided during retell without reading directly from the book. If the first reader provides help by giving a detail, that counts for a point as well."

Partner Reading & Retell Practice: 8-9 minutes

"Let's practice Partner Reading with Retell"

Make sure all partners have book out, points sheet ready, correction card and question card on table and ready to be used.

"Because we're just practicing today, first readers will read for 3 minutes, and then you'll switch jobs. Coaches, remember to provide help using the strategies you've learned and to award 5 points for each page. You may begin."

Set timer for 3 minutes, move around the room, provide feed and corrective feedback. Refer to the Teacher Command Card and PALS Pairs Checklist for specific behaviors to look for.

After 3 minutes:
"Please stop. Now you're ready to switch jobs. second readers, it's your turn to read the SAME text your partner just read. first readers, it's your turn to be the coach. Begin."

Set timer for 3 minutes, move around the room, provide feed and corrective feedback. Refer to the Teacher Command Card and PALS Pairs Checklist for specific behaviors to look for.

After 3 minutes:
"Please stop. Now it's time for Retell. second readers get ready to retell what you've read. You have 2 minutes. Coaches, remember to mark 1 point for each detail provided without saying the exact wording from the book. Begin."

Set timer for 2 minutes, move around the room, provide feed and corrective feedback. Refer to the Teacher Command Card and PALS Pairs Checklist for specific behaviors to look for.

After 2 minutes:

"Please stop. Great job giving this routine a test drive. Any questions?"

Answer any questions provided by students.

Paragraph Shrinking: 4-5 minutes

"Okay, our next activity is Paragraph Shrinking. In Paragraph Shrinking, you'll shrink the information in each paragraph into a main idea statement. The main idea statement tells the most important idea in the paragraph. In Paragraph Shrinking, you'll read aloud for 5 minutes, and Coaches will do the same helping just like in Partner Reading. This difference is that at the end of each paragraph you'll go through 3 steps to create a main idea statement. What does the main idea statement tell us?"

(Students: the most important idea in the paragraph).

"That's right. Being able to make good main idea statements is important because it will strengthen your reading comprehension."

"A main idea statement is made up of 2 parts: the most important who or what in the paragraph and the most important thing about the who or what."

Show transparency 2.3

"Look at the question card, you also have one of these in your folder."

Check to see that students are either looking at the transparency or their own card.

"These are the 3 things the Coach will ask the Reader to do after each paragraph to help him make a good main idea statement. Name the most important who or what, tell the most important thing about the who or what, and say the main idea in 10 words or less."

"We will practice each of these tomorrow."

Day 2

Briefly review Paragraph Shrinking, then continue with lesson (7-9 minutes)

Show transparency Forgetful Faye

"Open up your activity packet to page 2. We will try to figure out the main idea by walking through the 3 steps of Paragraph Shrinking."

Reread the first paragraph aloud to students.

"Now let's look at the Paragraph Shrinking section of the question card. Who can tell me the most important who or what from this paragraph. Just a hint, the most important who or what will always be a person, place, thing or animal."

(Students: Faye)

"Correct. Faye is the main who or what in this paragraph. Either write her name down on the paper, or remember her name in your head."

"What's the next step?"

(Students: name the most important thing about the who or what)

"Correct. I'm going to say some details about Faye, let's see if you can identify if they are the most important things about her for the main idea."

"Faye lived with her father, mother and sister. Is this the most important idea?"

(Students: No)

"Nice, there's lots of details about Faye, but they are not always the most important. How about this: Faye had a hard time remembering things." Does this sound like the most important thing that happened in this paragraph?"

(Students: yes).

"Exactly. That really tells the biggest thing that happened in the paragraph, and I was able to tell in it 10 words or less. When you're shrinking your paragraph, you'll need to pay close attention to make your main idea statement 10 words or less."

"Sometimes a paragraph will be very short- usually this happens because of dialogue in the story. When paragraphs are very short, you will read more than 1 paragraph so you'll have enough information to make a main idea statement. Usually you can get enough information from 2 or 3 paragraphs."

"Take a look at the rest of Forgetful Faye. You can see there's some dialog here that makes for short paragraphs. A good guideline is to use the width of the bookmark or two inches. If you're using this method, always make sure you go to the end of the paragraph before you try to shrink it. "

Draw a line where you'd shrink this passage as you say the next sections

"If I were reading this passage, I'd probably read the first paragraph by itself, and then shrink it."

