

The Effects of “Reading Buddies” on Reading Fluency, Comprehension and Reading Attitudes
in Special Education Students

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ABSTRACT

This study evaluated the effects of a Buddy Reading program on the reading fluency and comprehension of Special Education students, as well as its effect on self-ratings of their reading skills and attitudes. Special Education students were placed in two groups. Each of the students in the first group was assigned a Regular Education student partner or “Reading Buddy” with whom to read aloud on a daily basis. Students in the second group were given the same text to read each day, but were not assigned Reading Buddies. Prior to and after the Reading Buddy intervention, which lasted 15 days, data were collected on all participating students’ reading fluency and comprehension using selected portions of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). A survey also was administered at both times to assess students’ feelings about reading and their reading skills.

Post intervention results indicated all groups experienced gains in reading fluency. Gains also were noted in retell scores for the Regular Education students. Minor gains were seen in retell for students without buddies, while there was a decrease in retell mean scores for Special Education students with buddies. Students’ mean self-ratings for attitude toward reading and reading ability also increased for the students in the Reading Buddy groups, but they did not increase for the Special Education student group without buddies.

Overall, results indicated that the use of cooperative reading opportunities can be beneficial to both Regular and Special Education students. Use of the Buddy Reading intervention yielded overall positive results in reading fluency, comprehension, self-rated reading attitudes, and reading ability. However, these benefits must be interpreted with caution, as the differences in gains in fluency and retell scores were not statistically significant across any of the three

conditions. These results suggest that the students who did not have a Reading Buddy made comparable gains in reading skills.

CHAPTER I

INTRODUCTION

Helping students improve reading fluency and comprehension is a challenge for educators across the nation. The challenge becomes even greater when students also are challenged with a learning disability which affects their aptitude to read. Increased reading fluency contributes to improved reading comprehension skills. This study was conducted to establish the efficacy of peer reading and its impact on increasing reading fluency and comprehension. Previous studies have recognized the positive benefits of “Peer Assisted Learning Strategies” (PALS) for non-disabled students. In addition, studies focused on the benefits of repeated oral readings have noted an increase in reading fluency for non-disabled students (Fuchs, Fuchs & Fuchs, 2005).

This researcher became interested in studying ways to increase reading fluency and comprehension among special education students in her role as an elementary school Special Education Resource Teacher. She learned that approximately eight percent of the student population at the school in which this study was conducted has been diagnosed with a disability that impacts reading fluency and comprehension. The majority of those diagnosed with a Learning Disability (LD) struggle in the area of reading. While disabilities in reading generally are diagnosed in early schooling as difficulty with letter sound relationships, the progression in later schooling usually affects reading fluency and comprehension as well. Much research has been conducted related to ways to assist special education students to improve their reading skills. For example, Layton and Koenig (1998) examined the effect of using repeated readings of simple text and found that it resulted in positive gains on reading fluency. This researcher’s study serves to expand that body of literature by examining the impact of “Buddy Reading” on

reading fluency, oral retell fluency, and attitudes about reading for students with reading disabilities.

Statement of Problem

The problem investigated in this paper was whether a reading buddy activity affects reading fluency and comprehension and attitudes about reading for special education students.

Hypothesis

The following null hypotheses will be tested statistically:

ho₁: Mean Fluency Gains for Special Education Students in Buddy Reading groups = Mean Fluency gains for a comparison group of Special Education students (not paired with a Reading Buddy) = Mean Fluency gains for non-Special Education Reading Buddies

ho₂: Mean Retell Fluency gains for Special Education Students in Buddy Reading groups = Mean Comprehension gains for a comparison group of Special Education students (not paired with a Reading Buddy) = Mean Comprehension gains for non-Special Education Reading Buddies.

ho₃: Mean changes in Attitudes about reading for Special Education Students in Buddy Reading groups = Mean changes in Attitudes about reading for a comparison group of Special Education students (not paired with a Reading Buddy) = Mean changes in Attitudes about reading for non-Special Education Reading Buddies.

ho₄: Mean changes in estimated reading abilities for Special Education Students in Buddy Reading groups = Mean changes in estimated reading abilities for a comparison group of Special Education students (not paired with a Reading Buddy) = changes in estimated reading abilities for non-Special Education Reading Buddies.

Operational Definitions

Operational definitions for terms used in this action research study are presented below.

Supplemental reading time – In addition to all students receiving small group reading instruction in the general education classroom, there is daily supplemental reading time in the form of “Read to Self” or Drop Everything And Read (D.E.A.R.) time, during which a student participates in sustained silent reading.

Independent Variable

Buddy Reading Intervention is the independent variable in this study. It refers to daily oral reading sessions during which a Special Education student, diagnosed with a reading disability, is paired with a non Special Education student.

