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The Effectiveness of Peer-Assisted Learning Strategies for Teaching English Reading Skills to Hispanic English Language Learners

BY

Michelle Watson

THESIS

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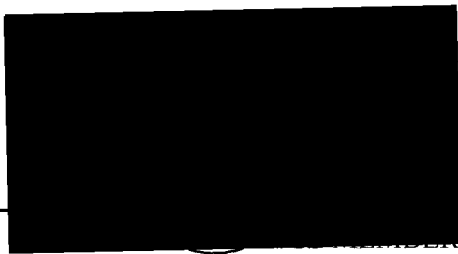
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Running Head: THE EFFECTIVENESS OF PEER ASSISTED LEARNING

The Effectiveness of Peer-Assisted Learning Strategies for Teaching English Reading
Skills to Hispanic English Language Learners

Michelle Watson

Eastern Illinois University

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Abstract

The present study was designed to assess the effectiveness of the Peer Assisted Learning Strategies (PALS) for teaching English reading skills to Hispanic English language learners (ELL) in the third grade. The current literature shows a rapid increase of Hispanic students in the U.S., however, due to a lack of exposure to the English language at an early age, many ELL students are behind their non-ELL peers in academic achievement, especially in reading. The PALS program was designed as an alternative approach to teacher-led instruction to help ameliorate reading difficulties, and although its effectiveness has been demonstrated with a variety of students, little research has been conducted on its effectiveness for teaching reading to Hispanic ELL students, especially in the early grades. Therefore, this study assessed PALS' effectiveness for teaching English reading skills as well as increasing social status for third grade ELL students. Results showed that PALS was significantly effective for increasing reading fluency amongst ELL students, although no significant results were found for reading comprehension or social status. These findings are inconsistent with existing research and the implications and limitations are discussed.

The Effectiveness of Peer-Assisted Learning Strategies for Teaching English Reading Skills to Hispanic English Language Learners

The present study was designed to assess the effectiveness of the Peer Assisted Learning Strategies (PALS) for teaching English reading skills to Hispanic English language learners (ELL) in the early grades. Currently, the U.S. population is comprised of 17% Hispanics, making it the largest minority group in the United States; and it is projected that Hispanics will even exceed 30% of the entire U.S. population by 2050 (U.S. Census Bureau, 2010). In addition, the highest percentage of Hispanics in comparison to Caucasians lies in school-age children (U.S. Census Bureau, 2010). Currently, 1 in 5 children in public schools is Hispanic, and it is projected that by 2050, “there will be more school-age Hispanic children than school-age non-Hispanic white children” (Fry & Gonzales, 2008, para. 2).

However, this rapid growth is not without challenges. For example, 75% of Hispanic families speak Spanish at home (U.S. Census Bureau, 2012) and 42% speak English “less than very well” outside of the home (U.S. Census Bureau, 2013). Therefore, it is not surprising that about half of all school-age Hispanic children are ELL students (Payán & Nettles) and that many of them do not receive fundamental English support outside of school (August, et al., 2006). Thus, about twice as many Hispanic as White students cannot read at the basic level (Shepherd, 2000), resulting in an overrepresentation of Hispanic students in special education classrooms due to reading-related learning difficulties (Artiles, Rueda, Salazar, & Higuera, 2005). Although the need for support with literacy skills in ELL students is unquestionable, identifying an effective instructional strategy for doing so is challenging, because even effective and

well-implemented whole-class or small-group literacy instruction is typically teacher-led (Foorman & Torgesen, 2001). To illustrate, Pica and Doughty (1985) found that the teacher is the speaker about 70% of the time in typical teacher-led instruction (as cited in Holt, 1993). As a result, students with limited English proficiency often do not interact or use language as often as necessary to make substantial improvement (Foorman & Torgesen, 2001).

An alternative method that has been developed in an attempt to improve reading skills is PALS, which is an interactive paired reading program. There has been a variety of research supporting the use of PALS for reading issues in many circumstances (Fuchs, Fuchs, Mathes, & Simmons, 1997; Calhoun, Otaiba, Greenberg, King, & Avalos, 2006; Sáenz, Fuchs, and Fuchs, 2005), although there has not been much research on its effectiveness for teaching reading skills in ELL's. Currently, only three research articles seem to exist regarding the PALS program's use for ELL students, which were conducted on kindergarteners (McMaster, Kung, Han, & Cao, 2008), third through sixth graders (Sáenz, et al., 2005), and on secondary students (Wayman, McMaster, Sáenz, & Watson, 2010). However, none have been found to have been conducted on third graders specifically. This is an important age because "prevention is a more powerful goal than remediation" (Calhoun, et al., 2006, p. 262), so it would be beneficial to begin the prevention of reading difficulties at as early of an age as possible. This is especially important since the No Child Left Behind Act has created the objective that "every child reads well and independently by the end of third grade" (Objective 2.2). Therefore, the current study assessed PALS' effectiveness for teaching English reading skills to young, Hispanic ELL's in the third grade.

Definitions

There are several different terms that are often used when referring to those who are in the process of learning the English language. For example, Hyte (2011) discusses several different common terms: English as a Second Language (ESL) refers to those whose first language is not English, but who are learning it in a predominantly English-speaking country, while English as a Foreign Language (EFL) refers to those whose first language is not English, but who are learning it in a predominantly non-English speaking country. A broader term that encompasses both ESL and EFL is English to Speakers of Other Languages (ESOL). This term also includes those who are learning English as a third, fourth, etc. language as it is a more accurate title than English as a Second Language. The term English language learner (ELL), then, shares a very similar meaning with ESOL. However, unlike ESOL, ELL is a term that is specifically associated with the education system for children in Kindergarten through 12th grade (Hyte, 2011). Therefore, as this study was focused on third graders in the public school system, the term ELL is used.

In addition to defining ELL, there are several different ways in which the classification of ELL can be defined. For example, similar to the definition of ELL above, Antuñez (2002) described ELL students as those “whose first language is not English and who are in the process of learning English” (p. 2). Other authors like Sáenz, Fuchs, and Fuchs (2005), on the other hand, more specifically described such students in their study as those with a “lack of academic English language proficiency as measured by the minimum state standards competency examinations and lack of fluent or advanced oral English language proficiency as measured by the Woodcock Muñoz Language survey”

(p. 234). In more legal terms, the Illinois State Board of Education describes ELL students as:

(1) All children in grades pre-K through 12 who were not born in the United States, whose native tongue is a language other than English, and who are incapable of performing ordinary classwork in English; and (2) All children in grades pre-K through 12 who were born in the United States of parents possessing no or limited English-speaking ability and who are incapable of performing ordinary classwork in English (Illinois Compiled Statutes, Section D).

Since the current study focused on children in the schools, those who were determined to be ELL students by the school system in accordance with the state of Illinois' criteria, which is discussed in more detail later, were included as ELL students.

The difference between home language and first language also requires some clarification. Home language refers to the dominant language spoken at home by the parents or the child (Transitional Bilingual Education, Section 228.10). For example, for a bilingual family speaking Spanish and English, the home language would be the language that is used most often of the two, the one that the child is most exposed to in the home environment. However, first language (also referred to as native language or mother tongue) is "The first language a person acquires in life, or identifies with as a member of an ethnic group" (Colorín Colorado, Glossary). These two terms are often intermixed, but for the current study, home language and first language are used independently.

Given the definition of ELL in the current study, which components of reading are measured? There are five major reading components which are known as "The Big Five

of Reading”: phonemic awareness, phonics, vocabulary, fluency, and comprehension. In this study, fluency and comprehension are measured, because they are the ultimate goals of reading achievement (Hale, et al., 2011; Nel, et al., 2004). Reading fluency is defined as how fast a student can read accurately and with proper expression (Hale, Hawkins, Schmitt, & Martin, 2011; National Reading Panel, 2000). Reading comprehension is defined as “understanding a text that is read, or the process of constructing meaning from a text” (National Reading Panel, 2000, as cited in Nel, Dreyer, & Kopper, 2004, p. 96). Both reading fluency and comprehension are important in determining reading achievement because those who can read many words correctly and can also understand what they have read have less difficulty learning the reading material (Hale, et al., 2011; Nel, et al., 2004).

As can be seen by the various definitions, the overall theme of ELL students is that these children cannot sufficiently learn in English-only classrooms because they have “different linguistic and academic needs from the mainstream school population” (Antuñez, 2002, p. 2). It is, therefore, important that research, such as this, identifies supplemental instructional strategies that support ELL students. In the next section, ELL students’ school experience is discussed.

School Experience and Academic Achievement

Instruction. Support that is currently offered in the schools once a child is deemed ELL includes one of two general types of instructional methods: Bilingual instruction or English-Only instruction. However, there is no consistency in how these programs are implemented. For example, Bilingual instruction involves using both languages (the first language and English) to achieve English proficiency, and it is

usually delivered in one of two ways: First, in Transitional Bilingual Education (Garcia, 2009), the use of the first language is gradually decreased while the use of English is gradually increased (“Colorín Colorado, Glossary”; Garcia, 2009). Secondly, in Two-Way Bilingual Education, either a bilingual teacher or two teachers (one who speaks in English and one who speaks in the other language) teach the class in both languages (“Instructional Programs for English Language Learners”, 2007; Garcia, 2009). In this type of instruction, the goal is for all children in the classroom to become bilingual (“Instructional Programs for English Language Learners”, 2007; Garcia, 2009).

English-Only instruction is when language and content support is given solely in English (Garcia, 2009). English-Only is often delivered through ESL Pull-Out or Content-Based Instruction. For ESL Pull-Out, students are pulled-out of the regular education classroom to be given explicit English language instruction (“Instructional Programs for English Language Learners”, 2007; Garcia, 2009). Content-Based Instruction is an umbrella term for different types of Content-Based Instruction, including Structured English Instruction, which focuses on learning language skills; and Sheltered English Instruction, which focuses on learning content. The goal of these instructional types is to teach the content and the English language at the same time in the general education classroom (“Colorin Colorado, Glossary”; “Instructional Programs for English Language Learners”, 2007; Garcia, 2009).

However, which of these two types of instructional methods is best (Bilingual or English-Only) for ELL students has been a long-debated topic (Gándara, 2012). Since the 1960’s, after the Bilingual Education Act was introduced, there has been a large amount of research investigating this area and the literature has shown support for each side

(Gándara, 2012). For example, in support of the Bilingual method, many authors document student success (August, Goldenberg, & Rueda, 2011; Branum-Martin, Foorman, Francis, & Mehta, 2010). Also, the Arizona experiment is held as evidence against the English-Only approach as Arizona passed an English-Only policy in 2000, but has since documented little to no change in ELL students' achievement (Garcia, Lawton, & De Figueiredo, 2012; Martinez-Wenzl, Pérez, Gándara, 2012; Rolstad, MacSwan, & Mahoney, 2012). On the other hand, others have found the two methods to be equally effective (Cheung & Slavin, 2012; Hofstetter, 2004; Slavin, Madden, Calderón, Chamberlain, Hennessy, 2010).

Despite the on-going controversy of language instruction, one thing that research seems to converge on is the idea that the quality of instruction is a much more important factor than the language of instruction itself (Calderón, et al., 2011; Gándara, 2012, Cheung & Slavin, 2012; Obudo, 2007). The research is conclusive that highly-qualified teachers are key to student success despite the language of instruction (Calderón, et al., 2011; Gándara, 2012, Cheung & Slavin, 2012; Obudo, 2007).

Achievement Gaps. Having the most effective educational experience is critical for ELL students; because based on a literature review by Bowman-Perrot, Herrera, and Murry (2010), one thing that all ELL students tend to have in common is lower academic achievement than their non-ELL peers, particularly in reading. This is likely due to the fact that they are asked to perform at grade level while also learning a new language at the same time (Bowman-Perrott, et al., 2010), which is an underlying factor in many of their achievement gaps (Jang, Dunlop, Wagner, Kim, & Gu, 2013).

As mentioned above, reading is one of the greatest areas of concern for ELL students, and it is true for those of the Spanish-speaking population specifically as it has been documented that about twice as many Hispanic as White students cannot read at the basic level (Shepherd, 2000). This reading discrepancy was further demonstrated by Zehler and colleagues (2003) who found that 76% of ELL students were below or well-below reading grade level in third grade. However, reading is not the only academic area that suffers. In that same study, 53% of third graders were also shown to be below grade level in math, and 70% of 4th graders were also below grade level in science. These findings are consistent with the literature that show that ELL students are below their peers for at least the first five years of school (Jang, et al., 2013). Several authors have suggested that, on average, it takes somewhere between five to eight years to acquire academic proficiency in the English language (Thomas & Collier, 2002; Jang, et al. 2013; Carhill, Suárez-Orozco, & Pérez, 2008).

However, other researchers have found that ELL students are able to catch up with their peers and maintain their academic success with the help of early intervention. For example, Halle, Hair, Wandner, McNamara, and Chien (2011) found that students who became verbally proficient by the first semester of first grade actually kept up with their peers throughout eighth grade and achieved similar reading scores ($M = 172$) as their eighth grade non-ELL peers ($M = 173$). On the other hand, those who entered kindergarten, but did not attain verbal proficiency until the spring semester of first grade were substantially behind their peers ($M = 156$); and those who did not attain verbal proficiency until after the spring semester of first grade showed an even greater discrepancy ($M = 132$) compared to their eighth grade peers (Halle, et al., 2011). These

findings indicate that the age of proficiency attainment is important and has long-lasting effects. However, in another study, ELL students even exceeded their non-ELL peers in vocabulary skills and grammatical knowledge, and also matched their non-ELL peers in comprehension, after five years of receiving a rich linguistic environment and ongoing instructional support. (Jang, et al., 2013). These studies clearly indicate the importance of an intervention program, especially an early intervention program, such as PALS, which can be implemented in the early years to provide the support ELL students need to catch up and ensure academic success.