Draw a line to show

"Next I would read the second, third and fourth paragraphs all together, and then shrink those."

Draw a line to show

"Then I would read the remaining paragraphs all together, and then shrink them."

Draw a line to show

"First readers, please read the 2nd section of tiny paragraphs aloud and shrink them to one statement. Second readers, you are the coaches, so help the first readers if they need it. Once you've shrunk the paragraph into a main idea statement of 10 words or less, say it out loud for us to hear.

Move around and listen. Provide corrective feedback and encouragement as necessary. Listen to the first readers statement. Make sure the statement is 10 words or less.

"Nice work. second readers, please read the 3rd section of tiny paragraphs and shrink them to one statement. First readers, you are now the coaches, so help the second readers if they need it. Once you've shrunk the paragraph into a main idea statement of 10 words or less, say it out loud for us to hear.

Move around and listen. Provide corrective feedback and encouragement as necessary. Listen to the second readers statement. Make sure the statement is10 words or less.

"Excellent work everyone. Now, a couple things we didn't go over that are important to know."

"If a paragraph keeps going onto the next page, keep reading and shrink it at the end of the paragraph."

"Also, sometimes the most important who or what has several words. For example 'King Tut' would need two words to describe who he was, but this will only count as 1 word in paragraph shrinking, because we need 'King Tut' to go together to describe him. "

"When you're doing paragraph shrinking, you have the opportunity to earn lots of points for your team. For each paragraph you shrink, you can earn up to 3 points. The first point will be for identifying the most important who or what. The second point will be earned if you name the most important thing about the who or what. The third point can be earned if you make a main idea statement in 10 words or less. In paragraph shrinking, if your partner or I need to help you, you won't earn the point for that part of paragraph shrinking."

Giving Help with Paragraph Shrinking: 5-6 minutes

"Now we're going to learn about helping each other during Paragraph Shrinking. You will continue to use the correction card to help your partner with reading errors, just like in the partner read. However, you are also going to learn how to help your partner with mistakes he or she might make during the paragraph shrinking. "

Show transparency 8.1- point to each section as you read it.

"Mistakes your partner might make during Paragraph Shrinking include: Not naming the most important who or what or most important thing about the who or what, and using more than 10 words for the main idea statement."

"Please pull out your correction card so we can see what the procedure for Paragraph Shrinking will be. "

Wait for students to take the correction card out of the folder. Show transparency 3.3 (Correction Card). Point as you say each piece.

"Take a look at the bottom section which explains how to help during Paragraph Shrinking. If the Reader gives the wrong answer, the Coach is going to use the strategies on this page to help the Reader. This includes: "Check it" "Let me give you a hint", "The answer is_____", and "Shrink it." Now we'll learn how to use each of this."

"When the Coach says "Check it," it gives the reader the chance to improve his or her answer.   If the Reader is still having problems and provides another incorrect answer, the Coach will say "Let me give you a hint" and provide a hint that lets the Reader know what she or he is doing wrong. What's the first thing a Coach says if a Reader is wrong?"

(Students: Check it)

"Good, and if the Reader is still wrong?"

(Students: the Coach gives a hint.)

"Excellent. If the Reader is still unable to provide a correct answer, the Coach will say 'the answer is_____.' Remember, when you're giving help to your partner, you want to read as many paragraphs as you can in 5 minutes, so this is why you only give the reader 1 opportunity to respond correctly to each step. You'll use these same 3 steps for both identifying the most important who or what and for identifying the most important thing about the who or what."

"Sometimes the Reader says the main idea in more than 10 words. If this happens, the Coach reminds him to 'shrink it.' Remember that the main who or what counts only as 1 word."

"Now that we know these strategies, let's practice together. I will be the reader, and you will be my coaches. Please go to page 6 in your activity book, I'll read the paragraph aloud, and you'll follow along. After I'm done, you'll help me make a good main idea sentence."

Show transparency 6.2. Read it aloud slowly and accurately.

"Okay, now that I've finished reading, I need to shrink the paragraph. Remember you'll need your question card to ask me the Paragraph Shrinking questions and you will need your correction card if I need help.

Call on students to provide the Coach's response for each step. Provide assistance as needed.

(Student: Name the most important who or what)

"I think the most important who or what is Carlos"

(Student: Check it)

"I think the most important who or what is Carlos and Eric."