Dependent Variables

Reading fluency refers to reading fluency rate. This rate is determined by words read correctly per minute including self corrections.

Oral Retell fluency for purposes of this study refers to an oral retell fluency score. This score is determined by the number of words a student uses to retell what he or she has read. Oral retell fluency is an indicator of general reading comprehension.

Reading attitudes for purposes of this study are attitudes reflected in participants’ responses to a pre-and post-survey assessing feelings about reading and their evaluation of their own reading skills.

Learning Disabled (LD) students for purposes of this study refers to all participants diagnosed with a learning disability which affects their reading fluency and comprehension.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this literature review is to examine the current literature pertaining to increasing the reading fluency and comprehension in special education students with reading difficulties through implementation of peer assisted learning strategies (PALS). This review is comprised of three sections. Section one will define standards and clinical progress of reading fluency and comprehension. In addition, the connection between good reading fluency and increased reading comprehension will be established. The second section of this review will examine current reading interventions designed to improve reading fluency and/or reading comprehension in elementary school regular and special education populations. The third and final section of this review will examine peer assisted learning strategies which also may improve reading fluency and comprehension. The implementation and effectiveness of such strategies will be discussed.

Defining Standards and Progress in Reading

Phonemic awareness, phonics, reading fluency, vocabulary, and comprehension are the five areas emphasized in reading instruction. Though school districts adopt different standards related to what constitutes a proficient reader, there is increasing agreement that students need to acquire principles related to how sounds map to letters and words, read fluently, and understand the text they read (Chard, Vaughn, Byrant, Coleman, Tyler, Linan-Thompson & Kouzekanani, 2000). Furthermore, the focus should be on enabling students to increase their reading speed after they have mastered the decoding stages of early reading. With increased reading speed, even with a few miscues, the meaning of the text usually is accessible to most young readers (Layton & Koenig, 1998).

The Maryland State Department of Education Curriculum Glossary defines fluency as “the ability to easily speak, read, or write a language; automatic word recognition, rapid decoding, and checking for meaning” (MSDE, 2007). There is an important connection between reading fluency and the ability to comprehend text. Fluency in decoding allows the reader to devote cognitive resources to the use of comprehension skills and strategies (Chard, et al.2000). Non-fluent readers tend to be so focused on decoding a sound or word that the meaning of the word is lost. The inability to read a word and understand it leads to the inability to comprehend what is read as a whole. Letters morph into sounds. Sounds blend into words. Words transform into sentences and sentences convey meaning. If students cannot decode at a fluent rate, it becomes very difficult for them to comprehend the meaning of words and sentences.

Current Reading Interventions

School systems implement a variety of prepackaged intervention programs as well as informal or school/ district developed techniques to, address the needs of struggling readers. These evidence-based practices are derived from research to positively impact student achievement, particularly for students with special needs (Torres & Cook, 2012).

Informal programs

Sustained Silent Reading and Drop Everything and Read. Many schools encourage daily sustained silent reading (SSR) or Drop Everything and Read time (DEAR) to build students’ silent reading stamina and fluency. Use of approaches such as SSR and DEAR is increasing at both elementary and secondary levels. Research such as that reported by Pilgren and Krashen (1993) suggests that not only does implementing some sort of dedicated silent reading time

improve comprehension but also leads to an overall increase in reading enjoyment and voluntary reading.

Repeated Readings. Another technique that has increased students' reading fluency is repeated readings (Layton & Koenig, 1998). Repeated readings typically are done with short texts that are relatively simple. Poems and text with a pattern are appropriate choices for repeated reading (Pitcher, 2009). Through repeated readings, students gain familiarity with text, thereby building fluency. Teachers should be aware that use of repeated reading tends to be most effective in increasing reading fluency when implemented with one-to-one adult supervision (Chard, Ketterlin-Geller, Baker, Doabler, & Apichatabutra, 2009). However, use of repeated reading has been beneficial without such individualized adult supervision.

Reader's Response Journals. Reader's response journals are a popular, easy to implement reading comprehension practice that can be used to improve students' understanding of what they read. Using Reader's Response journals generally involves having students respond to one or two questions based on their reading. These questions tend to be higher level thinking questions such as, "How do you think the character felt about ...?" (Chard, et al., 2000).

Explicit Instruction. Explicit instruction of reading comprehension strategies has been used successfully as a reading intervention (Van Keer & Verhaeghe, 2005). For example, *SRA Corrective Reading* is an explicit instruction program developed particularly for older students who display significant reading difficulties. The program includes scripted lessons focusing on two strands of decoding and comprehension. Daily small group instruction usually takes 30-40 minutes (Heinemann, 2012).

