



## Implementing a Buddy Reading Program to Improve Reading in Young Children

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### Abstract

This action research evaluated effectiveness of peer assisted strategy, a buddy reading program between 21 pairs of kindergarten and first grade students in a rural school in the United States. Kindergarten students who were below reading grade level were paired with firstgrade students who were at proficient reading grade level and vice versa. The study examined how reading storybooks together for 20 minutes a day, three times a week for four weeks, impacted student attitudes toward reading, text reading comprehension (TRC), and dynamic indicators of basic early literacy skills (DIBELS). Findings showed that students enjoyed buddy reading as reflected in the pre-and posttest surveys of reading attitudes. Results also suggest the buddy reading intervention had a positive effect on the end of the year mClass Reading 3D text comprehension. Implications of using this cost-effective peer engagement strategy for teaching and research are provided.

### How to Cite

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## INTRODUCTION

Reading competency is an imperative part of children's academic performance, future success, and career development. The ability of a student to read at grade level is one of the most essential competencies achieved at school, as reading skills are essential for every course of study and career path. The more students read, the higher their reading levels become (Puranik et al., 2018). However, due to time constraints and limited resources, schools and teachers often encounter difficulties in helping students read, especially students reading below grade level (Linder et al., 2017). Schools and teachers ought to identify effective strategies to improve the reading skills of students and keep them from falling behind. There is an ongoing debate regarding which approach schools should use – a whole language approach or phonological awareness approach – to improve students' reading skills (Kim, 2012; MacDonald, 2010).

While there is still some disagreement among educators about which reading comprehension approach is best, there is some evidence that using human and symbolic mediators to assist in the learning process such as reading and writing is effective (Puranik et al., 2018). These mediators (i.e. books, buddy reading program, reading partner) may provide opportunities for young children to develop the skills necessary for better reading comprehension and increase motivation to use these skills without mediation in the future (Kozulin 2003; Puranik et al., 2018). Our current study explored the usefulness of a buddy reading program with young children in a rural school setting in the United States. To the best knowledge of the researchers, this was the first time a buddy reading program was implemented in this school (where the second author is a teacher).

A buddy reading program, which is a type of a peer assisted strategy, where peers help one another to learn by practicing reading is one intervention that can enhance literacy development for both struggling and advanced readers through social interaction (Lowery et al., 2008). As a whole language approach to reading, buddy reading “embeds phonic teaching with the ‘look-say’ approach” (McDonald, 2010, p.2) using real books. Buddy reading programs allow peers to take on the role of a reading mentor with the guidance of teachers (Lowery et al., 2008; Theurer & Schmidt, 2008). Such groups seek to increase the reading level and ability of students while fostering positive self-esteem and confidence (Lowery

et al., 2008). Recent research has shown that buddy reading is advantageous to students because it can provide them with great pleasure in reading, which can boost their learning motivation and confidence (Wang & Lin, 2019) as well as bolster vocabulary and comprehension of students (Silverman, et al., 2016). In addition to promoting literacy, buddy reading programs are also considered cost effective in low income school districts. Budget constraints limit resources and force/push schools to get creative when teaching students; buddy reading enables teachers to use free resources, which promote peer-interaction, and are available to help students to enhance reading and comprehension skills (Friedland & Truesdell, 2004; Vernon-Feagans et al., 2018).

Vygotsky's theory offers a useful lens through which to understand the influence of social and cultural context on children's developing knowledge about the world. The cultural context influences *what* children learn as well as *how* they learn it (Vygotsky, 1986). Utilizing a sociocultural perspective is considered useful in promoting higher critical thinking skills in young children (Berk & Meyers, 2018; Vygotsky, 1986). From this perspective, children's cognitive abilities reflect the integration of where they are in terms of their cognitive development with the demands imposed upon them by the social or cultural context in which they are placed. A concept fundamental to Vygotskian theory with relevance to early childhood teachers using the buddy reading program is the “zone of proximal development” or ZPD. This concept refers to the difference between a child's actual developmental capabilities when working alone and their potential capabilities when guided by a supportive partner. “Scaffolding” refers to the use of guidance strategies that provide children with sufficient challenge to advance their capabilities, while adapting the classroom environment in ways that promote children's learning. Assessing the young child's ZPD, and then using scaffolding techniques with a buddy reading partner to help children to master their reading skills is a useful application of Vygotskian theory to interventions such as implementing buddy reading programs in early childhood education.