(Student: Let me give you a hint (one example of a good hint would be "you are correct that there are two main who's. Carlos is 1, but you're missing the other.")

"Carlos and the teacher?"

(Student: Carlos and Ann. Tell the most important thing about the who or what)

"Carlos and Anne were worried about being in the play until their friend, Eric, arrived."

(Student: Shrink it)

"Carlos and Ann were worried about performing until Eric arrived."

"Great work everyone. Now you know what to do if your partner makes a mistake during paragraph shrinking.

Prediction Relay: 9-11 minutes

"Now we're going to learn about the last activity, Prediction Relay. In Prediction Relay, you will first make a prediction, or guess, about what will happen next in the story. What is a prediction?"

(Students: A guess about what will happen next in the story)

"Prediction Relay is important for 2 reasons. First, to make accurate predictions, you must think about what you already know about the story. Second, Prediction Relay requires you to think ahead. Thinking ahead helps get you involved in the story, which improves your concentration and memory for important events. Good readers make a lot of predictions as they read. How can prediction relay help you become a better reader?"

(Students: Prediction relay helps us think about what we have already learned in the story, and encourages us to think ahead, which improves our concentration and memory of the story.)

Show Transparency 2.3- Question Card

"Please take a look at the question card from your folders. Find where it says 'prediction relay' on the card."

Monitor students to make sure they're looking at the right card.

"The question card tells us what the Coach will say to the Reader during Prediction Relay. Who can read what the Coach says to the group?"

(Student: 1. What do you predict will happen next? 2. Read half a page. 3. Did your prediction come true?)

"The reader follows these directions when the Coach says them. The big key to remember is that the readers just predict what will happen in the next half page. "

"We want our predictions to be reasonable, meaning that they are likely to happen next. To do this, we use the information we already have read from the story. Our predictions won't always come true, but as long as they are reasonable, that is what matters."

"Let's practice- turn to page 9 in your Activity Packet, but don't read it. I know only the title of this story 'Fritz and the Beautiful Horses', and I'll make my prediction off of that. Who wants to be the coach to asked me the first question?"

Show Transparency 10.2

(Student: What do you predict will happen next?)

"All I know right now is the title, and I can't read ahead. I guess I'll predict that Fritz is a boy who makes horses look pretty by brushing their manes. Do you think that could be a reasonable prediction based on the title of the story?"

(Student: sure)

"Why?"

(Student: because it could happen in the next half page).

"Great, now ask me the second prediction relay question."

(Student: Read half a page)

Read to the half-page line of "Fritz and the Beautiful Horses."

"Okay, now ask me the third Prediction Relay Question."

(Student: Did your prediction come true?)

"So there are only 3 things I can say to answer your question. They are, 'yes,' 'no,' and 'I don't know yet.' So here's my answer: No. My prediction was wrong."

"Even though my prediction was wrong, was it a reasonable prediction?"

(Student: Yes)

"I agree with you, why was it reasonable?"

Listen to what students say.

"So a prediction can be reasonable and wrong all at the same time."

"Who would like to make the next prediction?"

Call on a student who wants to make the next prediction. Accept any reasonable prediction.

"That is a reasonable prediction because you used the information from what we read and because it could happen in the next half page. Can someone please ask me the next question?"

(Student: read half a page.)

Read the second half of the page.

"Now ask me the third question."

(Student: Did your prediction come true?)

"Who can tell us the 3 things I'm allowed to say?"

(Student: Yes, No or I don't know)

"So what do you think? Did the prediction come true? I want you to turn to your partner and answer."

Listen to students respond, guide them to make sure they only say yes, no or I don't know.

"Great work everyone. When you're doing the Prediction Relay, there are three ways you can earn points. You can earn 1 point for making a reasonable prediction, 1 point for reading half the page, and 1 point for checking the prediction. It doesn't matter if you're prediction is right or wrong, only that you made a reasonable one, read and then checked it."

"During the prediction Relay you will take turns making predictions, reading half a page and checking your predictions for 5 minutes. The same person stays a reader until I ask you to switch. Remember, when you're the Coach, you'll still need to use the helping strategies that you learned during Partner Reading."