Previewing text, although considered a “best practice” in reading instruction, also is an instructional intervention that involves explicit instruction. The purpose for previewing a text including the illustrations, photographs, and other text features is to activate a student’s prior knowledge and generate connections to text as well as related vocabulary (Mastropieri, Leinart & Scruggs, 1999). Use of this strategy enables readers to get prepared to negotiate the text with a purpose since they know what will be discussed when they have completed their reading.

Packaged Intervention Programs

Leveled Literacy Intervention. A popular packaged intervention program that targets reading comprehension is *Fountas and Pinnell Leveled Literacy Intervention (LLI)* developed by Fountas and Pinnell and published by Heinemann. The LLI is a small-group, supplementary intervention program designed to help teachers provide powerful, daily, small-group instruction for the lowest achieving children in the early grades (Heinemann, 2012).

Computer Assisted Programs. There are also numerous computer assisted reading programs that can be used as reading interventions to increase reading fluency and comprehension (Mastropieri, et al., 1999). For example, The Hint and Hunt program is a computer based program with game like activities which target decoding skills with an overall goal of increasing reading fluency

Using Reading Intervention Programs with Special Populations

Most current reading interventions were created to address skills gaps for struggling readers. Struggling students typically participate in several reading interventions prior to being recommended for special education. This multistep approach is called Response to Intervention

(RtI). When a school implements RTI, after a student fails to respond to an intervention, or to demonstrate growth when participating in the intervention, a school team generally refers the student for further assessment. In this sense, most reading interventions are not effective with special needs populations when used as a stand-alone approach (Gersten & Dimino, 2006).

Use of Peer Assisted Learning Strategies

Though it takes many forms such as working with a partner, participating in small groups, using Think-Pair-Share, or having Shoulder Partners, peer collaboration in the classroom has become a frequently used instructional approach in education today. Use of peer collaboration allows students to work through problems in text together. It provides an opportunity for students to be an expert as well as an opportunity for students to share their thought processes with one another (Fuchs, Fuchs & Fuchs, 2005). Peer interaction can be used as a component of an approach to increasing reading fluency and reading comprehension. Current research such as that reported by Calhoun (2005) suggests that there are many ways to utilize peer collaboration in the classroom to target reading. For example, Reader's Theater enables small groups of readers to take parts in simple plays. Plays are typically practiced daily for a minimum of a week. Students can coach one another as they work together to "produce" the short play (Corcoran & Davis, 2005). Research reported by Olson (2011) also suggests that use of peer interaction or peer tutoring increases academic skill mastery in lower performing students as they "teach" their peers, particularly if they are able to assist with before, during or after reading activities. Enabling lower performing students to be the teacher usually requires some pre-teaching and rehearsal prior to having them take the role of teacher .

A three-part program called Peer Assisted Learning Strategies (PALS), developed by Fuchs and Fuchs, has as its goal to give peer support to struggling readers through modeling and

informal coaching. The program, as it was intended to be implemented, is highly structured. (Fuchs, et al., 2005) Each session begins with Partner Reading, which is designed to improve students' reading accuracy and rate. After both students have read, one partner then retells the sequence of events just read in the text in a two-minute time period. After Partner Reading, students complete Paragraph Shrinking, which is designed to use partner discussion to develop comprehension through summarization and main idea identification. The final activity is Prediction Relay, which extends Paragraph Shrinking to larger units of text (Calhoun, 2005). There are multiple instructional implications related to the use of a PALS program. In the area of reading fluency, because there is a lack of focus on word reading skills at the intermediate grade level, PALS may not be the most appropriate program choice. However, there is a word level reading component-in the primary grade PALS structure. In addition, there is indication of marked increase in reading comprehension with the extended use of PALS (Fuchs, et al., 2005). Research in use of peer tutoring such as that reported by Calhoun indicates growth for lower performing students working in groups with higher ability students. Additionally, this research indicates that PALS and other peer tutoring programs are among the most impactful current reading interventions for students with learning differences (Olson, 2011).

Conclusion

The literature provides ample information pertaining to increasing reading fluency and comprehension for special needs students. Research such as that reported by Pitcher (2009), (Layton & Koenig, 1998) indicates that evidence-based current reading interventions, when used in combination with peer assisted learning strategies, may yield gains in the area of reading fluency and comprehension for special education students.

CHAPTER III

METHODS

The purpose of this study is to determine whether a reading buddy activity affects reading fluency and comprehension and attitudes about reading for Special Education students. The study examines the impact of “Buddy Reading” on reading fluency, retell fluency, and attitudes about reading for students with reading disabilities.

Design

This study follows a quasi-experimental pretest posttest design. The independent variable for this study was student participation in the reading intervention known as “Reading Buddies.”