However, the path to academic success in English can be complicated. For example, it appears that first generation immigrant ELL students (those born in the second language country, which for the current study would be those born in the U.S.) have consistently lower achievement scores than not only their non-ELL peers, but also their immigrant peers (those born in the first language country; Jang, et al., 2013; & Broomes, 2010). This may seem counter-intuitive, but the authors suggested that this may be because first generation students do not often receive formal English instruction since they were born in the United States and, therefore, do not “fit the traditional picture of an immigrant English language learner” (Jang, et al., 2013, p. 426). In other words, even though they were born in the United States, their first language might not be English and little or broken English is spoken in the home and the community. Therefore, implementing a classroom-wide program, such as PALS, may offer all ELL students the language skills support they otherwise may not have received.

Retention. As stated earlier, ELL students show the largest discrepancy in the area of reading; and this achievement gap plays a critical role in retention (i.e., repeating

a grade), because the main reason students are retained is due to below-grade-level performance in reading in the early grades, according to the National Research Council in 1998 (Snow, Burns, & Griffin, 1998). For example, in the Miami-Dade School District, ELL students in Kindergarten through 11th grade were retained on the average 50% more than non-ELL students, 3.4% and 1.7%, respectively (Shneyderman, 2013). Although retention in the early grades appears to not be as harmful as later retention, there are still negative social and emotional outcomes for all students no matter the grade level the student was retained (Wu, Hughes, & West, 2010). For example, Wu, Hughes and West found that children who were retained in first grade had an initial increase in perceived school belonging and peer relationships, but that they regressed to the original level of those aspects over the next four years. Similar results have been found in various other studies demonstrating that any initial benefits to grade retention have only short-term effects; within two to three years, the achievement of those students was no better than before the retention (Jimerson, 2001; Moser, West, & Hughes, 2012; Wu, Hughes, & West, 2010).

Dropping out of school before completing high school has also been shown to be related to retention. For example, several ELL students blamed early grade retention for dropping out of school, because they felt too old, according to Falbo (1996); and Rooney and colleagues (2006) found that in 2004, 11% of ELL students who were retained eventually dropped out, compared to 4.3% of non-ELL students. In fact, the U.S. Department of Education in 1997 indicated that students who were retained two years or more were four times more likely to drop out than those who were not retained (as cited in Bowman-Perrott, et al., 2010). Furthermore, English skill level seems to be related to

high dropout rate as well. According to the National Center for Education Statistics (2004), ELL students who had only “some verbal proficiency” in English were three times as likely to drop out than their non-ELL peers, and those who had difficulty with English were five times as likely to drop out (as cited in August & Shanahan, 2006).

Special Education. In addition to the high school dropout rates, ELL students also seem to be over-represented in special education programs (Artiles, et al., 2005). The most common reason for special education referrals in ELL students is reading-related difficulties (56%) as reported by the U.S. Department of Education in 2003. According to Zehler and colleagues (2003), 9% of ELL students were referred for special education in the 2001-2002 school year as compared to only 3 to 5% of non-ELL students. Since reading difficulties are supposed to occur at about the same rate across different ethnic groups (Cortiella, 2011), the 9% referral rate for ELL students (double that of their non-ELL peers) suggests that referrals may be the result of other factors. In other words, it is likely that not all of the ELL students referred were truly having difficulties due to special education needs (e.g. learning disabilities); rather, low English proficiency might have been responsible for their learning difficulties. Overall, the school experience appears to be less than positive for many ELL students.

Relationship among Home Environment, English Proficiency, and Academic Achievement

Home Environment and Academic Achievement. It has been well-documented that not only the school environment, but also the home environment is a large contributor to the academic success of all children (Christenson, Rounds, & Gorney, 1992; McNair & Johnson, 2009; Potter, Mashburn, & Grissmer, 2013; August, et al.,

2006). One factor in the home environment that is linked to academic achievement is socioeconomic status (SES). Although a full discussion of the factors that contribute to SES is beyond the scope of this study, factors such as adult English proficiency, level of education, immigration status, low employment, underemployment, or unemployment are known to contribute to low SES (The Latino Labor Force at a Glance, 2012). Fix, Passel, and Velasco (2004) reported that Hispanic families are more likely to have low SES and live below the poverty line than other ethnic groups in the U.S. As noted by many studies, poverty is disadvantageous to children because those who live in poverty are often substantially behind their peers academically (U.S. Department of Education, 2003; Linver, et al., 2002; National Institute of Child Health and Human Development Early Childcare Research Center, 2005).

Many researchers have demonstrated the negative effect low SES has on academic achievement. For example, Linver and colleagues (2002) found that children of low SES status had significantly lower scores on the Stanford-Binet Intelligence Scale at 3 years of age, and the Wechsler Preschool and Primary Scale of Intelligence at 5 years of age; and ELL students are no exception. In fact, in a study conducted by Roberts, Mohammed, and Vaughn (2010), ELL students' language-related differences were minimized when SES was controlled for, indicating that SES is one of the more significant factors in denoting low achievement rates in ELL students. This may be because the main differences between low-income and other socioeconomic status families is the amount of books in the home, frequency of parent-child reading, and also parent-child language interactions (U.S. Department of Education, 2003; Linver, et al., 2002; National Institute of Child Health and Human Development Early Childcare

Research Center, 2005). However, it has been suggested that literacy-intensive programs may ameliorate the effects of SES over time (D'Anguilli, et al., 2004).

Home Language and English Proficiency. Another influential factor in the academic success of ELL students has been shown to be language preferences at home. August, et al., (2006), and Dixon, Zhao, Quiroz, and Shin (2012) reported that with Hispanic students, on average, the language used with siblings predicted English vocabulary knowledge and the language used with parents predicted Spanish vocabulary knowledge. To elaborate, the more English that was spoken amongst siblings, the higher the student's English vocabulary skills; whereas speaking English with the parents showed no significant influence. On the other hand, the more Spanish that was spoken with the parents, the higher the students' Spanish vocabulary knowledge, but speaking Spanish with their siblings had no significant influence (August, et al., 2006; Dixon et al., 2012). Some speculative explanation for this outcome may rest on the quality of the language used. Since the siblings have been exposed to the English language in school, they may be more fluent in English with a broader vocabulary than the parents; and parents may be more fluent in Spanish than their children. Thus, both may aid vocabulary development in the language with which they are proficient. In a similar vein, Cirino, Pollard-Durodola, Foorman, Carlson, and Francis (2007) demonstrated that teacher verbal language proficiency (in the language being taught) was a significant predictor of literacy and verbal language outcomes of ELL students. Therefore, this further demonstrates the importance of having quality English instruction within the school system itself since it is possible that many non-native speaking families may not have the

English skills required to allow the practice and exposure that is needed for their children to make adequate gains in the English language.

It is important to note, however, that speaking the first language at home seems to have a positive correlation with second language acquisition in the long run. According to Jang and colleagues (2013), speaking the first language at home had an initial negative effect on the students' progress (34% of multilingual students met the grade level standards for reading achievement, as compared to 51% of monolingual students). However, after living in and with the new language for three and five years, the multilingual students then had the same comprehension skills and even higher vocabulary skill mastery and grammatical knowledge than their monolingual peers. This was further supported by Halle, et al. (2011) who found that children whose home language was in the first language had a steeper rate of growth than those whose home language was English. These findings suggest that first language engagement at home can actually be beneficial to language development in the long run. This is likely because once the first language is learned, that knowledge can then be transferred to the second language, allowing for a quicker acquisition (August, et al., 2006; Nikolov & Csapó, 2010; Goodrich, Lonigan, & Farver, 2013).

In summary, ELL students appear to have many challenges and schools are still struggling with how to effectively educate those with low English proficiency (English-Only vs. Bilingual Education; Gándara, 2012). They are behind in reading, which is important for success in other content areas (Shepherd, 2000; Zehler, et al., 2003; Bohlmann & Pretorius, 2002); they have a high rate of school dropout (Rooney, et. al., 2006; U.S. Department of Education in 1997, as cited in Bowman-Perrott, et al., 2010)

and representation in special education (Artiles, et al., 2005; Zehler et al., 2003); and some may be disadvantaged because of the home environment (e.g., low SES), which is known to be related to achievement (Fix, et al., 2004; August, et al., 2006; Dixon et al., 2012; & Jang, et al., 2013). The quality and frequency of English spoken in the home can also have an impact on early English skills (Cirino, et al., 2007; August, et al., 2006; Dixon et al., 2012). These challenges highlight the importance of early intervention to encourage the development of English literacy in ELL students. This early intervention may also distinguish between those who have poor literacy due to special education needs and those who simply need language and literacy skill development. Overall, the PALS program, discussed next, is poised to help reduce the reading achievement gap for ELL students in the early grades.

The Peer Assisted Learning Strategies (PALS) Program

The PALS Process. Before discussing the evidence, an overview of the process of PALS is summarized. According to Doug and Lynn Fuchs, who began developing the PALS program in 1988 at Vanderbilt University, PALS is a highly interactive and structured program by which paired students take turns being the reader and coach (Fuchs, et al., 2000). This program can be used classroom-wide and has been shown to be effective for both math and reading skills development. With the PALS program, teachers implement 35-minute sessions three times per week, which may be substituted for regular reading activities instead of supplementing them, therefore, requiring no extra time in the classroom. Typical strategies used for enhancing reading fluency and reading comprehension are Partner Reading (two students take turns reading), Retell (tell what occurred in the passage), Paragraph Shrinking (summarize main ideas), and Prediction

Relay (predict what happens next), which will be discussed in more detail under Procedure in the Method section.

To begin with, all students in the class are put into pairs, with a higher-performing student paired with a lower-performing student. In order to ensure that there is not a large achievement discrepancy between the students in each pair, the teacher ranks the students from highest-performing to lowest-performing in reading skills and then splits the list in the middle. The teacher then pairs the highest-performing student on the first list with the highest-performing student on the second list (Fuchs, Fuchs, & Burish, 2000).

The pairs are then given a reading passage and the paired students take turns being the reader and the coach for the different activities (Fuchs, et al., 2000). Teachers prepare their students for these activities through whole-class training and demonstrations (McMaster, et al., 2008). In these training sessions, the teacher acts as the coach while the students act as readers in different scenarios. The students are then gradually integrated into their assumed roles while the teacher circulates around the room to monitor progress and provide feedback (McMaster, et al., 2008).

After the students have been properly trained on the process and put into pairs, each pair is then assigned to one of two competing teams in order to create incentive for their work. Pairs earn points by completing reading passages correctly and demonstrating proper coaching behavior. Each time the reader earns a point by reading sentences or answering questions correctly, the coach slashes consecutively numbered score cards, and the final score is the last number that is slashed. The teacher also walks around the classroom and awards points for the use of appropriate coaching behavior, therefore, making both the coach and the reader accountable for their points. Thus, both competition

between the two teams as well as cooperation between the paired students is required. The team and pair assignments are changed every four weeks in order to provide the students with a variety of exposure (Fuchs, et al., 2000).

Evidence for PALS in the Classroom. The use of this empirically-based strategy has been shown to be effective for teaching a variety of reading-related skills. For example, Fuchs, Fuchs, Mathes, and Simmons (1997) found that compared to control groups, students who used PALS improved significantly more on all three reading dimensions: fluency, accuracy, and comprehension, with Cohen's *f* effect sizes of .22 to .56 (small to medium effect sizes). This outcome was consistent among students with learning disabilities, low-performers, and average-performers; i.e., all student types showed improvements.

In addition, beyond the improvement of reading skills in the general population, it was also found to be effective for bilingual Hispanic children in the first grade (Calhoun, et al., 2006). In their study, Calhoun and colleagues examined the efficacy of PALS in 78 first grade students, 68% Hispanic and 32% Non-Hispanic, from a New Mexico border town. All Hispanic children in the study came from homes that spoke both English and Spanish. As pre- and post-test measures, the researchers used three subtests from the Dynamic Indicators of Early Literacy Skills (DIBELS) – Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), and Oral Reading Fluency (ORF), which are all subtests used assess components of reading fluency. PALS was implemented in each classroom for 30 to 35 minutes, three times per week for 20 weeks (60 sessions total) using the basal core reading program Houghton Mifflin. The control group also used the Houghton Mifflin core reading program, but a variety of strategies that are typically

conducted in teacher-led instruction were used to teach it, such as repeated reading in leveled text and phonics instruction.

Results of the study showed that there was a significant interaction effect of time and condition on PSF, $F(2, 148) = 12.79, p < .000$, and NWF, $F(2, 148) = 5.32, p < .01$, but not on ORF $F(1,74) = .04, p > .05$ (Calhoun, et al., 2006). The researchers stated that the insignificant effects for ORF were likely because the students already had average ORF scores at baseline, based on first grade benchmarking standards. Follow-up analyses showed that there was a significant effect of the PALS program over the control group for both PSF and NWF. Further, a higher percentage of Hispanic students who were initially at-risk for reading performed at grade level by the end of the year using the PALS program (41%) as compared to the control group (19%). Of those who began at grade level, a higher percentage of Hispanic students remained at grade level in the PALS condition (88%) than in the control group (50%). Therefore, this study demonstrated PALS' effectiveness for enhancing reading fluency skills in bilingual Spanish-speaking students.