Practicing Prediction Relay: 12-14 minutes- Complete during training day if time, if not provide extra support on day 1

"Now it's time to practice the prediction relay. When you begin the Prediction Relay, the first reader will begin making a prediction where the second reader stopped during Paragraph Shrinking. I know you haven't done paragraph shrinking in your book yet, you'll get to practice that tomorrow. For today, please get out your books, and begin Prediction Relay where you left off. second readers, you are the Coaches, so start your partner off by asking the first question for the Prediction Relay. You will have 5 minutes to keep making predictions, reading half a page and checking your predictions. I will remind you when to switch. Begin."

Set timer for 5 minutes, move around the room, provide praise and corrective feedback. Refer to the Teacher Command Card and PALS Pairs Checklist for specific behaviors to look for. After 5 minutes, prompt the students to stop.

"Stop. Okay, now it's the second reader's turn. Second reader you will begin where the first reader left off. first readers, you are the Coaches, so start your partner off by asked the first question for the Prediction Relay. Begin."

Set timer for 5 minutes, move around the room, provide praise and corrective feedback. Refer to the Teacher Command Card and PALS Pairs Checklist for specific behaviors to look for. After 5 minutes, prompt the students to stop.

"Stop. Excellent job everyone! Next time we meet, we will practice putting everything together. Please put your materials away."

Appendix D

PALS Coupon

PALS Coupon

Way to go!

_____Student's Name_____

Keep up the GREAT work!

Appendix E

Social Validity Questionnaires

PALS Feedback Questionnaire – Teacher Version

Questions	Rating Least Most
1. I found PALS reasonable to implement.	0----1----2----3----4----5
2. Students seemed to enjoy PALS.	0----1----2----3----4----5
3. Students' reading ability improved from participating in PALS.	0----1----2----3----4----5
4. I would implement PALS for reading again.	0----1----2----3----4----5
5. I would like to implement PALS for another subject.	0----1----2----3----4----5

What did you like most about implementing PALS for reading?

What would you want changed if you were to do something like this again?

Adapted from Fuchs et al., 1999

PALS Feedback Questionnaire – Student Version

Questions	Rating Least Most
1. I have improved my reading skills since the beginning of the year.	0----1----2----3----4----5
2. I like to read.	0----1----2----3----4----5
3. My teachers have helped me become a better reader.	0----1----2----3----4----5
4. Working with a partner has helped me become a better reader.	0----1----2----3----4----5
5. I like working with a partner for reading.	0----1----2----3----4----5
6. I would be interested in working with a partner more in my other classes.	0----1----2----3----4----5

What did you like most about working with a partner?

What would you want changed if you were to do something like this again?

Adapted from Fuchs et al., 1999

Appendix F

Treatment Integrity Checklist for PALS Reading

Teacher:_____ Observer:_____ Number of Dyads:_____

Replication Cycle: _____ Date:_____ Start Time: _____ End Time:_____

Directions: During the observation of the PALS for Reading intervention, place a check in the appropriate column for each step you observed.   Count the number of "+" earned and calculate the treatment integrity by each lesson step and by overall integrity.

Step 1: Overall Teacher Behavior

Target Behaviors	+	-
1. Teacher prompts Partner Reading (specific procedures reviewed as necessary- always on first day of the week).		
2. Teacher prompts students when to switch		
3. Teacher prompts retell (specific procedures reviewed as necessary- always on first day of the week).		
4. Retell is stopped after 2 minutes		
5. Teacher prompts Paragraph Shrinking (specific procedures reviewed as necessary- always on first day of the week).		
6. Teacher prompts students when to switch		
7. Teacher prompts Prediction Relay (specific procedures reviewed as necessary- always on first day of the week).		
8. Teacher prompts students when to switch		
9. Throughout lesson, teacher is actively supervising students, circulating and awarding bonus points.		
Total		

Number of +/9= _____% Teacher Procedures Fidelity

Adapted from Fuchs et al. 2008

Dyad:_____   Start time:_____ End
time:_____ Date:_____

Step 2. Student Behavior: Partner Reading

Directions: Sit near a pair and observe for activity listed, placing a check in the
appropriate column for each behavior you observe in the specific activities checklist.
Count the number of "+" earned and calculate the implementation integrity by each
lesson step and by overall integrity.