This variable was dependent on individual student ability and was evaluated pre-and post-treatment. The study was designed to have three phases. The first phase was pre-treatment data collection. Benchmark assessments for Oral Reading Fluency (ORF) and Retell Fluency (RF) were administered to establish baseline data. In addition, students completed a pre-treatment survey about reading attitudes and their perception of their reading skills.

The second phase of the study was the treatment phase which consisted of 15 daily treatments of 20 minutes in duration. The final phase of the design was the post-treatment data collection. Students were re-assessed with the ORF and RF assessments. They also completed the reading attitude survey again to see if their feelings about reading had changed.

Participants

Participants selected for this study were elementary school students in grades one through five. Eight Special Education students and four non-Special Education students were chosen. The Special Education students all were diagnosed with a disability which impacts reading

fluency and comprehension. All Special Education students who participated in this study were reading at least one grade level below average. Non-Special Education students were selected based on recommendations from their classroom teacher. They all were reading on grade level or higher.

Participants were divided into two groups. The first group consisted of five randomly selected Special Education students who were paired with a Non-Special Education student as “Reading Buddies”. The second group consisted of five Special Education students who were not paired with a “Reading Buddy”. Data were collected for all participants.

Instrument

Dynamic Indicators of Basic Early literacy Skills (DIBELS) was the assessment tool chosen to evaluate student reading fluency and retell fluency before and after the intervention. DIBELS measures numerous indicators of developing reading skills including letter naming fluency, phoneme segmentation fluency, nonsense word fluency, oral reading fluency, retell fluency and word use fluency for grades one through three. The DIBELS assessment for grades four and five only measures oral reading fluency and retell fluency. For purposes of this study, only the oral reading fluency and retell fluency components of DIBELS were used to evaluate all participants. Students were evaluated with the appropriate DIBELS subtests for their current grade level.

For test- retest situations, which are particularly relevant to a brief study such as this, the average reliability coefficient for the Oral Reading Fluency is .92- .97. Generally, reliability coefficients of .85 or greater are considered reliable. Statistical data for Retell Fluency is not available; however, the publisher suggests that the goal of RF should be 25% of the ORF.

(DIBELS, 2012)

Procedure

Prior to the beginning of the study, students were selected to participate as described above. Parents of Non-Special Education students were contacted to obtain permission for their child to participate. Scheduling of the treatment was arranged with classroom teachers. The readers met their “Reading Buddies” and the intervention was explained to the participants. All participating students completed a pre-intervention Reading Attitudes Survey at the initial meeting. Questions on this survey asked students to self evaluate their feelings as a reader, how they feel about reading independently, and how they feel about reading with a partner among other reading-related topics. Prior to the beginning of the intervention, the assigned readings for “Reading Buddies” were given to general education teachers to give to the four participants who were not assigned to a “Reading Buddy.” These readings were given to those students to read independently during their supplemental reading times.

“Reading Buddies” reported to the treatment area at their assigned times. Buddy groups met only one partner group at a time to allow the researcher to monitor reading and participation. Daily partner meetings took place for 20 minutes for 15 days. Reading selections, assigned on a weekly basis, were short passages which ranged from 50-120 words and generally were rhyming poetry. At the beginning of each treatment the non-disabled “Reading Buddy” first would read the passage aloud while the LD student followed along. The researcher prompted for appropriate reading rate for good modeling. In addition, the researcher cued the LD student to track his or her partner’s reading by following along with his or her finger. Once the Non-Special Education student finished reading, the LD student then read the same passage aloud. The pair then read the passage together chorally followed by a repeated individual reading by the LD student. This structure allowed for modeling and rehearsal opportunities before a final individual

reading by the LD student. Once the reading was complete, the Non- Special Education student asked the LD student one to three prewritten questions provided by the researcher. The researcher monitored these discussions so as to correct any misunderstanding of the text and offer support with comprehension strategies. At the conclusion of the 15 day intervention, all participating students were administered a post assessment for ORF and RT. The students also completed the Attitudes about Reading survey again to see if the intervention had affected how they felt about reading and their own reading skills.

CHAPTER IV

RESULTS

The purpose of this study was to investigate whether a reading buddy activity affects reading fluency and comprehension and attitudes about reading for special education students. To assess and compare the scores and the impact of the Reading Buddy intervention on the participating students, data were disaggregated into three groups of participants: special education students with a buddy, special education students without a buddy and regular education student buddies. Descriptive statistics reflecting their DIBELs Fluency and Retell pretest, posttest, and gain scores follow in Table 1. It is notable that all of the mean gain scores were positive except for the Student with Buddy Retell gain score, which was -2.25.