In another study, conducted by Sáenz and colleagues (2005), PALS was also shown to be effective for enhancing English reading comprehension in ELL students with and without learning disabilities. In this study, 132 Spanish-speaking ELL students in third through sixth grade participated. For each grade level, 11 students were selected: two with a learning disability (LD), three low-achieving (LA), three average-achieving (AA), and three high-achieving (HA). The teachers of these grades were randomly assigned to either the PALS group or the control group for 15 weeks. Results showed that for questions answered correctly (out of 10 questions on 2 different passages), there was

no interaction effect of treatment type and student type, but there was a main effect of treatment type, showing that those who were in the PALS condition read more words correctly than those in the control group, $F(1,10) = 12.91, p < .001$. There was also no main effect of student type for any measures, indicating that PALS was effective across all student types, with Cohen's d effect sizes ranging from .86 to 1.03 (a large effect size).

In addition, PALS has high satisfaction ratings with both students and teachers. In a study conducted by Sáenz and colleagues (2005), teachers gave PALS an average rating of 4.33 or above (on a scale of 1 to 5, 5 showing high satisfaction) for improving overall achievement, social skills, reading self-confidence, the contribution of incentives (awarding points), and partnering to reading achievement. Similar results were demonstrated in another study. Teachers rated PALS highly on the areas of the improvement of student reading skills, teacher willingness to participate in PALS again, and the students' active involvement in their own learning (Calhoon, et al., 2006). Teachers also found PALS to be time-effective and easy to incorporate into their schedule, because it required no additional preparation (Fuchs, et al., 2000), other than the recommended one-day workshop ("PALS Reading and Math Workshops"). Furthermore, students appear to enjoy the use of PALS as well. They rated PALS positively in terms of helping them become better readers, the coaching experience, earning points, and developing friendships with other students (Sáenz, et al., 2005; Calhoon, et al., 2006).

Overall, the PALS program has been demonstrated to be an effective tool for teaching reading-related skills to a variety of different student types (Fuchs, et al., 1997;

Calhoun, et al., 2006; Sáenz, et al., 2005). It also demonstrates high treatment acceptability by both teachers and students (Sáenz, et al., 2005; Calhoun, et al., 2006).

PALS vs. Teacher-Led Instruction. Since PALS appears to be a more effective strategy for teaching reading skills than teacher-led instruction, what are the unique qualities of PALS that contribute to its effectiveness, compared to typical teacher-led instruction? The PALS program differs from teacher-led instruction in several ways: It incorporates enhanced exposure to reading, comprehensible input (input in a way that the students understand it), immediate corrective feedback, and incentives, all of which have been shown to be related to reading achievement. To elaborate on these qualities, first of all, PALS adds exposure to both input and output, because it requires the students to spend extra time reading aloud and engaging in conversation about the text (Long & Porter, 1985; Bejerrano, 1987; Sáenz, et al., 2005). This is in accordance with the theory that learning language-related skills is dependent on the amount of opportunities allowed to receive comprehensible input, modify output, and negotiate the meaning of language through feedback (Pica, Lincoln-Porter, Paninos, & Linnell, 1996; Bialystok, 2006; Long & Porter, 1985). During whole-class instruction, plenty of opportunities are allotted for students to receive comprehensible input by allowing students to hear information said by the teacher or by hearing other students read aloud (Long & Porter, 1985). However, PALS exceeds typical teacher-led instruction because it is very interactive, providing many opportunities for not only exposure to input (in which the student hears the coach demonstrate), but also output (in which the reader engages in the reading him or herself and also helps to find and correct errors made by the other student), and the negotiation

of meaning (in which the coach and reader communicate and reason an answer; Long & Porter, 1985, Bejerano, 1987; Sáenz, et al., 2005).

Secondly, PALS also exceeds typical teacher-led instruction by enhancing the amount of input that is likely to be considered “comprehensible”, because it provides individualized prompts (Fuchs, et al., 2000). Although teacher-led instruction may also involve some one-on-one time with students to help them comprehend the information at an individual level, teachers are not typically able to provide the amount of intensive one-on-one instruction that is necessary to alleviate difficulties for struggling learners (Foorman & Torgesen, 2001). However, PALS involves one-on-one time throughout the entire process, allowing students with specific reading-related difficulties to receive individual help that whole-group instruction may miss.

Thirdly, although both PALS and teacher-led instruction focus on fluency and comprehension in the early grades; they use different strategies. For example, second through sixth grade PALS has a focus on enhancing fluency and comprehension (Fuchs, et al., 2000) with success (Fuchs, et al., 1997; Calhoun, et al., 2006; Fuchs & Fuchs, 2005). Similarly, teacher-led instruction in second through sixth grade can focus on the explicit teaching of fluency and comprehension as well, but with limited success. The difference is that PALS uses a method of immediate corrective feedback for fluency and comprehension errors, which has been shown to lead to less error-making in verbal tests, especially when students are aware that they will be given immediate corrective feedback (Fajfar, Campitelli, & Labollita, 2012).

Finally, PALS differs from typical teacher-led instruction in that it requires the pair to keep track of points that can lead to rewards (Fuchs, et al., 2000). The use of

rewards for enhancing learning and cooperation has a long history and it has been demonstrated to be effective in many studies (e.g., Lysakowski & Walberg, 1981; Swain & McLaughlin, 1998; Higgins, Williams, McLaughlin, 2001; Ling & Barnett, 2013). Providing incentives to students for good reading as well as for proper implementation of the program increases student motivation for high performance. Further, keeping track of points may also serve as a self-monitoring technique, which has also been shown to enhance academic achievement in a variety of areas, including reading (Joseph & Eveleigh, 2011; Bruhn & Watt, 2012; Amato-Zech, Hoff, & Doepke, 2006).

As can be seen, overall, the PALS program provides teaching strategies and practices above and beyond what typical teacher-led instruction can offer, such as increased exposure to both input and output in reading-related skills, individualized instruction, immediate corrective feedback, and also the use of rewards to facilitate motivation, all of which have been shown to enhance achievement (i.e. Long & Porter, 1985; Fajfar, Campitelli, & Labollita, 2012; Ling & Barnett, 2013; Bruhn & Watt, 2012). Thus, given PALS' success in improving reading skills and the research support it has demonstrated, it was proposed that PALS could be used to improve reading skills, especially in ELL Hispanic students (not just English monolingual students) during the early years of their education, thereby decreasing the likelihood of academic failure. If this is true, what explains this assumption?

Theoretical Framework

The underlying theory behind the assumption that PALS can be effective for teaching reading skills to ELL students is based on the understanding that reading development occurs through the same process across languages (Ervin-Tripp, 1974;

August & Shanahan, 2006). The research literature shows that all languages require similar skills to be successful in reading, such as exposure to language, grammatical knowledge, high vocabulary knowledge, reading fluency, and reading comprehension (Ervin-Tripp, 1974; August & Shanahan, 2006). Therefore, based on this theory, effective strategies for teaching reading skills in a first language, in this case English, as PALS has been shown to do, should also be effective for teaching reading skills to students whose first language is not English, i.e., ELL Spanish-speaking students.

However, PALS has also been shown to improve peer perceptions about those who were previously considered to be “different,” (Fuchs, Fuchs, Mathes, & Martinez, 2002) which in this case could be those who do not have the same language skills as other students. Having this social acceptance is important because of its link to academic success for all students (Doan, 2010, LeCroy & Krysik, 2008). Although, this may be especially true for ELL students, because having positive peer relationships can also lead to more language experiences (input and output opportunities) outside of reading activities. In other words, the relationship between social acceptance and language opportunities may not only be directed in a univariate manner, but instead, through a reciprocal interaction. Having positive peer relationships may not only lead to more exposure to language, but having greater language skills may in turn lead to more positive peer relationships, causing a circular effect (Cutting & Dunn, 2006). This reciprocal interaction in positive peer relationships may be related to academic success.

Furthermore, since PALS has been shown to improve student relationships for those who were previously considered to be “different” (Fuchs, et al. 2002), this new social network may reflect the collectivist values most Hispanic children enjoy.

According to MacPhee, Fritz, and Miller-Heyl (1996), in the Hispanic culture, a strong social network involving support from parents, extended family members, and peers is highly valued (even more-so than the individualist culture typical in the U.S.). Perceived cultural competencies, such as having a strong social network is related to increased self-esteem (Raghavan, 2006), which in turn is related to academic achievement (Liu, Kaplan, & Risser, 1992). Therefore, although improving peer relationships is not the primary goal of PALS, the method used for teaching reading (pair cooperation and collaboration) appears to improve peer relationships and their social network, which may enhance learning, especially for the Hispanic ELL student. Given this, it would be interesting to note if peer relationships are improved by PALS, and if it is in anyway related to reading fluency or comprehension.

Thus far, the discussion has focused on the challenges ELL students face in the school setting, including the ongoing debate about how to educate these students, factors that contribute to low academic achievement, and high rates of retention, special education representation, and school dropout. This was followed by an in-depth rationale for PALS' utility for improving reading skills, which is expected to decrease the challenges identified above, and the theoretical framework.

The Current Study

Existing literature shows a rapid increase in diversity in the school setting as well as society at large, especially for those of Hispanic descent. Currently, one of every five school-aged children is Hispanic, and it is predicted that the rate will change to two of every five in the near future (Fry & Gonzales, 2008). However, about 75% of Hispanic children come from Spanish-speaking households (U.S. Census Bureau, 2012), and if it

takes about five years to correct for the lack of early exposure to the English language (Jang, et al., 2013), it is not surprising that ELL students lag behind their non-ELL peers in academic achievement, especially in reading (Bowman-Perrott, et al., 2010). As discussed in some detail under School Experience and Academic Achievement above, trying to master academic content in English before reaching proficiency in the English language is an enormous challenge for ELL students. The consequences of this can be seen in the achievement gap; twice as many Hispanic as White students cannot read at the basic level (Shepherd, 2000), which places an unrealistic expectation on students to keep up with their non-ELL peers. This can lead to higher rates of special education referrals (Artiles, et al., 2005; Zehler et al., 2003) as well as grade retention, which in turn leads to a higher chance of dropping out of school (Rooney, et. al., 2006; & U.S. Department of Education in 1997, as cited in Bowman-Perrott, et al., 2010). Despite attempts to accommodate ELL students, many interventions have been shown to be ineffective, and this could be because they are teacher-led and may not provide the students with the reciprocal interaction that is necessary for them to learn English at an appropriate level (Foorman & Torgesen, 2001).

The current study was designed to examine the effectiveness of the evidence-based intervention program, PALS, for teaching reading skills to ELL Hispanic students in the third grade. There has been extensive research on the effectiveness of PALS in a variety of situations; however, little research has examined its effectiveness for teaching reading skills to Hispanic ELL students, especially in the early grades.

Therefore, for this study, the researcher attempted to answer the following questions:

1. Would PALS increase ELL Hispanic students' reading skills, as measured by fluency and comprehension, more than typical, teacher-led instruction?

Hypothesis: ELL students' reading skills would increase more than the control group.

This hypothesis is based on previous research on the effectiveness of PALS that showed that those who were in the PALS conditions had significantly higher overall reading skills, specifically higher fluency, comprehension, (Fuchs, & Fuchs, 2005; Sáenz, et al., 2005), and reading accuracy (a component of fluency; Fuchs, et al., 1997) than those in the control groups.

2. Would participants show different skill levels for reading fluency and reading comprehension?

Hypothesis: Participants would show higher level of improvement in reading comprehension compared to reading fluency.

In previous research, components of both reading fluency and reading comprehension have been shown to be positively affected by PALS (Calhoun, et al., 2006; Sáenz, Fuchs, & Fuchs, 2005), however, in some studies effect sizes for reading fluency were observed to be smaller than those for reading comprehension (Fuchs & Fuchs, 2005).

3. Would the PALS program enhance peer relationships for ELL students more than typical, teacher-led instruction?

Hypothesis: PALS would enhance peer relationships for ELL students compared to those in the control group.

PALS has been shown to increase peer ratings for those who were previously considered to be “different” (Fuchs, et al. 2002), which in this case may have been those whose first language was not English. As students work together on language skills (in pairs as PALS requires), not only does this enhance listening and speaking skills, there is also the potential for more social interactions (Cutting & Dunn, 2006) and, therefore, higher social acceptance.

4. Would enhanced peer relationships play a more critical role in the academic achievement of Hispanic ELL students than non-ELL students?

Hypothesis: Enhanced peer relationships would be related to higher level of reading for ELL students than non-ELL students.

Social relationships may be a more important factor for the Hispanic ELL students, because research has demonstrated that interpersonal relationships are more valued by those in a collectivist culture (MacPhee, Fritz & Miller-Heyl, 1996); and this may lead to increased self-esteem (Raghavan, 2006) and, therefore, higher academic achievement (Liu, Kaplan, & Risser, 1992).