Partner Reading

Target Behaviors	+	-
1. The coach is reading along silently with the reader.		
2. The coach is catching reading errors.		
3. The coach is using correction procedures (if necessary). If that doesn't help, the coach provides the answer after 4 seconds.		
4. Students raise a hand if they come across a word they can't read.		
5. Pairs have new reading material to use if they finish their book.		
6. Coach marks 5 points for every page read correctly.		
7. Second reader starts reading where the first reader started.		
Total		

Number of +/7=_____% Partner Reading Procedures Fidelity

Dyad: _____   Start time:_____   End time:_____
Date: _____

Step 2. Student Behavior: Retell

Directions: Sit near a pair and observe for activity listed, placing a check in the
appropriate column for each behavior you observe in the specific activities checklist.
Count the number of "+" earned and calculate the implementation integrity by each
lesson step and by overall integrity.

Retell

Target Behaviors	+	-
1. first reader asks Retell Questions.		
2. second reader retells events in sequence, one event at a time.		
3. second reader does not read word-for-word from text.		
4. second reader looks at the books if s/he can't remember the next event.		
5. first reader helps the partner if s/he is stuck by telling the next thing that happened.		
6. first reader assigns 1 point for each event told without reading directly from the book.		
Total		

Number +/6= _____% Retell Procedures Fidelity

Dyad: _____ Start time:_____ End time:_____
Date: _____

Step 2. Student Behavior: Shrinking

Directions: Sit near a pair and observe for activity listed, placing a check in the
appropriate column for each behavior you observe in the specific activities checklist.
Count the number of "+" earned and calculate the implementation integrity by each
lesson step and by overall integrity.

Paragraph Shrinking

Target Behaviors	+	-
1. The coach is reading along silently with the reader.		
2. The coach is catching reading errors.		
3. The coach is using correction procedures (if necessary). If that doesn't help, the coach provides the answer after 4 seconds.		
4. Students raise a hand if they come across a word they can't read.		
5. Pairs have new reading material to use if they finish their book.		
6. First reader starts where the second reader left off in Partner Reading.		
7. Students provide appropriate responses to the 3 paragraph shrinking prompts (list here?)		
8. Main idea statements:	███	███
- Are not taken word –for- word from the text		
- Are good summary statements		
- Are ten words or less		
9. Coach listens and corrects reader as needed		
Total		

Number +/9=_____% Paragraph Shrinking Procedures Fidelity

Dyad: _____Start time:_____ End time:_____
Date: _____

Step 2. Student Behavior: Prediction

Directions: Sit near a pair and observe for activity listed, placing a check in the appropriate column for each behavior you observe in the specific activities checklist. Count the number of "+" earned and calculate the implementation integrity by each lesson step and by overall integrity.

Prediction Relay

Target Behaviors	+	-
1. The coach is reading along silently with the reader.		
2. The coach is catching reading errors.		
3. The coach is using correction procedures (if necessary). If that doesn't help, the coach provides the answer after 4 seconds.		
4. Students raise a hand if they come across a word they can't read.		
5. Pairs have new reading material to use if they finish their book.		
6. Students start where second reader left off in Paragraph Shrinking		
7. First reader makes a prediction that could actually occur in the next half page.		
8. Readers read the next half page and respond with "yes," "no," or "I don't know yet," when he/she checks prediction.		
9. Coaches award 1 point for making a reasonable prediction, 1 point for reading, and 1 point for checking the prediction (even if it did not come true).		
10. Pairs continue predicting, reading and checking until the time is signaled.		
Total		

Number+/10=_____% Prediction Relay Procedures Fidelity

Adapted from Fuchs et al., 1999

Date:_____

Observation Total

Activity	Number of + observed	Total Possible	%
Overall Teacher Behavior		9	
Partner Reading		7	
Retell		6	
Paragraph Shrinking		9	
Prediction Relay		10	
Overall PALS for Reading Integrity		41	

Adapted from Fuchs et al. 1999

Biography of the Author

Meaghan Opuda Swan was born in Wayne, Maine and graduated from Maranacook

Community School in Readfield, Maine. She graduated with a BS in Special Education

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grades K-12 in residential and day treatment settings in both public and private schools in

the central Maine area. In 2007, Ms. Swan enrolled in the doctoral program in School

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Psychology in 2010 from the University of Southern Maine, Ms. Swan worked as a

special education consultant. Ms. Swan completed her pre-doctoral internship at

Margaret Murphy Center for Children, The Alliance School, and Mt. Blue Regional

School District. Her areas of interest include Multi-Tiered Systems of Supports (MTSS),

including positive behavioral interventions and supports (PBIS) and evidence-based

instruction, as well as verbal behavior, and supporting students with significant emotional

and mental health needs. Ms. Swan is currently a candidate for the Psy.D. in School

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