Table 1
Descriptive Statistics for Reading and Gain Score

Group (n =4 for all)		Mean	s.d.	Range	Minimum	Maximum
Student with Buddy						
	Pretest Fluency	15.750	2.986	7	13	20
	Posttest Fluency	20.500	4.726	10	17	27
	Fluency Gain	4.750	2.217			
	Pretest Retell	10.000	8.042	17	5	22
	Posttest Retell	7.750	2.217	5	6	11
	Retell Gain	-2.250	5.965			
Student Without Buddy						
	Pretest Fluency	21.250	18.626	41	5	46
	Posttest Fluency	25.500	26.615	58	7	65
	Fluency Gain	4.250	12.420			
	Pretest Retell	9.750	9.743	23	0	23
	Posttest Retell	10.500	7.724	18	3	21
	Retell Gain	.750	9.535			
Regular Ed Student						

	Pretest Fluency	90.000	40.0176	88	61	149
	Posttest Fluency	105.000	38.816	92	67	159
	Fluency Gain	15.000	15.535			
	Pretest Retell	36.750	9.979	23	26	49
	Posttest Retell	43.750	10.340	25	31	56
	Retell Gain	7.0000	19.698			

The significance of each group's mean gains in scores on the Fluency and Retell Fluency subtests was tested using one sample T-tests to determine if any of them differed significantly from zero. The T-test results for the groups on both subtests are presented in Table 2. The results indicated that the special education students who had reading buddies were the only group whose gain scores were statistically significantly ($p \leq .05$), even though the regular education students' mean gains were larger on both subtests. Their mean gain score was significant on the Fluency Subtest, on which the mean gain was 4.75 points, $t = 4.284$, $p \leq .05$.

Table 2
One-Sample T-test Results for Fluency and Retell Fluency Gain Scores

Group	Gain	Test Value = 0			
		t	Df	Sig. (2-tailed)	Mean Difference
Student with Buddy	FLUENCY	4.284	3	.023	4.750
	RETELL	-.754	3	.505	-2.250
Student Without Buddy	FLUENCY	.684	3	.543	4.250
	RETELL	.157	3	.885	.750
Regular Ed Student	FLUENCY	1.931	3	.149	15.000
	RETELL	.711	3	.529	7.000

The mean gains also were compared across the three groups for each subtest via two one-way Analyses of Variance. Descriptive statistics and the ANOVA results, which indicated there

were no significant differences among any of the three groups' mean gains on either subtest, follow in Tables 3 and 4. As no significant differences were found, hypotheses one and two, which follow, were retained.

ho₁: Mean Fluency Gains for Special Education Students in Buddy Reading groups = Mean Fluency gains for a comparison group of Special Education students (not paired with a Reading Buddy) = Mean Fluency gains for non Special Education Reading Buddies

ho₂: Mean Retell Fluency Gains for Special Education Students in Buddy Reading groups = Mean Retell Fluency gains for a comparison group of Special Education students (not paired with a Reading Buddy) = Mean Retell Fluency gains for non Special Education Reading Buddies

Table 3
Descriptive Statistics for Gain Scores for Groups and Total Sample

		N	Mean	Std. Deviation	Range	Std. Error
FLUENCY GAIN						
Group	Students with buddy	4	4.750	2.217	2-7	1.109
	Students without buddy	4	4.250	12.420	-11-19	6.210
	Regular ed Student	4	15.000	15.535	-4-32	7.767
	Total	12	8.00	11.662	-11-32	3.367
RETELL GAIN						
Group	Students with buddy	4	-2.250	5.965	-11-2	2.983
	Students without Buddy	4	.750	9.535	-12-11	4.768
	Regular ed Student	4	7.000	19.698	-18-30	9.849
	Total	12	1.833	12.511	-18-30	3.612

Table 4
ANOVA results: Gain Scores for Groups on Fluency and Retell Subtests

GAINS		Sum of Squares	df	Mean Square	F	Sig.
FLUENCY	Between Groups	294.500	2	147.250	1.103	.373
	Within Groups	1201.500	9	133.500		
	Total	1496.000	11			
RETELL	Between Groups	178.167	2	89.083	.519	.612
	Within Groups	1543.500	9	171.500		

	Total	1721.667	11			
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Participants' responses to survey items about their reading attitudes and ability also were compared for to learn if any of the three groups' perceptions differed or changed significantly over the course of the study. Scores were compiled by adding together ratings for items reflecting attitudes and ability, each of which ranged from one to five, thus yielding attitude and ability rating scores which each had a possible range from five to 25. As above, descriptive statistics for the three groups were computed, one sample T-tests were run to compare their changes in perceptions of attitude and ability, and ANOVAs were run to compare the groups' gains in composite ratings to each other. Descriptive statistics for the survey items for each subgroup follow in Table 5.