Method

Participants and Setting

For this study, there were 95 participating students; 50 in the PALS condition and 45 in the control condition. However, since this study sought the improvement of only the ELL students, only the performance of the ELL students in the PALS and control classrooms was assessed. There were 57 ELL students between the two classrooms; 32 in the PALS condition and 25 in the control condition. ELL students were identified according to the Illinois state standards, presented on pages 9 and 10, under Definitions. To summarize, an ELL student is defined by the state as a school-age child who is

“incapable of performing ordinary class work in English” whether the child is an immigrant or born in the U.S. (Illinois Compiled Statutes). Thus, in the state of Illinois, a student is considered to be “incapable of performing ordinary classwork in English” when he or she obtains an overall composite proficiency score below a level of 5.0, a reading proficiency score below 4.2, and a writing proficiency score below 4.2 on the age-appropriate WIDA (World-Class Instructional Design and Assessment) test (New “Proficiency” Definition, Illinois State Board of Education). These proficiency scores on WIDA tests range from 1.0 to 6.0 (1.0 – Entering, 2.0 – Beginning, 3.0 – Developing, 4.0 – Expanding, 5.0 – Bridging, 6.0 – Reaching), meaning that a student requires an overall composite score (a combined score for the listening, speaking, reading, and writing subtests) below the “Bridging” range, and reading and writing scores below the “Expanding” range in order to be considered an ELL student. In the current study, the age-appropriate WIDA test was the ACCESS (Assessing Comprehension and Communication in English State-to-State for English Language Learners) and the students’ ACCESS proficiency scores between groups, along with additional demographic data for the two conditions, are found in Table 1, Student Demographic Information.

Participating students were from a school district at the primary researcher’s internship site (a suburban grade school in the Midwest). This school used a Transitional Bilingual Program in which Spanish-speaking ELL students are in separate classrooms than their non-Spanish-speaking peers and receive increasingly more instruction in English from Kindergarten to second grade. Therefore, third grade is when both bilingual and monolingual students are integrated into the same classrooms for the first time and all

instruction is given in English. At this school, there were four third grade classrooms; therefore two classrooms were randomly assigned to be the PALS classrooms and the remaining two were assigned to be the control classrooms.

Instruments

Three instruments were used to assess all participants' skills at the beginning (pre-test) and at the end of intervention (post-test) to measure oral reading fluency, reading comprehension, and sociometric (social) status. A fourth instrument was also used to collect demographic information from participating teachers and students in order to determine any significant pre-intervention differences between the groups.

Curriculum-Based Measurement (CBM). In order to measure reading fluency, curriculum-based measurement (CBM) was used (Appendix I). CBM first started with the data-based program modification (DBPM) model, developed by Deno and colleagues at the University of Minnesota in the 1970's (Deno & Mirkin, 1977, as cited in Deno, 2003; Espin, McMaster, & Rose, 2012). This model was intended to measure the effectiveness of teachers' instruction in special education classrooms by giving the students probes and then modifying instruction based on the results of those probes (Deno, 2003). This DBPM model was then empirically tested through a six-year study conducted by the University of Minnesota Institute for Research on Learning Disabilities (IRLD). The conclusions of this study resulted in a generic set of procedures for monitoring progress in reading, spelling, and written expression (Deno, 2003). When these generic procedures "are employed with stimulus materials drawn directly from the instructional materials used by the teachers in the classrooms, the approach is referred to as curriculum-based" (Deno, 2003, p. 1). Curriculum-based measurement, then, is a set of

standardized procedures drawn from this approach (Deno, 2003). Most schools use a CBM reading assessment of “Words Correct Per Minute” (WCPM; Hale, et al., 2011) for benchmarking (data collected routinely throughout the year to monitor the progress of student learning). For this, the student reads aloud from a grade-appropriate passage for one minute as the examiner marks errors that are made, including omissions, substitutions, mispronunciations, or skipped lines (Hale, et al., 2011). The number of words read as well as the number of errors are recorded, where the number of errors are then subtracted from the number of words read to get the number of words read correctly (number of words read - number of errors = number of words read correctly; Hale, et al., 2011). One of the leading CBM assessment systems for schools today is Aimsweb, a web-based resource, which provides CBM probes, normative data, and tools for organizing and monitoring the students’ scores (“Powerful Assessment System from Aimsweb”). Based on Aimsweb’s benchmarking standards, the target number of words to be read correctly (at the 25th percentile) using Aimsweb probes in third grade is 77 in the Fall, 105 in the Winter, and 119 in the Spring (“Aimsweb Target Scores 2012-2013”).

CBM has good validity and reliability estimates for all students (Fuchs & Fuchs, 1992; Wayma, Wallace, Wiley, Tichá, & Espin, 2007; McGlinchey & Hixson, 2004; Merino & Beckman, 2010; Hintze & Silberglitt, 2005). It has been found to have reliability coefficients between .87 to .95 (McGlinchey & Hixson, 2004), and to significantly predict scores on the Measures of Academic Progress (MAP) standardized tests ($p < .05$; Merino & Beckman, 2010). It has been demonstrated that CBM has good validity and reliability estimates (above .80) for bilingual students, and similar reliability and validity estimates for bilingual students as English-only students, with validity

coefficients above .70 for three of the four criteria (Baker & Good, 1995). CBM is also sensitive to changes in bilingual and ELL students' English reading skill over time (Baker & Good, 1995; Ramírez & Shapiro, 2006). Finally, Wiley and Deno (2005) found moderate to strong correlations for oral reading fluency with state achievement tests.

Measures of Academic Performance (MAP). In order to measure reading comprehension, the Measures of Academic Performance (MAP) assessment was used. The MAP is an achievement assessment first created by the Northwest Evaluation Association (NWEA) in 1976. It was originally developed by a group of school districts looking to quickly and accurately measure the achievement of all their students and then be able to adjust their teaching based on the results. Of course, high stakes achievement tests, such as the recently developed Partnership for Assessment of Readiness for College and Careers (PARCC), already measure the achievement of all students. However, the problem with these types of tests is that the results are often not received until after the school year has ended; thus, not allowing time for teachers to adjust their teaching practices to meet the students' needs. Therefore, the MAP was developed as a briefer and more frequent measure of academic achievement to assist with the problem-solving process, which is discussed in more detail below ("Technical Manual for Measures of Academic Progress", 2011).

The MAP is currently developed for those in second through 12th grade and provides a composite score in the subject areas of Math, Reading, and Language Usage aligned with state content standards ("Technical Manual for Measures of Academic Progress", 2011). The composite score is reported using a continuous interval scale called a Rausch unIT (RIT) score, which is a scale developed by NWEA specifically for the use

of the MAP (Merino & Beckman, 2010). The assessment is a multiple-choice computer-based test that is adaptive, meaning that the assessment adjusts itself based on the child's performance. For example, according to the Technical Manual, if a student answers a question incorrectly, an easier item is presented next. In contrast, if a student answers a question correctly, a more difficult item is presented next. There are several advantages to using this approach rather than the typical non-adaptive tests. For example, as discussed in the Technical Manual, the students are able to take the assessment at reasonable difficulty for their achievement level and estimates of the student's true achievement level are more precise (have lower standard error of measurement). Merino and Beckman also mention that most students complete 25 to 30 questions in each section and unlike high-stakes achievement tests, it usually only takes students between 20 and 40 minutes to complete each subject area, although there is no time limit. Also, the Technical Manual states that unlike high-stakes achievement tests, the scores on the MAP are received within 24 hours after administration. Therefore, because of its ease of administration and quick results, the MAP is designed to be administered three to four times per year as a benchmarking procedure (like CBM) and many schools throughout the U.S. use it to measure students' academic achievement and progress in the three subject areas throughout the year ("Measure Student Progress with MAP").

The Reading portion of the MAP is broken down into three areas. The first is called Literature, which refers to aspects such as a student's ability to make inferences and predictions, draw conclusions, determine main ideas, and summarize a literary work. The second is called Informational Text, which refers to similar aspects as Literature (a student's ability to draw conclusions, determine main ideas, summarize, etc.), but also to

cite textual support and develop arguments in informational texts (i.e. a text book or directions for a project). The third is called Word Meaning and Vocabulary Knowledge, which refers to a student's ability to decode words, recognize and understand word relationships and structures, and use context cues to decipher word meaning ("RIT Reference Charts", 2014). These three areas then combine to give an overall Reading RIT score, which was the score used as the reading comprehension measure in this study. The national mean score for a third grade student is a RIT score of 189.9 in the Fall, 194.6 in the Winter, and 199.2 in the Spring ("2011 NWEA Measures," 2015).

The psychometric properties of the MAP's Reading measure have been demonstrated in a vast number of studies conducted by NWEA as well as other outside researchers. For example, test-retest reliability coefficients from Fall 2007 to Spring 2008 in 42 states were found to range from .69 to .88 in second through 10th grade (as cited in Merino & Beckman, 2010). A study by NWEA found the test-retest reliability from Spring 2008 to Fall 2008 for third grade specifically to be .80 ("Technical Manual for Measures of Academic Progress", 2011). Also, in terms of validity, research with state achievement tests (such as The Stanford Achievement Test – 9th Edition, Iowa Tests of Basic Skills, and Indiana Statewide Testing for Educational Progress – Plus) showed that there was a correlation of .79 to .87 in the third grade ("Technical Manual for the NWEA MAP and ALT Assessments", 2003). Another study by NWEA listed in the Technical Manual found the validity to state achievement tests in the third grade to be an average of .75 in the 11 states assessed. In regard to ELL students specifically, a study also demonstrated that MAP is "a fair and valid test for ELL students, as long as they have received instruction in content and technical vocabulary" (Bohlman, p.31).

Sociometric Status. To assess peer relationships in the classroom, a procedure called Teacher Ranking was used (Appendix J). Teacher ranking procedures have been shown to be a valid and reliable measure of student social competence. In this procedure, teachers are asked to rank students according to the frequency and extensiveness of which each student is regularly selected as a playmate (Connolly & Doyle, 1981). This measure has been demonstrated to be at least moderately correlated with student nomination scales (a method in which students pick their top three favorite and least favorite students to play with), which were considered to be the standard of the study (Connolly & Doyle, 1981; Boivin & Bégin, 1986). However, researchers have also suggested that teacher ranking may be an even more valid and reliable measure than student nominations. In a study conducted by Connolly and Doyle (1981), teacher ranking was found to have interrater reliability scores between .93 and 1.00 for student popularity, which were higher than the peer nomination measure. The researchers concluded that the teacher ranking procedure may be an even more powerful measure than peer nominations.

For this measure in the current study, the researcher asked each teacher to rank the students in her classroom in order of social likability, with the first person being the student other children want to play with the most and the last being the student other children want to play with the least. The same procedure was then conducted at the end of the study.

Demographic Information. Two forms were designed by the researcher for collecting demographic information on participating students and teachers, such as gender, language fluency, etc. (Appendices E and H, respectively). This demographic

information was used to assess differences among participants in the PALS and control conditions.

Procedure

Consent. As participants were from the researcher's internship site, permission to conduct the research on the internship site was first sought from the school district. Once permission was granted from the school district, approval was also sought from the Institutional Review Board (IRB) at Eastern Illinois University to conduct the study.

Then, at the beginning of the school year, all four of the third grade teachers were recruited. In order to encourage participation, the researcher held an informational meeting with all the third grade teachers to explain the procedure of the study and PALS' potential benefits to their students and to answer any questions. Finally, parental consent and teacher consent was sought. The teachers willingly signed the Teacher Consent Form (Appendix G) and Teacher Demographic Information Form (Appendix H) immediately after the informational meeting. Parental consent was then sought by sending home (in both English and Spanish) the Parent Letter (Appendices A and B), Parent Consent Form (Appendices C and D), and the Student Demographic Information Form (Appendices E and F) with all the third grade students. A self-addressed envelope was also included along with instructions (noted on the Parent Letter) on how to return the signed consent and the completed Student Demographic Information Form.

Parents were expected (as indicated on the Parent Letter) to place the signed Parent Consent Form and the completed Student Demographic Information Form in the self-addressed envelope, seal it, sign it across the flap, and return it to the teacher with the child. The researcher then collected the unopened envelopes from the teachers. The

consent form detailed the voluntary and confidential nature of the study and parents were asked to grant access to their children's data (benchmarking data for reading fluency and MAP data for comprehension). Although this study only sought the improvement of the ELL students, since PALS is a class-wide strategy for teaching language skills, all children in the PALS classrooms participated with parental consent. For those in the control classrooms, consent was still sought for all students in order to grant the researcher access to the students' data; parental consent was received for 100% of the students in the four classrooms.

As noted above, the Parent Letter, Parent Consent Form, and Student Demographic Information Form were in both English and Spanish to accommodate parents with limited English proficiency. In order to assure proper translation, a procedure recommended by Brislin (1970) and his colleagues Lonner, and Thorndike (1973) was used. The English version was translated into Spanish by a bilingual (proficient in both Spanish and English) volunteer from the Foreign Language Department at Eastern Illinois University; and the Spanish version was then back-translated into English by another bilingual volunteer (the bilingual School Psychologist at the internship site). The original English version was then compared to the back-translated English version and no discrepancies in word meanings were found between the two versions, showing equivalent meaning.

Also, as the students were age 8 to 9 years old, their verbal permission was also granted in order to participate in the study. For this, the teacher individually asked each student if he or she was willing to participate in the PALS program and again, 100% of the students gave consent.