Over the past 4-6 years, the yearly performance of students' reading level in Title 1 primary school (where approximately 75% or more of students receive free or reduced lunch) in a rural, eastern county in the United States, had steadily declined. The most recent beginning of the year benchmark assessment scores indicated a 32% proficiency level in reading, while the middle of

the year benchmark assessment scores indicated that 48% of the students were proficient in reading. Because of these poor outcomes, the teachers at the school began to look for engaging and cost effective interventions to spark the interest of young children in reading and expose them to new experiences. This school (where the second author is a teacher in the invention first grade class), introduced the buddy reading program as an action research to provide students in one first grade and kindergarten class with a new opportunity to learn from one another and assess its effectiveness. According to Silverman et al. (2016), a peer learning program as a supplement to regular instruction may bolster students' vocabulary and comprehension by providing students the time and space to talk with one another. In addition, working with a peer is a teaching-learning opportunity for the students involved as both partners in a pair gain from the teaching and learning process (Graham & Perin, 2007, as cited in Puranik et al., 2018). It is important to note that buddy reading program were rarely used with younger readers compared with older readers.

Therefore, the current study explored whether a buddy reading program would be an effective strategy to improve reading and comprehension skills with kindergarten and first grade students in a low resource rural primary school setting in the United States. The following research questions guided the study: How does a buddy reading program affect the attitudes of students toward reading?; How does a buddy reading program affect students' end of the year benchmark assessment scores, specifically text reading comprehension (TRC) and dynamic indicators of basic early literacy skills (DIBELS) as measured by mClass Reading 3D?

The intended outcome of this study was to identify the effective strategies that encourage students' positive attitudes toward reading and increase end of the year TRC and DIBELS scores of students.

## METHODS

This research project was approved by the University Institutional Review Board (IRB). The study employed a practical action research design (Creswell, 2018) with modified experimental approach as applied to classroom practice to create a buddy reading intervention and comparison group between first grade and kindergarten students in a rural primary school in the United States. This approach was chosen to help address the immediate problem of low reading comprehen-

sion scores among first grade and kindergarten students text reading comprehension (TRC) and dynamic indicators of basic early literacy skills (DIBELS) in the school where the second author is a first grade teacher. Field notes were gathered to provide qualitative insight into the buddy reading process. The teacher investigator observed and scribed anecdotal records for buddy reading intervention pairs during each session. Each buddy reading pair was observed once a week for four weeks during the intervention.

## Participants

Participants were recruited from a rural public elementary school in eastern region of the United States. This primary school received Title 1 funding with approximately 75% or more of students eligible for free or reduced lunch (i.e., family income at 185% of the federal poverty guidelines). The intervention group of 42 students for the study included one kindergarten ( $n = 21$ ) and one first grade class ( $n = 21$ ). These two classes were located next door to each other with a connecting door between the two classrooms. The students and teachers of these two classes interacted with one another on a daily basis. Similarly, the comparison group was a pair of one kindergartener ( $n = 21$ ) and one first grader ( $n = 21$ ). These two comparison classes were also located directly next door to each other with a connecting door between them. Demographic information on participants is provided in Table 1.

## Intervention

Parents or guardian of each student ( $n = 42$ ) in the intervention group received a letter describing the study and requesting consent for their children to participate. In addition, each student provided an assent to participate in the buddy reading program, which is an additional layer to parental consent in compliance with IRB protocol. Along with the assent process, all children were given information regarding their unique role in the buddy reading experience.