Table 5

Descriptive Statistics for Survey Items Reflecting Respondents’ Ratings of Their Reading Attitude (items 1-5) and Ability (items 6-10)

Reading attitude	Item 1 I feel like I am a good reader		Item 2 I enjoy reading by myself.		Item 3 I enjoy reading to someone else.		Item 4 I enjoy reading with someone (we take turns reading).		Item 5 In my free time I like to read.	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Student with Buddy										
pre	3.750	.957	1.750	.957	3.750	1.500	3.500	1.291	1.750	.957
post	4.000	.817	2.500	.577	3.750	1.500	3.500	1.291	2.250	.500
Student without Buddy										
pre	2.000	2.000	3.500	1.915	3.000	2.309	3.000	1.414	3.000	2.310
post	2.500	1.732	3.500	1.915	2.750	2.062	3.000	1.414	2.750	2.060
Regular ed student										
pre	3.750	.500	3.000	1.633	3.500	1.915	3.000	1.826	2.750	1.258
post	4.250	.957	3.500	1.732	3.500	1.915	3.250	1.708	3.000	.817

Reading ability	Item 6 I am a fluent reader (I read like I speak- not like a robot).		Item 7 When I read to someone I can easily understand what I read.		Item 8 When I read with someone I can easily understand what I read.		Item 9 When I read to myself I can easily understand what I read.		Item 10 Reading is easy for me.	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Student with Buddy										
pre	2.000	.817	4.500	1.000	3.250	1.708	3.500	1.915	3.000	.816
post	2.250	.500	4.500	1.000	3.750	1.500	3.500	1.915	3.500	.577
Student without Buddy										
pre	3.750	1.258	2.750	2.061	3.500	1.000	4.750	.500	3.500	1.915
post	3.500	.577	3.000	1.826	3.250	.957	4.250	.957	3.000	1.414

Regular ed student														
pre	4.500	.577		3.750	1.500		3.000	.817		4.000	.817		4.500	1.000
post	4.750	.500		4.000	1.155		3.500	.577		4.250	.957		4.750	.5000

Descriptive statistics for the gain for the scores reflecting students’ attitudes towards reading and reading ability follow in Table 6 for each subgroup. These were computed by subtracting the pre-intervention ratings totals from the post intervention rating totals. Interestingly, the mean self ratings of attitude and ability increased on both scales for both the special education students with buddies and the regular education reading buddies; i.e., their gains were positive. The results for the special education students without buddies indicated no overall change in their attitude about reading and a slight decline in their self-ratings of their reading ability.

Table 6
Descriptive Statistics for Gain Scores Used in One Sample T-tests of Attitude (survey items 1-5) and Ability (survey items 6-10) Ratings

Group	GAIN	N	Mean	Std. Deviation	Std. Error Mean
Student with buddy	Attitude	4	1.50	1.000	.500
	Ability	4	1.25	.500	.250
Student without buddy	Attitude	4	.00	.817	.408
	Ability	4	-1.25	1.893	.946
Regular education student	Attitude	4	1.50	.577	.289
	Ability	4	1.50	1.291	.646

The attitude and ability rating gain scores for each of the three groups were computed to determine if they were significant using one sample T-tests, as was done above with the two DIBELS test gain scores. The T-test results are presented below in Table 7. Results indicated

that the Students with Buddies' estimates of their reading ability gains ($t=5$, $p < .015$) and the Regular Education Students' attitude towards reading gains were significant ($t=5.196$, $p \leq .05$)

Table 7

One Sample T-test Results for Group Gains in Reading Attitude and Ability Self-Ratings

Group	Gains	Test Value = 0			
		T	df	Sig. (2-tailed)	Mean Difference
Student with buddy	Attitude	3.000	3	.058	1.500
	Ability	5.000	3	.015	1.250
Student without buddy	Attitude	.000	3	1.000	.000
	Ability	-1.321	3	.278	-1.250
Regular education student	Attitude	5.196	3	.014	1.500
	Ability	2.324	3	.103	1.500

Finally, the gains in self-ratings of attitude and ability were compared across the three groups to determine if the changes were similar across the groups. Results of the two one-way ANOVAs conducted follow in Tables 8 through 10. Descriptive statistics regarding the gain scores are presented in Table 8.