Confidentiality. In order to assure confidentiality, each teacher and student was assigned a number instead of using names. For example, PALS teachers were assigned numbers PALS1 or PALS2. Thus, for PALS teacher 1, students were assigned numbers 1-1, 1-2, and 1-3, meaning student 1, 2, and 3 are in the first PALS teacher's room. This list along with all scores was stored on a password-protected program and only the researcher had access to it.

Teacher Training and PALS Implementation. As mentioned previously, it is recommended (although not necessary) for teachers to undergo a one-day training session on how to train their students and implement the PALS program (McMaster, et al., 2008). However, as the third grade PALS teachers were unable to schedule a full-day PALS training session, the teachers did not feel comfortable training the students on the program themselves. Therefore, after consent was obtained, the researcher went into the PALS classrooms and conducted the whole-class training sessions with the students using the procedures outlined in the PALS Teacher's Manual, which involved four weeks of training (12 sessions total). The Teacher's Manual provided detailed steps for the student training, and also included steps for modeling the procedure, teaching the proper prompts, and having the students gradually practice as the teacher and researcher walked around to ensure it was being done correctly.

Once training was completed, the PALS teachers paired the students using the suggested PALS procedure. As previously discussed, the teachers made a list starting with the highest-achieving student in reading to the lowest-achieving student in reading, based on a combined analysis of both benchmarking (CBM) scores and Fountas and Pinnell scores (another system for determining student reading abilities within the

classroom). As mentioned previously, the teachers then split the list in half and placed the highest-scoring student of the first list with the highest scoring student of the second list together in a group for the first four weeks. After that, the researcher prompted the teachers to switch the pairs using a similar pairing method. It should be noted that due to when breaks were scheduled (such as Thanksgiving, Christmas, and Spring Break), the pairs were not always switched after exactly four weeks as typically done with the PALS program. Sometimes the teachers and researcher collaboratively decided to wait five or six weeks to make the change a smoother and more natural transition in the students' schedule.

Once the classrooms were trained on how to implement the PALS procedure, PALS was implemented three days a week for 20 weeks after the week of training; totaling approximately 55 sessions, not including the training, school closings, or scheduling conflicts. As mentioned previously, the PALS program is intended to be done for 35 minutes, three times per week (Fuchs, Fuchs, & Burish, 2000). However, due to scheduling issues, the current study was based on 25-minute PALS sessions, three times per week. As intended, this program was conducted in the general education classroom with all students, in place of a regular reading program. Therefore, the time of the day in which PALS was done was dependent on when the teachers had their regularly-scheduled reading instruction. One teacher conducted PALS from 8:30 to 8:55 in the morning and the other conducted PALS from 11:30 to 11:55 in the morning.

In both conditions, the teachers used reading books that were at the level of the individual readers. Teachers in the PALS condition used Reading A-Z, which are online books (that students accessed through their ipads) divided into levels based on reading

difficulty (Level A through Level Z). This was deemed to be a more effective method than using hard-copy books as students were able to easily find a large variety of other books at their reading level (once they had completed a book) without even having to move from their seats. However, it should be mentioned that there were two students in the PALS condition that were new-comers (came to the school directly from a Spanish-speaking country) and did not know basic conversational English. Therefore, as the second, third, and fourth activities of PALS focus mainly on reading comprehension (which would have been beyond frustration level for those students in English), these two students were paired with bilingual students and started with reading books in Spanish and eventually progressed into reading books in English. As the third grade teachers had no full 25-minute literacy time blocks of the same activities in their schedule, PALS time replaced some time in a couple different literacy activities. For example, in their original schedule, the teachers would typically give a teacher-led lesson with in-seat practice on day one, then would allow the students to work in pairs for an activity related to the lesson on day two, and would then allow the students to attempt a similar activity on their own for day three. The lesson and activities, however, would only last for approximately 15 minutes each day (instead of 25 minutes as in PALS), so the teacher then also took away from five minutes of “read to self” time and “read to someone” time. Therefore, the PALS strategy replaced not only teacher instruction, but also some components of the students reading alone and reading to another peer. Teachers in the control condition, then, followed the original literacy schedule as described above instead of using the PALS procedure. Overall, students received approximately the same amount of literacy

time in the day, but the type of instruction that was used varied between the condition types.

The researcher then completed integrity checks in each PALS classroom once a week for the duration of the study. During this integrity check, the researcher walked around the room (as the teacher also did) in order to ensure the program was carried out appropriately and to answer any questions the teacher or students had.

PALS Activities. As briefly mentioned previously, the second through sixth grade PALS program consists of four different reading activities: Partner Reading, Retell, Paragraph Shrinking, and Prediction Relay. The first activity is always Partner Reading, which involves the reading of the passage and focusing on the pronunciation of the words. The higher-performing student in the pair always reads first to provide a model of how the passage should be read (Fuchs, et al., 2000). The roles then switch and the lower-performing student reads the same material (Fuchs, et al., 2000). Whenever the reader makes an error, the coach is to say, “Check it” (Fuchs, et al., 2000). If the reader does not determine the word within three seconds then the coach is trained to say “That word is _____. What word?” (Fuchs, et al., 2000). The reader then reads the word aloud and if said correctly, the coach is to say, “Good. Read the sentence again” (Fuchs, et al., 2000). In this activity, students earn one point for every sentence read correctly (and if a correction is needed, the point is awarded only after the sentence is read correctly; Fuchs, et al., 2000). Typically, this activity is done for ten minutes (five minutes for the first reader and then five minutes for the second reader). However, due to having to shorten the overall PALS sessions by ten minutes, in the current study, this activity was done for approximately seven minutes (three and a half minutes for each student).

The second activity then is Retell. After both students have read, the lower-performing student is to retell in his or her own words what occurred in the passage (Fuchs, et al., 2000). The students can earn up to ten points for retelling the story accurately and including all pertinent details; the pair decides together how many points they feel they deserve (Fuchs, et al., 2000). Typically, this activity is done for two minutes, but for the current study, this activity was done for one minute.

The third activity is called Paragraph Shrinking, which is used for enhancing comprehension by requiring the students to summarize the events in the passage (Fuchs, et al., 2000). Again, the pair switches roles with the higher-performing student always being the one to be the reader first in order to serve as a model. In this activity, the reader reads one paragraph at a time and after each paragraph, the reader stops to identify the main idea of the paragraph (Fuchs, et al., 2000). The coach facilitates the process by asking the reader to identify who or what the paragraph is mostly about and what is most important to note about the subject (Fuchs, et al., 2000). The coach then asks the reader to state the main idea in ten words or less (Fuchs, et al., 2000). If it exceeds ten words, the coach will say, "Shrink it," or if the summary seems to be incorrect (there are no answer guides, so the coach must think critically about the correct answer), the coach will say, "That's not quite right. Skim the paragraph and try again" (Fuchs, et al., 2000). In this activity, one point is earned for every correct identification of who or what the paragraph is about, one point for stating the most important thing about the subject, and one point for stating the main idea in ten words or less (Fuchs, et al., 2000). In this portion, the coach still corrects reading mistakes, but the pair is no longer awarded points for proper reading and pronunciation as to put a focus on comprehension instead (Fuchs, et al.,

2000). Typically, this activity is done for ten minutes (five minutes for each student), but for the current study, this activity was done for seven minutes (approximately three and a half minutes for each student).

The fourth reading activity is called Prediction Relay, in which the students make predictions about what will happen next, which is a strategy used by high-performing readers with good comprehension (Fuchs, et al., 2000). For example, a high-performing reader will be triggered to think that he or she misunderstood something when the story does not play-out as predicted (Fuchs, et al., 2000). By contrast, poor readers seem to “have difficulty evaluating text for internal consistency and compatibility with known facts” (Fuchs, et al., 2000). Therefore, with this activity, there are three steps: 1) The reader makes a prediction about what will happen on the next page, 2) the reader reads the next half page aloud while being corrected for reading errors, 3) and finally, the reader determines if his or her prediction was confirmed or disconfirmed (Fuchs, et al., 2000). However, if the coach believes that the prediction is unreasonable, the coach is allowed to disagree and the reader is to critically think of another possibility (Fuchs, et al., 2000). In this activity, one point is earned for every reasonable prediction (as deemed by the coach), one point for reading half a page, and one point for accurately confirming or disconfirming the prediction (Fuchs, et al., 2000). As noted previously, the higher-performing reader is always the one to read and do the activity first and then the pair switches roles. Again, this activity is typically done for ten minutes (five minutes for each student), but for the current study, this activity was done for seven minutes (approximately three and a half minutes for each student).

Results

In order to first learn about the sample, descriptive statistics were analyzed (Table 1 compares the ELL student demographic information by group). Then to determine any preliminary differences between the groups, chi square analyses corrected for continuity (for nominal and ordinal data) were conducted and they indicated no significant differences between the groups in gender, number of years in the U.S., number of languages spoken in the home, primary language, number of students who read at home every day, number of students in reading intervention, or ACCESS proficiency levels. An independent *t*-test was also conducted on number of years living in the U.S. The results indicated that at an alpha level of .05, there was no significant difference between the groups, $t(55) = -1.37, p = .18$.

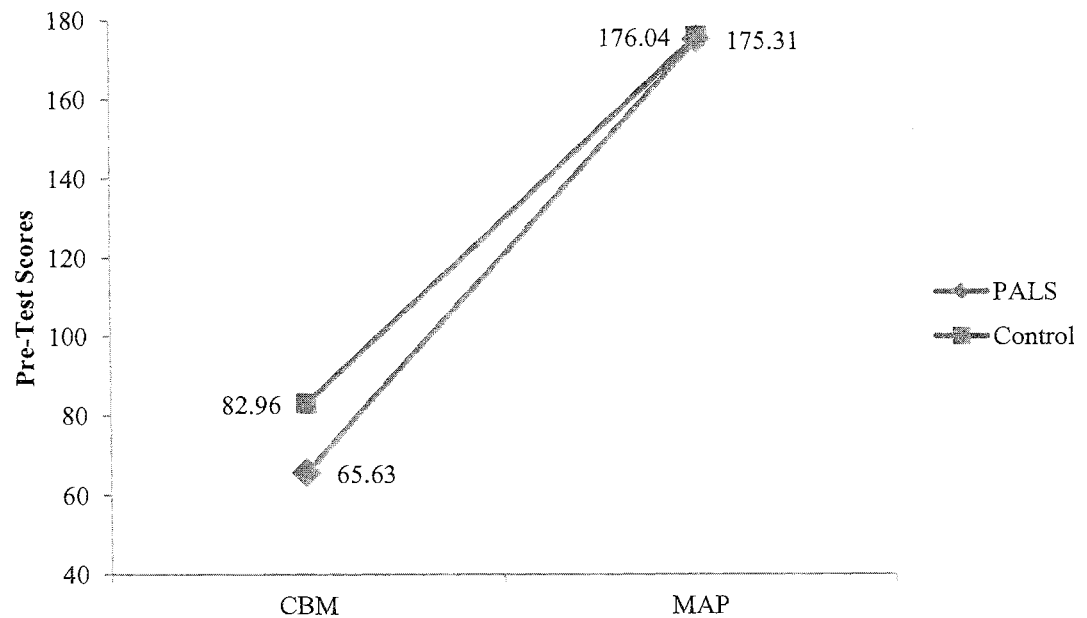
Table 2 compares the teacher demographic information by group. Fisher's exact probability tests indicated no significant differences between the groups of teachers in gender, highest degree earned, Spanish fluency, certification, or ELL training. For the number of years teaching, those in the PALS condition had an average of 6.5 years teaching and those in the control condition had an average of 5.5 years teaching.

Research Question 1. In order to answer the first research question of whether or not PALS would increase Hispanic Students' reading skills, as measured by fluency and comprehension, more than typical teacher-led class-wide English instruction (in other words, whether PALS is more effective than typical instruction for ELL students as measured by CBM and MAP scores), it was first necessary to determine any preliminary differences between the groups on the pre-test measures. Therefore, a two-way mixed factorial analysis of variance was conducted to analyze the pre-test results on the CBM

and MAP measures (the within-subjects factor) between the groups (PALS vs. control) for ELL students (the between-subjects factor). The results showed that there was a significant interaction between the reading measure (CBM vs. MAP) and group type (PALS vs. control), $F(1, 55) = 6.78, p < .05$. Results of simple effects showed that those in the PALS condition had near significant differences on the CBM measure, $F(1, 55) = 3.42, p = .07$, but had no significant differences on the MAP measure, $F(1, 55) = .03, p = .86$, (see Figure 1 below), although the significant interaction with non-significant simple effects for CBM can be attributed to unequal group sizes. Overall, the results showed that there were initial differences between the groups for fluency, but not for comprehension. Therefore, the researcher attempted to control for the initial fluency differences, which is discussed in more detail below.

Figure 1.