Each teacher of the intervention group had a bachelor's degree and between 2 and 6 years experience of teaching; and both were females. The teachers of the kindergarten and first-grade intervention groups assigned each pair of students. The pairs were determined according to the students' current reading level as measured by the middle of the year mClass Reading 3D benchmark assessment as well as the teacher's judgment (i.e., the pairs of students would work well together with no potential conflict). The teacher is the most qualified resource to group the

**Table 1.** Participapnt Demographic Information

	Buddy Reading Intervention		Comparison	
	Kindergarten	First Grade	Kindergarten	First Grade
<i>n</i>	21	21	21	21
Gender (%)				
Male	57	48	48	48
Female	43	52	52	43
Ethnicity (%)				
White	33	24	24	24
AfricanAmerican	52	38	38	38
Hispanic	10	33	29	24
Mixed	5	5	9	14

*Note:* Buddy Reading—peer assisted reading strategy

students considering he or she knows the group of students, their personalities, and their reading ability better than any other personnel in the school system. One kindergarten student and one first grade student was paired together to buddy read. Kindergarten students who were considered below grade level were paired with first-grade students who were considered proficient or above proficient so that they could offset each other's strengths and weaknesses. Vice-versa, first-grade students who were considered below grade level, were paired with kindergarten students who were considered proficient or above proficient too, again, offset each other's strengths and weaknesses. Students were provided instruction on how to play roles as coach and reader during the peer interaction and how to provide feedback to their partners when they were coaches.

During the designated buddy reading time, the connecting door between the kindergarten and first grade classroom were opened to create one large open classroom. Each dyad of students chose where they would sit; first grade or the kindergarten classroom. They also chose to sit at a table or on the carpet together. With creating a large, open classroom, students were able to space themselves accordingly and stay focused on reading and prevent distractions.

During the designated buddy reading time, a variety of literacy learning activities took place. The kindergarten students read their story-books to the first-grade students and vice versa. The students were then provided with a simple list of questions to ask each other after they finished reading the story as a follow up activity. These questions were geared toward each student's comprehension of the text. Due to the age of the students and the current curriculum, the students were provided with a modified list of ques-

tions similar to those presented by Theurer and Schmidt (2008) Examples of questions include: (1) Who was your favorite character, and why?; (2) Describe the setting of the story; (3) What is the problem in the story?; (4) Did you like this book? Why or why not?; (5) What was the most interesting part of this book?

The buddy-reading intervention occurred three times a week for a four-weeks. Each session was 20 minutes for a total of 60 minutes of additional literacy instruction time per week for the duration of the program. The buddy reading groups occurred on Mondays, Wednesdays, and Fridays from 2:00 pm until 2:20 pm during the four weeks.

#### Comparison Group

The comparison group of 42 students for the study included one kindergarten ( $n = 21$ ) and one first grade class ( $n = 21$ ). This group of students received the same routine reading instruction as the intervention group, but were not exposed to the buddy reading program nor had knowledge of the program and what it entailed.

#### Reading Attitude Survey

Reading Attitude Survey (Dean & Trent, 2002) was administered before and after the intervention. Because of participants age and grade level (kindergarten and first grade), the original survey with four response choices (fantastic, good, okay, and bad) were modified to three response choices (good, okay, and bad) with associated smiley faces. The teacher read the survey aloud to the students and the students responded accordingly by coloring in the smiley face that represented their feelings. There are no reported validity or reliability scores for this measure.

### mClass Reading 3D Assessment

Quantitative data were collected through the end of the year mClass Reading 3D benchmark assessment. Students were evaluated on their DIBELS scores and their TRC level. These measures are state standardized tests and there are no reported validity or reliability scores for these measure.

### Data Analysis

SPSS version 26.0 was used for the data analysis to complete independent sample t-tests. The independent t-test were used in order to compare assessment scores between the intervention and comparison groups for kindergarten and first grade students to determine if there was a significant difference in scores.

## RESULTS AND DISCUSSION

### Attitudes of Kindergarten Students' toward Reading

The reading attitude survey indicated that kindergarten students have positive attitude about reading (76% reported feeling good, and 24% reported feeling okay) after participation in a buddy reading program compared to their attitudes before participation in the buddy reading intervention (23% and 25%, respectively). The results also revealed that students prefer playing to reading (see table 1). Students opinions did not change regarding their teacher reading aloud. Students' attitudes improved from pre- to post-survey when encountering a new word in reading (95% vs. 100%). In addition, students' attitudes improved regarding how well they read from the pre- to post-survey.