Table 8**Descriptive Statistics for ANOVA Comparing Gains in Self-Ratings of Attitude and Ability**

Gain score		N	Mean	s.d.	Std. Error
ATTITUDE GAIN					
	Student with Buddy	4	1.50	1.000	.500
	Student without Buddy	4	.00	.817	.408
	Regular Ed Student	4	1.50	.577	.289
	Total	12	1.00	1.044	.301
ABILITY GAIN					
	Student with Buddy	4	1.25	.500	.250
	Student without Buddy	4	-1.25	1.893	.946
	Regular Ed Student	4	1.50	1.291	.646
	Total	12	.50	1.784	.515

ANOVA results follow in Table 9. They suggested that there were significant differences among groups' mean self-ratings of attitudes towards reading ($F = 4.5, p \leq .05$) and ability to read ($F = 5.045, p \leq .05$).

Table 9**ANOVA Results Comparing Gains in Attitude and Ability Self-Ratings across Groups**

		Sum of Squares	Df	Mean Square	F	Sig.
Attitude GAIN	Between Groups	6.0	2	3.000	4.500	.044
	Within Groups	6.0	9	.667		
	Total	12.0	11			
Ability GAIN	Between Groups	18.5	2	9.250	5.045	.034
	Within Groups	16.5	9	1.833		
	Total	35.0	11			

Table 10 presents the results of multiple comparisons which tested to see which specific means differed. While the ANOVA indicated there were significant differences among the means, the results in Table 10 indicate that when the three groups' mean attitude and ability gains were compared individually against one other, none of the differences among them attained statistical significance at the $p \leq .05$ level.

Table 10

Multiple Comparison of Group Self-Ratings of Attitude Towards Reading and Reading Ability

GAIN	GROUP (I)	Group (J)	Mean Difference (I-J)	Std. Error	Sig.
<i>Attitude</i>	Students with buddies	Students without Buddies	1.500	.577	.081
		Regular Ed Students	.000	.577	1.000
	Students without Buddies	Regular Ed Students	-1.500	.577	.081
<i>Ability</i>	Students with buddies	Students without Buddies	2.500	.957	.079
		Regular Ed Students	-.250	.957	.967
	Students without Buddies	Regular Ed Students	-2.750	.957	.054

As the multiple comparisons indicated, none of the mean differences in ratings of either attitude or ability were statistically significant across groups, the following hypotheses were retained:

ho3: Mean changes in Attitudes about reading for Special Education Students in Buddy Reading groups = Mean changes in Attitudes about reading for a comparison group of Special Education students (not paired with a Reading Buddy) = Mean changes in Attitudes about reading for Regular Education Reading Buddies.

ho4: Mean changes in estimated reading abilities for Special Education Students in Buddy Reading groups = Mean changes in estimated reading abilities for a comparison group of Special Education students (not paired with a Reading Buddy) = Mean changes in estimated reading abilities for Regular Education Reading Buddies

CHAPTER V

DISCUSSION

The purpose of this study was to investigate whether a reading buddy activity affects reading fluency and comprehension and attitudes about reading for Special Education students. Results of analyses of variance indicated there were no statistically significant differences among any of the three groups' mean gains in fluency scores, retell scores, ratings of attitude towards reading or ratings of reading ability, so all four main hypotheses, which are presented below and in Chapter I, were retained.

ho₁: Mean Fluency Gains for Special Education Students in Buddy Reading groups = Mean Fluency gains for a comparison group of Special Education students (not paired with a Reading Buddy) = Mean Fluency gains for non Special Education Reading Buddies

ho₂: Mean Retell Fluency Gains for Special Education Students in Buddy Reading groups = Mean Retell Fluency gains for a comparison group of Special Education students (not paired with a Reading Buddy) = Mean Retell Fluency gains for non Special Education Reading Buddies

ho₃: Mean changes in Attitudes about reading for Special Education Students in Buddy Reading groups = Mean changes in Attitudes about reading for a comparison group of Special

Education students (not paired with a Reading Buddy) = Mean changes in Attitudes about reading for non-Special Education Reading Buddies.

ho4: Mean changes in estimated reading abilities for Special Education Students in Buddy Reading groups = Mean changes in estimated reading abilities for a comparison group of Special Education students (not paired with a Reading Buddy) = changes in estimated reading abilities for non-Special Education Reading Buddies.

IMPLICATIONS OF RESULTS

Teachers may consider implementing Buddy Reading interventions as means of improving reading fluency as well students' attitudes toward reading and their reading abilities. The results of this study suggest that students provided with dedicated time to read aloud to one another had realized growth in reading fluency and comprehension.

In addition, there were gains in self-ratings of reading abilities and attitudes for the special education students with buddies and the regular education buddies, whereas the self-ratings of attitude toward reading of special education students without buddies did not change and their self-reports of their estimated reading ability decreased slightly over the course of the study. T-test results indicated that gains in the students with buddies' estimated reading ability and the regular education student buddies' attitudes towards reading were statistically significant.