Interaction Effect of ELL Group and Reading Measure on Pre-Test Scores

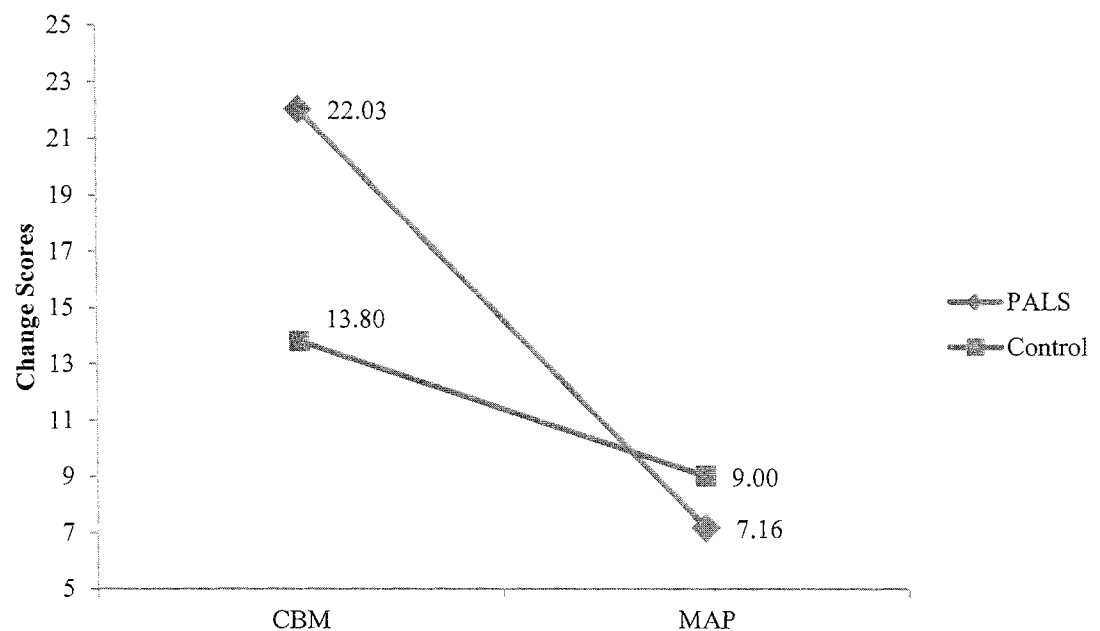


To determine whether the PALS program significantly impacted CBM scores, MAP scores, and/or a combination of both more so than typical instruction, a two-way mixed factorial analysis of variance was conducted on the change scores (the dependent variable). To obtain the change score, each student's post-data score was subtracted from that student's pre-data score on both the CBM and MAP assessments. This was done because change scores have been shown to be a more meaningful reading measure than post-test scores for lower-performing students, such as ELL students (Smith, Cummings, Nese, Alonzo, Fien, & Baker, 2014). The independent variables were the reading measure (fluency and comprehension; within-subjects factor) and group type (PALS or control; the between-subjects factor). The predicted outcome for the first part of the research question was that there would be a significant difference in the mean of both reading measures between the two groups, with the PALS group showing a higher mean change in reading skills for both CBM and MAP measures. The results showed that at an alpha level of .05, there was a significant interaction effect between the reading measure (CBM vs. MAP) and group type (PALS vs. control), $F(1, 55) = 6.45, p = .01, \eta_p^2 = .11$. Results of simple effects tests showed that when looking at the change in CBM scores, those in the PALS condition showed a significantly higher change score ($M = 22.03, SD = 14.59$) than the control group ($M = 13.80, SD = 12.11$), $F(1, 55) = 5.12, p < .05$. However, when looking at the change in MAP scores, those in the PALS condition showed similar change ($M = 7.16, SD = 11.01$) to those in the control group ($M = 9.00, SD = 8.34$), $F(1, 55) = .48, p = .49$ (see Figure 2 below). Therefore, the hypothesis was not confirmed as only one reading measure (CBM) produced significant results, whereas the other (MAP) did

not. Table 3 shows the results of the two-way mixed factorial analysis of variance for the reading fluency and comprehension measures.

Figure 2.

Interaction Effect of ELL Group and Reading Measure on Change Scores



Also, since research has shown that those who have lower initial reading scores tend to have naturally higher rates of improvement (Smith, et al, 2014), the researcher wanted to control for the differences in the pre-test CBM scores since the PALS condition had somewhat lower initial CBM scores ($M = 66$) than the control group ($M = 83$). Therefore, it was determined at what national percentile each student's rate of improvement fell at based on their initial CBM scores. A student's rate of improvement was calculated by dividing their change score by the number of weeks between the pre- and post-test, giving the number of words they gained per week. The rate of improvement (instead of the original change scores) needed to be used because national average improvement on CBM measures is reported in words gained per week since interventions

can have varying lengths of implementation. Once the number of words gained per week (rate of improvement) was calculated, each student's rate of improvement was then compared to the national improvement of others who started at the same fluency level using the "Aimsweb ROI Growth Norms" chart (Appendix K). By doing this, a student who began with a lower initial CBM score would be required to have a higher rate of improvement than a student who began with higher initial CBM score in order to have the same percentile of improvement. To illustrate, if a student had a pre-test fluency score in the national "Average" range and gained 1.14 words per week, their rate of improvement would be at the 45th percentile compared to others who also began in the "Average" range. However, if a student began in the national "Low" range and also gained 1.14 words per week, their rate of improvement would only be at the 35th percentile compared to others who began in the "Low" range. The percentiles were then placed into one of two categories: below average (below the 25th percentile) or average/above average (25th percentile and above). The 25th percentile was used as the cut-off since this is the typical cut-off point used in schools to determine which students can receive intervention (are considered below average). Results of a chi square test corrected for continuity showed that there was a significant difference in the number of students in each category between the groups, $\chi^2(1, N = 57) = 4.38, p = .04$, Cramer's $V = .31$. More than half of those in the PALS condition (59%) improved at an average/above average rate for their level whereas less than half of those in the control condition (28%) improved at an average/above average rate for their level. Therefore, despite where the students started, those in the PALS condition showed a faster rate of improvement for CBM scores.

Research Question 2. To answer the second research question of whether participants showed different skill levels for reading fluency and reading comprehension, the f -statistics of fluency and comprehension were compared. The hypothesis was that MAP scores would show the higher change. However, as mentioned previously, the results of the simple effects tests showed significantly higher change in scores for the PALS than the control group for CBM scores, but when looking at MAP scores, those in the PALS condition showed similar change to those in the control group. Therefore, the predicted outcome did not come true; in fact, the opposite was found.

Research Question 3. To answer the third research question of whether or not PALS would enhance peer relationships for ELL students more than typical, teacher-led instruction, an independent t -test was first conducted on the ELL students' pre-test scores to determine any initial differences between the groups. The results showed that there were no initial differences in the students' rank between the PALS and control groups, $t(56) = .60, p = .28$.

To determine whether or not PALS significantly impacted sociometric scores, an independent t -test was conducted on ELL students' sociometric status change scores between the PALS and control condition. The independent variable was the program type (PALS or Control) and the dependent variable was the change score of the ELL students' rank. Since there was a different number of students in the classrooms and, therefore, a certain rank would not be equivalent across the classrooms, the students' rank was divided by the number of students in the classroom and then multiplied by the average number of students in the study. Again, to calculate the change score, each ELL student's rank at the pre-test was subtracted from the student's rank in the post-test. It was

hypothesized that those in the PALS condition would show significantly better change (change in a more negative direction) than those in the control group. The results showed that there was not a significant difference in change in students' rank between the PALS and control groups, $t(56) = .00, p = .50$, Cohen's $d = .07$, so the hypothesis was not confirmed. The results of the independent t -test are shown in Table 4.

Research Question 4. To answer the fourth research question of whether or not peer relationships play a more critical role in the academic achievement of Hispanic ELL students than non-ELL students, a Pearson's r correlation was conducted between students' change scores in reading (both fluency and comprehension) and students' change scores on the teacher ranking in the PALS program. Therefore, two Pearson's r correlations were conducted for the ELL students (one for fluency change scores and one for comprehension change scores) and the same was done for the non-ELL students. A z -test was then conducted in order to determine whether or not one group obtained a significantly higher correlation (with a more negative number showing a stronger correlation as negative teacher ranking change scores indicated more positive change). It was hypothesized that the ELL students would show a higher correlation than the non-ELL students. The results of the z -test showed that there was not a significant difference in the correlations between ELL and non-ELL students for reading fluency, $z = -.46, p = .32$, or reading comprehension, $z = .44, p = .33$, so the hypothesis was not confirmed. The results of the Pearson's r correlations and z -test are displayed in Table 5.

Discussion

This study investigated the effects of the PALS program on Hispanic ELL students' reading skills in the third grade. Hypothesize one was supported in terms of

fluency as the results showed that on the CBM and MAP reading measures, those in the PALS condition made significantly greater gains in the area of reading fluency than those in the control condition. Also, when students' fluency improvement rates were categorized as being average/above average or below average based on the level where they started, significant differences were seen between the groups. In the PALS condition, 59% improved at an average/above average rate whereas only 28% of those in the control group improved at an average/above average rate. However, hypothesis two was not supported; no significant gains for the PALS over the control condition were found in the area of reading comprehension.

These findings are notable for several reasons. First, the results found for reading fluency are consistent with past research on PALS with ELL students. For example, Sáenz and colleagues (2005) found that students in PALS read an average of 26 more words correctly from the pre-test to post-test whereas the control group read an average of 15 more words correctly, with a Cohen's *d* effect size estimate of .60. This is nearly identical to the current study as the PALS students improved by 23 words whereas the control group students improved by 14 words, with a calculated Cohen's *d* effect size estimate of .61. Therefore, this adds to and supports the current research on the benefits of PALS for improving ELL students' English reading fluency. This is also significant because reading fluency is an important skill for adequate reading comprehension, including for ELL students (Pey, Min, & Wah, 2014; Li & Wu, 2015). As the literature indicates, these two skills are the ultimate goals of reading, because those who can read many words correctly and can also understand what they have read have less difficulty

learning the reading material (Hale, et al., 2011; Nel, et al., 2004). Therefore, the enhancement of reading fluency is an important contribution to overall reading ability.

At the same time, despite significant effects for reading fluency, no significant results were found for the reading comprehension measure. This was surprising as it was inconsistent with previous studies on ELL students showing significant and even larger effects for reading comprehension than reading fluency (Sáenz, et al., 2005, Fuchs, et al., 1997). Therefore, one hypothesis for why the current study may have shown different results than previous research is based on the type of measure used. In previous studies with ELL students, comprehension effects were measured by the CRAB (Comprehensive Reading Assessment Battery), which involves using the average number of questions answered correctly in two 10-question samples (Sáenz, et al., 2005, Fuchs, et al., 1997). In addition, the students were expected to give their answers orally on the CRAB instead of by using the computer as done with MAP. It is interesting to note that in both studies using the CRAB measure, significant results were found. Therefore, the inconsistent results could partially be accounted for by differences between the measures, however, more research in this area is needed.

Another hypothesis lies in the discrepancy between reading fluency scores for students in the current study and the previous research. For example, in the current study, the average number of words read correct for the ELL students was 66 (below a starting third grade reading level) at the pre-test. In research done by Sáenz and colleagues (2005), the third through sixth grade ELL students read an average of 91 words correct per minute at pre-test (slightly above a starting third grade reading level). In this study, large effects were seen for comprehension, with Cohen's *d* effect sizes ranging from .40

to 1.02. However, in another study with lower initial fluency scores like the current study, the third grade students began at an average of 53 words correct per minute (below a starting third grade reading level). In this study, similar results to the current study were found, with significant effects only for fluency and not comprehension (Vaughn, Chard, Bryant, Coleman, Tyler, Linan-Thompson, & Kouzekanani, 2000). These results might be explained by research that has shown that fluency is less predictive of comprehension at lower levels of fluency (Yaacov & Young-Suk, 2011). This indicates that at lower levels of fluency, students may rely more heavily on aspects outside of their reading abilities, such as background knowledge on the story, in order to comprehend instead of gaining information from the text itself. However, once fluency reaches a certain (higher) level, students can begin using the information from the text in order to comprehend. This is consistent with the theory of automaticity, which asserts that when a student is able to read quickly and accurately, it allows the student the cognitive freedom to focus more on the meaning of the text than word decoding (LaBerge & Samuels, 1974, as cited in Khor, Low, & Lee, 2014). Therefore, it may be at this point when instruction in reading comprehension strategies becomes more relevant and beneficial. Since the students in the current study had lower pre-test CBM scores than previous research with ELL students, this could also partially account for the discrepant findings. It appears that researchers may want to investigate more on the critical time for comprehension instruction.

This study also investigated the effects of the PALS program on Hispanic ELL students' social standing. The results indicated that PALS did not significantly enhance the ELL students' likability in the classroom; thus, hypothesis three was not supported. This is also contradictory to previous research, which has found the PALS program to

increase peer ratings for those who were previously considered to be “different” (Fuchs, et al. 2002), which for the current study may have been those whose first language was not English. One hypothesis for why no significant results were found in the current study is again due to the type of measure. In previous research, students’ likability was determined by a peer measure instead of a teacher one. Although some research has found teacher measures to be more valid than those from peers (Connolly & Doyle, 1981), other authors have suggested that teachers may be measuring a different, “outside”, view of peer relationships (Wu, Hart, Draper, & Olsen, 2001). This may be because student characteristics that teachers find likable (e.g. quiet or conforming) may not be the same characteristics that peers find likable since they do not facilitate playful peer interactions (Hart, et al., 2000, as cited in Wu, et al., 2001). Therefore, the measure in the current study may not reflect the same types of changes found in previous studies.