### Attitudes of First Grade Students' toward Reading

Results demonstrated that first-grade students had a positive attitude toward reading. The first-grade students' feelings toward reading in class increased slightly between the pre-survey (76%) and the post-survey (81%). Similar to kindergarten students, the first-grade students preferred play to reading and enjoyed hearing their teacher read aloud (see table 3). The survey indicated that first-grade students felt good about reading after participation in a buddy reading program. Students' attitudes on reading and answering questions increased from pre- to post-survey (33% vs. 63%); however, there was not much change in attitudes toward reading aloud to the teacher. The post-survey indicated that 100% of the students felt good about how well they read.

The Reading Attitude Survey indicated positive results for both kindergarten and first grade students. From pre- to post-survey, the kindergarten and first-grade students reported an increased positive attitude toward reading after participation in the intervention.

### mClass Reading 3D Assessments

**Kindergarten.** An independent samples t-test was conducted to compare the end of the year TRC scores, as measured by mClass Reading 3D, for the intervention and comparison groups of the buddy reading intervention. There was a statistically significant difference in the mean scores for the intervention ( $M=4.05$ ,  $SD=3.045$ ) and for the comparison ( $M=2.29$ ,  $SD=1.102$ ) groups;  $t(22.236) = 2.391$ ,  $p = 0.026$ . These results suggest that the buddy reading intervention did have a positive effect on the end of year mClass Reading 3D TRC scores for the kindergarten students.

**First grade.** An independent samples t-test comparing the end of the year TRC scores between the intervention and comparison groups

**Table 2.** Pre and Post Reading Attitudes of Kindergarten Students

	Pre-Intervention			Post-Intervention		
	Good	Okay	Bad	Good	Okay	Bad
Attitude when it is time for reading class	76%	5%	19%	76 %	24%	_____
Attitude about reading instead of playing	38%	5%	57%	29%	24%	48%
Attitude when you teacher reads a story aloud	76%	24%	_____	76%	24%	_____
Attitude when you come to a new word in reading	71%	24%	5%	71%	29%	_____
Attitude when you are asked to read aloud to your teacher	57%	24%	19%	52%	33%	14%
Attitude when you read a book and answer questions about what you read	71%	19%	10%	67%	24%	10%
Attitude about how well you read	71%	19%	10%	71%	29%	_____

Note:  $n = 21$

of the buddy reading intervention showed no statistically significant difference in the mean scores for the intervention ( $M=18.57$ ,  $SD=6.361$ ) and the comparison ( $M=19.00$ ,  $SD=7.497$ ) groups;  $t(39) = 0.198$ ,  $p = 0.84$ . These results suggest that the buddy reading intervention did not have an effect on the end of year mClass Reading 3D TRC scores for the first-grade students.

### Field Notes

The action research data collection technique of the three E's: experiencing, enquiring and examining (Creswell, 2018), were used to collect data. The researcher took field notes of observations on students interactions and attitudes during participation in buddy reading pairs. The field notes were analyzed using open and focused coding (Creswell, 2018). Findings revealed that students have a positive attitude toward reading. Positive language and behavior among buddy readers included laughing and smiling about the stories they read. Student comments included, "Buddy reading is fun," "He's an awesome reader," and "Good job." In some buddy reading pairs, the first-grade students demonstrated leadership skills by pretending to be the teacher and assisted the kindergarten buddy with sounding out words. Other buddy reading pairs helped one another by practicing sounding out words. The field notes showed that students enjoyed the program and wanted to continue even after the program ended. On the final day of buddy reading program, one student asked, "Is this the last day?" Another asked, "Can we please do this again tomorrow?"

Throughout the intervention, field notes

described students working together to sound out new words in the texts they read and they collaboratively worked to learn from each other. Furthermore, the field notes suggested that the buddy reading program increased students' confidence and motivation to read as noted by the positive language and behavior among the buddy readers progressing throughout the program. Near the conclusion of the intervention, most students (90%) were asking, "Can we please do this again tomorrow?" suggesting that their motivation to read had increased.

The results of this study generally show support for previous literature on effective strategies for improving reading comprehension. Students' attitudes toward reading improved, which may have contributed to increased confidence in reading comprehension (Cassy, 2009). Additionally, kindergarten students' improvement of end-of-year test scores shows that their reading comprehension skills improved, which is in agreement with other studies implementing similar strategies (Theurer and Schmidt, 2008; Vernon-Feagans et al., 2018).