THEORETICAL CONSEQUENCES

Although this study was relatively short in duration, initial findings indicate positive gains in reading skills scores for each group, with the exception of the Retell scores for the

special education students with buddies, which decreased slightly. The Fluency gain scores of the special education students with buddies increased significantly. Mean gains in self-ratings of reading ability and attitude generally supported the conclusion that the intervention would improve reading related skills and attitudes of the students in buddy pairs. In contrast, special education students without buddies' mean self-ratings of their reading abilities decreased and their mean self-ratings of their attitudes did not change at all.

Had the study been extended, the gains in scores for the treatment group may have been greater and the impact of the intervention on skills and attitudes clearer. Results of this study strongly suggest that reading fluency and comprehension are enhanced when students are given daily opportunities to read aloud and in pairs. The results suggest that the benefits of hearing a fluent model and having the opportunity to rehearse and practice daily likely will lead to improved reading fluency. Improved attitude towards reading and confidence in reading ability also were noted for students in the buddy condition, suggesting the partner relationship had benefits beyond just skill maintenance or improvement.

THREATS TO VALIDITY

Assigning students additional supplemental reading or other interventions may have threatened the validity of these results. During treatment, participating students continued to participate in previously established reading routines and interventions. Therefore, it is difficult to determine if the gains observed in the study can be contributed solely to Buddy Reading or to other supplemental reading and/or interventions or a combination of these practices. Daily, in-class supplemental reading, such as "Read to Self" or DEAR time, provided opportunities for students to practice their reading skills in addition to the Reading Buddies treatment. Also, there was no adult supervision of the independent reading done by

the Special Education students who had no Reading Buddy; therefore, the fidelity of the independent reading intervention and the results of that student group should be considered with caution.

CONNECTIONS TO PREVIOUS STUDIES/ EXSISTING LITERATURE

Current research in this area is prevalent since increasing student reading fluency and comprehension is a universal concern. Existing literature supports this study's conclusion that there are benefits of partnering struggling students with peers who are on grade level. The Buddy Readers intervention is similar to Peer Assisted Learning Strategies which is a proven strategy in that both interventions use peer mentors to model fluent reading to peers with less developed skills (Olson, 2011).

The Buddy Readers intervention also utilized the evidence-based practice of repeated reading. Current studies indicate that repeated reading of short of text familiarizes the reader with high frequency words, thus increasing the reader's fluency (Layton & Koenig, 1998). Furthermore, research such as that reported by Pitcher (2009) suggests that use of easy to read, rhythmic texts such as poetry is a more effective type of text to use for repeated readings. Brief poems featuring high frequency words were selected for the Buddy Reading intervention.

IMPLICATIONS FOR FUTURE RESEARCH

This intervention could be replicated easily in the general education classroom or in a small group Special Education setting. The researcher suggests extending the duration of the intervention to realize more substantial gains or highlight differences in outcomes between the subgroups. If a longer intervention is implemented, it may allow for interim assessments to document incremental growth. In addition, material that is no more difficult than instructional

level text should be used to eliminate the challenges of decoding difficult unknown words. The researcher recommends use of poems or other brief, easy to read selections. Adult supervision of Buddy Readers is encouraged to maintain the fidelity of the reading and questioning process.

CONCLUSION

Results generally support the proposition that the use of cooperative reading opportunities can be beneficial to both Regular and Special Education students. Use of the Buddy Reading intervention yielded overall positive results in reading fluency, comprehension, self rated reading attitudes, and reading ability, although the differences in gains in fluency and retell scores were not significant across any of the three conditions, which means the students who did not have a buddy made comparable gains.

The majority of the students who participated in the Reading Buddy intervention expressed positive feedback to the researcher. For example, when the intervention began it included a sample of five students from each group. However, six days into the intervention a Special Education student with an assigned reading buddy transferred from the school. When the regular education Reading Buddy was told that she was no longer obligated to participate during the scheduled time, she was disappointed. She continued with the intervention by reading to the researcher and completed the post-intervention assessment and survey. This student's results were not reported as they did not fit the original conditions of the intervention design.

While this intervention seems to have been beneficial overall, it would require some additional resources in a general education setting. Adult supervision of Reading Buddies is required to ensure that the reading is being done correctly and comprehension is being monitored. This may be a challenge in a general education classroom. Teachers may

consider using volunteers or instructional assistants to help implement this intervention.

Given the improvements in confidence, positive reaction to the intervention and the DIBELS results suggesting the Special Education and Regular Education students receiving the Buddy Reading intervention did not fare worse for it, further research regarding how to maximize the reading and interpersonal and attitudinal gains from Buddy Reading interventions appears warranted and timely.

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