However, another hypothesis for the inconsistent findings is based on the percentage of Hispanic ELL students in the classrooms. Since over half (60%) of the students in the participating classrooms were Hispanic ELL students and another 30% of the non-ELL students were Hispanic bilingual students (making 90% total fluent Spanish-speaking students), it is likely that the Hispanic ELL students were not in fact perceived as that “different” since they were actually in the majority. In a study with different student demographics, Fuchs and colleagues (2002), investigated the effects of PALS on students with learning disabilities (those perceived as “different”), which included only 11% of those “different” students per classroom. Therefore, future studies may benefit from determining the effects that PALS has in classrooms where there is a fewer

percentage of ELL students as there is more potential for them to benefit when they are a minority and not a majority.

For the fourth hypothesis, enhanced peer relationships would be related to a higher level of reading for ELL students than non-ELL students (i.e., as seen in CBM and MAP scores), no significant effect between the correlation of ELL students' scores and non-ELL students' scores was found. This may be because no significant effects between the groups were found for the social ranking in the first place. This hypothesis was based on the assumption that greater social relationship may be more important for Hispanic ELL students, because of the value the collectivist culture puts on interpersonal relationships, which most Hispanics come from (MacPhee, Fritz & Miller-Heyl, 1996), which in turn may lead to increased self-esteem (Raghavan, 2006) and, possibly result in higher academic achievement (Liu, Kaplan, & Risser, 1992). Nonetheless, no clear conclusion can be made about the relationship between a collectivist culture and a paired program on academic achievement from the current study, so more research is needed in this area.

Limitations. There are several limitations to this study that should be discussed. First, as previously mentioned, this study did not follow the exact PALS procedure in terms of the amount of time students engaged in the PALS strategy due to scheduling purposes. In the original strategy, students are expected to use PALS for 35-minutes per day, three times per week. In the current study, students used PALS for 25-minutes per day, three times per week. Therefore, students in the current study received about 30 minutes less time per week using the strategy than planned. Because of this, the effects of the PALS program in the current study may slightly undermine the true potential of the

intended use of the PALS strategy. This may also explain the insignificant findings, because the deviation from the standard protocol resulted in a total loss of 600 minutes (10 hours) of instruction for the duration of the study.

In addition, the current study also differed from the original strategy in terms of when the students switched partners, which again was due to scheduling purposes. On some occasions, students went five or six weeks before switching partners, instead of the recommended four weeks. Therefore, students in the current study did not get as much exposure to a variety of students in their classroom as the original PALS strategy suggests and this may have impacted the students' social ranking scores.

The amount of technical assistance may also be viewed as a limitation. As stated previously, the researcher completed fidelity checks once a week in which she walked around the room to ensure the strategy was being carried out appropriately and to assist with any questions. Therefore, more assistance was provided to the students and teachers than would typically be available in classrooms not being used for research, which may restrict the ability to generalize the results to typical classroom situations. Also in regard to the fidelity checks, the researcher did not use a fidelity checklist to ensure proper implementation. Fidelity was instead determined subjectively during the walkthroughs, which may also be viewed as a limitation and should be enhanced upon in future research.

Finally, it should be noted that the PALS program did not replace solely teacher instruction. As previously mentioned, in the teachers' original schedule, they would typically give a teacher-led lesson with in-seat practice on day one, then would allow the students to work in pairs for an activity related to the lesson on day two, and would then

allow the students to attempt a similar activity on their own for day three. The lesson and activities, however, would only last for approximately 15 minutes each day (instead of 25 minutes as in PALS), so the teachers then also took away from five minutes of “read to self” time and “read to someone” time. Therefore, the PALS strategy replaced not only teacher instruction, but also some components of the students reading alone and reading to another peer. Because of this, the current study cannot attest to the PALS strategy being more effective than solely teacher-led instruction, but instead attests to a more broad approach to typical teaching strategies. Although this can be viewed as a limitation, this can also have great practical implications as many schools are beginning to move away from the typical direct teacher instructional method and shift to more alternating and interactive approaches to accommodate all types of learners. Therefore, the current study provides more insight into how PALS can still be an effective approach despite the changing practices with teachers having more than one style of teaching.

Practical Implications. The results of the current study have several implications for practice. The first pertains to reading fluency with ELL students. Results of the current study along with previous research indicate that a paired reading program, such as PALS, is an effective way to increase the reading fluency of all students, including ELL students. Therefore, the current study suggests that PALS may be especially useful for students who specifically struggle with slow or inaccurate reading skills. As discussed previously, this is likely because PALS involves research-based strategies that promote academic achievement such as enhanced exposure to reading, increased comprehensible input (in such a way that the students understand it), immediate corrective feedback, and

the use of incentives (Sáenz, et al., 2005; Fuchs, et al., 2000; Calhoun, et al., 2006; Fuchs & Fuchs, 2005).

Although the current study did not find the students in the PALS condition to exceed their peers in the area of reading comprehension skills, those in the PALS condition still improved at a similar rate. This indicates that PALS is just as effective as typical instructional methods for enhancing reading comprehension in ELL students. Since this study found PALS to be a significantly more effective strategy than typical instruction for fluency as well as an equally effective strategy for comprehension, this provides evidence for using PALS in place of typical instruction for ELL students.

However, it is ideal to find strategies that not only equate with standard instruction, but also exceed it, especially since ELL students typically have such large reading achievement gaps in comparison to their peers. Therefore, another practical implication is warranted as the results of the current study did not support the utility of PALS for enhancing reading comprehension over typical instruction. Based on a combined analysis of the current study and past research, it is possible that comprehension effects with PALS may be seen once students achieve a high enough level of fluency to begin focusing on word meanings instead of word decoding. However, the current study cannot attest to that. Instead, the findings of the current study suggest that many ELL students may begin with too low fluency skills to initially benefit exceedingly more from the reading comprehension strategies provided with PALS. Therefore, these results indicate that it may be useful for ELL students to spend more time engaging in the PALS activity that focuses on fluency (the first activity – Partner Reading) in order to more quickly attain the fluency level needed to benefit from the comprehension.

strategies. It may also be beneficial for the ELL students to receive supplementary vocabulary instruction (a secondary predictor of ELL reading comprehension; Proctor, Carlo, August, & Snow, 2005) in addition to the PALS program in order to accelerate reading comprehension more-so than with typical instructional methods. However, more research on the benefits of these adaptations of PALS with ELL students is needed.

In regard to ELL students' peer relationships, this study did not find significant effects. Again, the students in the PALS condition attained similar social ranking scores as those in the control group, indicating that PALS is just as effective as typical instruction for improving peer relationships. However, it was not shown in the current study to exceed the effects seen in the control condition. As discussed before, this is likely because of the large percentage of ELL students in the school or the type of measure. Therefore, based on an analysis of the current study and previous research, the social benefits of PALS may be optimized in climates where ELL students are a minority in the classrooms. Effects may also be more likely to be seen with peer measures instead of teacher measures. However, further research is needed and future studies should seek to expand on these practical implications to determine the most effective way to extract the benefits of the PALS program for ELL students.

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Table 1

Student Demographic Information

<i>Variable</i>	<i>PALS</i> n = 32 n (%)	<i>Control</i> n = 25 n (%)	χ^2 (<i>df</i>)	<i>Cramer's V</i>	<i>p</i>
Gender			2.02 (1)	.22	.16
Female	20 (63%)	10 (40%)			
Male	12 (37%)	15 (60%)			
Number of Languages			1.39 (1)	.19	.24
1	15 (47%)	7 (28%)			
2	17 (53%)	18 (72%)			
Primary Language			.43 (1)	.15	.51
Spanish	28 (88%)	24 (96%)			
Other	4 (12%)	1 (4%)			
Reads Everyday			.00 (1)	.04	1.00
Yes	26 (81%)	21 (84%)			
No	6 (19%)	4 (16%)			
Intervention			.05 (1)	.07	.82
Yes	12 (38%)	11 (44%)			
No	20 (62%)	14 (56%)			
Overall Proficiency			.07 (1)	.03	.80
Below 4.0	19 (59%)	14 (56%)			
4.0+	13 (41%)	11 (44%)			
	<i>M (SD)</i>	<i>M (SD)</i>	<i>t (df)</i>		<i>p</i>
Years in U.S.	7.7 (1.56)	8.1 (.40)	-1.37 (55)		.18

Note. *p < .05, **p < .01

Table 2
Teacher Demographic Information

<i>Variable</i>	<i>PALS</i> <i>n = 2</i> <i>n (%)</i>	<i>Control</i> <i>n = 2</i> <i>n (%)</i>	<i>Cramer's V</i>	<i>p</i>
Gender			.00	1.00
Female	2 (100%)	2 (100%)		
Male	0 (0%)	0 (0%)		
Highest Degree			.58	.43
Bachelor's	1 (50%)	0 (0%)		
Master's	1 (50%)	2 (100%)		
Spanish Fluent			.58	.43
Yes	2 (100%)	1 (50%)		
No	0 (0%)	1 (50%)		
Certification			.58	.43
None	0 (0%)	1 (50%)		
ELL/Bilingual	2 (100%)	1 (50%)		
ELL Training			.58	.43
None	0 (0%)	1 (50%)		
University/In-Service	2 (50%)	1 (0%)		
	<i>M (SD)</i>	<i>M (SD)</i>		
Years Teaching	6.5 (.58)	5.5 (4.0)		

Note. * $p < .05$, ** $p < .01$

Table 3

Results of the Two-Way Mixed Factorial Analysis of Variance

<i>Variable</i>	<i>PALS</i> n = 32 <i>M (SD)</i>		<i>Control</i> n = 25 <i>M (SD)</i>		<i>F</i>	<i>(df)</i>	η_p^2	<i>p</i>
Reading Measure*Program					6.45**	(55)	.11	.01
CBM					5.12*	(55)		.03
Pre-Test	65.63	(34.53)	82.96	(35.85)				
Post-Test	87.66	(33.00)	96.80	(38.69)				
Change	22.03	(14.59)	13.80	(12.11)				
MAP					.48	(55)		.49
Pre-Test	175.31	(16.61)	176.04	(12.44)				
Post-Test	182.47	(15.34)	185.12	(13.82)				
Change	7.16	(11.01)	9.00	(8.34)				

Note. * $p < .05$, ** $p < .01$

Table 4

Results of the T-test for Independent Means

<i>Variable</i>	<i>PALS</i> n = 32 <i>M (SD)</i>		<i>Control</i> n = 25 <i>M (SD)</i>		<i>t (df)</i>	<i>Cohen's</i> <i>d</i>	<i>p</i>
Social Rank					.00 (56)	.07	.50
Pre-Test	13.54	(6.26)	13.76	(6.10)			
Post-Test	13.24	(6.34)	13.91	(7.21)			
Change	-.30	(4.57)	.15	(7.48)			

Note. * $p < .05$, ** $p < .01$

Table 5

Results of Pearson's r Correlations and Z-test

<i>Variable</i>	<i>PALS</i> n = 56 <i>r</i>	<i>Control</i> n = 37 <i>r</i>	<i>z</i>	<i>p</i>
CBM	-.10	.00	-.46	.32
MAP	-.04	.06	-.44	.33

Note. * $p < .05$, ** $p < .01$

Appendix A

Parent Letter (English)

Dear Parent,

My name is Michelle Watson, and I am a School Psychology Graduate Student and Intern at the Palatine School District. I am writing to let you know that I will be conducting a research project on effective strategies for teaching reading skills, as a partial requirement for completing the Specialist in School Psychology degree at Eastern Illinois University. I am asking you to help me meet my educational goal, because I strongly believe students will benefit from the type of instruction I am proposing.

For this research, some third grade classrooms will receive an evidence-based (found to be effective) reading instruction method called the Peer-Assisted Learning Strategies (PALS) Program. With this program, the students work in pairs to practice their reading under the supervision of the teacher. Previous research has shown that this program provides students with more opportunities for reading practice than typical reading instruction and enhances their reading skills through helping one another. This program has also been shown to improve students' relationships with their peers more than typical reading instruction.

In order to measure the program's effectiveness for teaching reading, the researcher will need access to the students' progress monitoring data (data that is normally measured during the school year to make sure students are on track). And in order to measure PALS' effectiveness for improving peer relationships, the teachers will be asked to rank the students in the classroom based on their sociability. All data will be completely confidential by using numbers instead of names and no one will be allowed access to the data other than the researcher.

If you are willing to allow your child to participate in this study, please sign the attached consent form and demographic information and return it with your child to school. For confidentiality reasons, please put the completed forms in the envelope provided, seal it, and sign it across the flap. The researcher will then collect the unopened envelope from the teacher. Once again, no identifying information about you or your child will be released, only data will be reported.

Please be aware that participation in this study is voluntary. If you have questions, please contact me (mrwatson@eiu.edu or 618-267-3702), or my thesis advisor, Dr. Assege HaileMariam, Psychology professor at Eastern Illinois University (ahailemariam@eiu.edu or 217-581-2127).

Thank you for your contribution to research and participation in advancing knowledge.

A handwritten signature in cursive script that reads "Michelle Watson".

Michelle Watson

School Psychology Intern

Note: Please keep this letter for your records.

Appendix B

Parent Letter (Spanish)

Estimados padres de familia:

Me llamo Michelle Watson, y soy pasante y estudiante graduada del programa de Psicología Escolar en el distrito escolar de Palatine. Les escribo para dejarles saber que voy a hacer un proyecto de investigación sobre estrategias eficaces para enseñar la lectura, como parte de mis requisitos para la carrera de Especialista en Psicología Escolar en la Universidad de Eastern Illinois. Les pido que me ayuden a cumplir con mis metas educativas, porque creo que los estudiantes se beneficiarán del tipo de enseñanza que propongo.