Vygotsky's sociocultural theory was supported by this study, as well. With the help of first -grade students as mentors, kindergarteners scaffolded toward better reading skills and more positive attitudes toward reading. This reinforces the idea that having a human mediator increases an individual's inner desire to internalize the skills taught by higher-skilled mentors (Vygotsky, 1978). Additionally, the end-of-year test scores showed an increase from pre- to post-intervention. This supports the ZPD concept, in that the

**Table 3.** First Grade Pre and Post Reading Attitudes Survey

	Pre-Survey			Post-Survey		
	Good	Okay	Bad	Good	Okay	Bad
How do you feel when it is time for reading class?	76%	19%	5%	81 %	19%	_____
How do you feel about reading instead of playing?	14%	24%	62%	38%	57%	5%
How do you feel when you teacher reads a story aloud?	76%	14%	10%	86%	14%	_____
How do you feel when you come to a new word in reading?	52%	29%	19%	57%	43%	_____
How do you feel when you are asked to read aloud to your teacher?	76%	19%	5%	76%	24%	_____
How do you feel when you read a book and answer questions about what you read?	33%	57%	10%	63%	33%	5%
How do you feel about how well you read?	95% (n=20)	5% (n=1)	_____	100% (n=21)	_____	_____

Note:  $n = 21$

difference between students' developmental capabilities when working alone and their latent capabilities when guided by a supportive partner showed improvement (Vygotsky, 1978).

The findings should be considered with a few limitations. First, the small sample size limits the generalization of the results to a large population. Completing the study with more students would allow for more ability to detect differences within the groups. In addition, the results comparing the DIBELS scores of kindergarten and first grade students in the intervention and comparison groups are categorical. Researchers could use parametric statistics such as independent sample t-tests. Numerical DIBELS scores for students in the study population could not be obtained to conduct independent t-tests. Therefore, the composite DIBELS score categorized the students in three groups: red (significantly below grade level), yellow (slightly below grade level), and green (proficient). The categorized data could not explain whether the intervention had a statistically significant effect on the end of the year DIBELS assessment scores.

### Implications

Based on the current researcher findings, the following are suggested: Teachers should carefully pair students for buddy reading intervention based on their current reading level. It appears from our findings that pairing proficient peers (first grade or kindergarten students) with peers who were below grade level deemed useful for their reading attitudes and skills. This careful pairing by teachers allowed the students to offset each other's strengths and weaknesses.

Teach students the expectations of a buddy reading experience prior to beginning the program so that they are aware of their role. Specifically, it is important for the more proficient students to understand that they are considered a mentor to their partner; this is a key aspect of implementing a successful buddy reading program

Compare beginning of the year DIBELS and text reading comprehension (TRC) assessment scores to end of the year DIBELS and text reading comprehension (TRC) assessment scores to determine if individual students benefited from participation in the buddy reading program.

Extend the findings by exploring the effects with English-language learners in low performing schools. Replicate the study with young children in other country settings by using buddy reading (peer assisted strategy), and their own country specific reading literacy skills or attitude measures.

## CONCLUSION

The Reading Attitude Survey indicated positive results for both kindergarten and first grade students. From pre- to post-survey, the kindergarten and first-grade students reported an increased positive attitude toward reading after participation in the intervention. The independent samples t-test conducted for first-grade comparing the TRC scores for both groups (intervention and control) revealed that the buddy reading intervention did not affect the end of the year assessment scores. However, the independent sample t-tests conducted for kindergarten comparing TRC scores for both groups (intervention and control) revealed that the buddy reading intervention did affect the end of the year assessment scores. The kindergarten intervention group indicated an increase in TRC scores at the end of the year benchmark period.

To summarize, overall, the buddy reading intervention was successful in this low resource rural school setting. When teachers use such evidenced based teaching strategies to promote students' reading literacy in a resources limited classroom setting, it may help to extend this desired outcome, while also providing students a fun and interactive learning experience. Our study also highlights the importance of action research involving practicing teachers who can insightfully contribute to improvements in best practices. Early childhood educators should consider implementing buddy-reading programs in kindergarten and first-grade classes in their schools.

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