Para este proyecto, algunas salas de 3er grado recibirán lecciones usando una metodología cuya eficacia ha sido demostrada con evidencia, que se llama Estrategias de Aprendizaje con la Ayuda de Compañeros (“Peer-Assisted Learning Strategies,” o PALS, por sus siglas en inglés). Con este programa, los estudiantes trabajan en parejas para practicar su lectura bajo la supervisión del maestro. La investigación anterior ha demostrado que este programa les provee a los estudiantes más oportunidades para practicar su lectura que un método típico de enseñanza, y enriquece su habilidad en la lectura al ayudarse el uno al otro. También se ha demostrado que este programa mejora las relaciones entre los compañeros de clase más que un método típico de enseñanza.

Para medir la eficacia del programa en la enseñanza de la lectura, la investigadora necesita acceso a los datos que se usan para examinar el progreso del estudiante (datos que normalmente se recogen durante el año escolar para asegurar que los estudiantes están cumpliendo con las metas establecidas). Para medir la eficacia de PALS para mejorar las relaciones entre los compañeros de clase, a los maestros se les pedirá que evalúen a cada estudiante en la clase a base de su sociabilidad. Todos los datos serán totalmente confidenciales porque se usarán números en vez de nombres, y además de la investigadora, nadie más tendrá acceso a los datos.

Si usted está dispuesto a darle permiso a su hijo para participar en este estudio, por favor firme el permiso adjunto y la información demográfica, y mándelos de regreso a la escuela con su hijo. Por razones de confidencialidad, por favor ponga los formularios en el sobre incluido, selle el sobre, y firme el sobre encima de donde se selló. La investigadora recogerá el sobre sin que el maestro lo abra. Repito, ninguna información que pudiera identificar ni a usted ni a su hijo será revelada, y sólo se reportarán datos.

Recuerde que su participación en este estudio es voluntaria. Si tiene preguntas, por favor contácteme (mrwatson@eiu.edu o al 618-267-3702), o a mi directora de tesis, Dra. Assege HaileMariam, profesora de psicología en la Universidad de Eastern Illinois (ahailemariam@eiu.edu o al 217-581-2127).

Muchas gracias por su participación en esta investigación y en el progreso del estudio.

Atentamente,

A handwritten signature in cursive script that reads "Michelle Watson".

Michelle Watson
Pasante en Psicología Escolar

P.D. Por favor, guarde una copia de esta carta para sus archivos.

Appendix C

Parent Consent Form (English)

The Effectiveness of Peer-Assisted Learning Strategies for Teaching English Reading Skills

You are invited to participate in a research project conducted by Michelle Watson who is completing her internship in school psychology at the Palatine School District. The purpose of this research project is to identify an effective method for teaching reading in the third grade.

If you agree to volunteer to participate in this study, you will be asked to:

- **Allow your child to participate in the PALS Program**
- **Allow access to your child's reading progress monitoring data**
- **Allow your child's teacher to rank him/her on their sociability**
- **Complete the "Student Demographic Information" form, which will take you approximately 5 minutes to complete**

Also, please know the following:

- **There are no risks involved, in fact, previous research has shown this program to be beneficial for both reading and social relationship improvement**
- **All information will remain confidential with regard to you and your child's identity**
- **Participation in this project is voluntary, not a requirement, and you can withdraw at any time without penalty**
- **You will contribute to research on reading success**

Please understand that if you have questions about this study, you may call or write us:

Dr. Assege HaileMariam (217-581-2127)
Eastern Illinois University
Department of Psychology
600 Lincoln HWY
Charleston, IL 61920

Michelle Watson (618-267-3702)
2480 Reflections Drive
Aurora, IL 60502

Further, the Institutional Review Board (IRB) has reviewed and approved this study. However, if you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board
Eastern Illinois University

600 Lincoln Ave.
Charleston, IL 61920
Telephone: (217) 581-8576 Email: eiuirb@www.eiu.edu

Parent's Name (please print): _____

Student's Name: _____

Signature of Parent

Date

Signature of Investigator

Date

Appendix D

Parent Consent Form (Spanish)

La eficacia de Estrategias de Aprendizaje con la Ayuda de Compañeros
("Peer-Assisted Learning Strategies," o PALS, por sus siglas en inglés)

Usted está invitado a participar en un proyecto de investigación llevado a cabo por Michelle Watson, una pasante en psicología escolar en el distrito escolar de Palatine. El objetivo de este proyecto de investigación es identificar un método eficaz de la enseñanza de la lectura en el 3er grado.

Si usted acepta ser voluntario para participar en este estudio, se le pedirá a usted que:

- **Le dé permiso a su hijo de participar en el programa PALS**
- **Permita acceso a los datos que se usan para examinar el progreso de su hijo**
- **Le dé permiso a los maestros que evalúen su estudiante a base de su sociabilidad**
- **Llene el formulario "Información demográfica del estudiante," lo cual le llevará aproximadamente 5 minutos para hacer**

También, por favor preste atención a lo siguiente:

- **No hay ningún riesgo en este estudio; de hecho, la investigación previa ha demostrado que este programa es beneficioso para la lectura así como para las relaciones sociales**
- **Toda la información será confidencial con respecto a la identidad de su hijo y la suya**
- **La participación en este proyecto es voluntaria, no obligada, y usted puede retirar su participación en cualquier momento sin ningún castigo académico**
- **Usted contribuirá a la investigación sobre el éxito en la lectura**

Recuerde por favor que si tiene preguntas sobre este estudio, puede llamarnos o escribirnos a:

Dra. Assege HaileMariam (217-581-2127)
Eastern Illinois University
Department of Psychology
600 Lincoln HWY
Charleston, IL 61920

Michelle Watson (618-267-3702)
2480 Reflections Drive
Aurora, IL 60502

Además, la Junta de Revisión Institucional ("Institutional Review Board," o IRB por sus siglas en inglés) ha revisado y aprobado este estudio. Sin embargo, si tiene preguntas o dudas sobre el tratamiento de los seres humanos participantes en este estudio, puede contactar al:

Institutional Review Board

Eastern Illinois University

600 Lincoln Ave.

Charleston, IL 61920

Telephone: (217) 581-8576 Email: eiuirb@www.eiu.edu

Nombre del padre: _____

Nombre del
estudiante: _____

Firma del Padre

Fecha

Firma de Investigador

Fecha

Appendix E

Student Demographic Information (English)

Student's Name: _____

1. Gender (please circle): Male Female

2. Ethnicity (please circle):

African American Asian Caucasian
Hispanic Pacific Islander Other (write in) _____

3. Number of Years Living in the U.S, if applicable (please write): _____

4. Number of languages spoken at home (e.g. Spanish and English) (please write):

5. The primary home language (the language that is most often spoken at home) is
(please write): _____

6. My child reads every day at home (please circle one): Yes No

Appendix F

Student Demographic Information (Spanish)

Nombre del estudiante: _____

1. Sexo (poner un círculo): Varón Hembra

2. Etnicidad (poner un círculo):

Afro-Americano Asiático Blanco
Hispano Isleño del pacífico Otro (indicar)_____

3. Número de años que ha vivido en los Estados Unidos, si se aplica
(escribir, por favor):_____

4. Número de lenguas que se hablan en el hogar (por ejemplo, español e inglés)
(escribir, por favor): _____

5. El idioma principal que se usa en el hogar (la lengua que se habla con más frecuencia en la casa) es
(por favor escribir):_____

6. Mi hijo/a lee en casa todos los días (poner un círculo): Sí No

Appendix G

Teacher Consent Form

The Effectiveness of Peer-Assisted Learning Strategies for Teaching English Reading Skills

You are invited to participate in a research project conducted by Michelle Watson who is completing her internship in school psychology at Jane Addams. The purpose of this research project is to identify an effective method for teaching reading in the third grade. As you know, reading is an important skill for school success.

If you volunteer to participate in this study, you will be asked to:

- **Complete demographic information, which will take you approximately 5 minutes to complete, and**
- **Complete a Teacher Ranking of students in the classroom, which will take you approximately 5 minutes**
- **Agree to implement the PALS program to all children in the classroom, if your class is PALS condition, or continue the regular reading instruction, if your class is the control group, and**
- **Agree for the researcher to complete integrity check periodically**

Also, please know the following:

- **There are no risks involved**
- **All information will remain confidential with regard to you as a teacher and your students,**
- **Participation in this project is voluntary, not a requirement, and you can withdraw at any time without penalty, and**
- **You will immensely contribute to knowledge.**

Please understand that if you have any questions concerning this project, you may call or write us:

Dr. Assege HaileMariam (217-581-2127)
Eastern Illinois University
Department of Psychology
600 Lincoln HWY
Charleston, IL 61920

Michelle Watson (618-267-3702)
2374 Bostic Dr., Apt. 302
Charleston, IL 61920

Further, if you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board
Eastern Illinois University
600 Lincoln Ave.
Charleston, IL 61920
Telephone: (217) 581-8576
E-mail: eiuirb@www.eiu.edu

You will be given the opportunity to discuss any questions about your rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with EIU. The IRB has reviewed and approved this study.

I voluntarily agree to participate in this study. I understand that I am free to withdraw my consent and discontinue my participation at any time. I have been given a copy of this form.

Please print your name _____

Participating Teacher Signature

Date

Signature of Investigator

Date

Appendix H

Teacher Demographic Information

Name: _____

1. Gender (please circle): Male Female

2. Highest Degree Earned: _____

3. Number of Years Teaching: _____

4. Do you have an ELL or bilingual teacher certification? (please circle all that apply):

No ELL Bilingual Both

5. Do you speak Spanish fluently? (please circle)?

Yes No

5. I have training for teaching ELL students. (please circle all that apply):

No University Course In-service training

6. I would like more training on how to best teach ELL students. (please circle one):

Yes No

Appendix I

Sample CBM Probe

“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?”

Albert was a goldfish in a bowl. He ate a breakfast of green and	14
brown flakes each morning. Then he watched the children go off to	26
school.	27
Albert hated being stuck in his bowl because he could only swim	39
around in circles. He'd rather go to school. Poor Albert couldn't even	51
read a book. The pages would get soaked!	59
Albert was quite a smart fish. He could do flips under water. He	72
could spell his name in the pebbles on the bottom of his bowl. No	86
matter how brilliant Albert was though, he still had a problem. Only the	99
cat spoke to him. And the cat was not particularly nice to him.	112
"I'll eat you up one day," the cat would tell Albert when they were all	127
alone in the house. "I'll gobble you right up. You will be surprised to	141
discover that no one will miss you."	148
It seemed to Albert that everyone loved the cat. No one seemed to	161
notice the cat was mean. No one seemed to care that the cat hated	175
books and wasn't smart. The cat couldn't even spell his own name, but	188
the children played with him every day.	195
One day the cat dipped his paw in Albert's fishbowl. To save	207
himself, Albert swam to the very bottom of his fishbowl. He hid behind	220
some rocks. When the children came home from school that day, they	232
saw the cat was wet. They didn't see Albert hiding behind the rocks in	246
the bottom of his fishbowl, and that scared them.	255
"You are a very naughty cat!" they shouted.	263
Finally one of the children found Albert hiding in the bottom of the	276
bowl. "I found him! I found our wonderful fish!" Albert felt happy that	289
his family loved him after all.	295
Now the cat gets locked in the basement every day, and the	307
children read books to Albert every night.	314

Appendix J

Teacher Ranking Form

Directions: Please rank all the students in your class based on their peer likability. For example, which student in your class do the others seem to want to play with the most? Please rank them in order with 1 being the most likable and the last number being the least likable. Thank you!

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____

Appendix K

Aimswest ROI Growth Norms

Very High	95	≥ 1.97	≥ 1.75	≥ 1.48	95
	85	1.53-1.96	1.32-1.74	1.20-1.47	85
	75	1.21-1.52	1.01-1.31	1.01-1.19	75
	65	0.93-1.20	0.77-1.00	0.87-1.00	65
	55	0.69-0.92	0.55-0.76	0.73-0.86	55
	45	0.45-0.68	0.33-0.54	0.59-0.72	45
	35	0.21-0.44	0.08-0.31	0.43-0.58	35
	25	-0.07-0.20	-0.21-0.07	0.25-0.42	25
	15	-0.52-0.08	-0.69-0.22	0.02-0.24	15
5	≤ -0.53	≤ -0.70	≤ 0.01	5	
High	95	≥ 2.10	≥ 1.81	≥ 1.54	95
	85	1.68-2.09	1.41-1.80	1.30-1.53	85
	75	1.41-1.67	1.11-1.40	1.13-1.29	75
	65	1.20-1.40	0.86-1.10	0.99-1.12	65
	55	0.99-1.19	0.64-0.85	0.85-0.98	55
	45	0.80-0.98	0.43-0.63	0.74-0.84	45
	35	0.59-0.79	0.22-0.42	0.62-0.73	35
	25	0.36-0.58	-0.01-0.21	0.48-0.61	25
	15	-0.01-0.35	-0.34-0.02	0.30-0.47	15
5	≤ -0.02	≤ -0.35	≤ 0.29	5	
Average	95	≥ 2.43	≥ 1.81	≥ 1.69	95
	85	2.04-2.42	1.45-1.80	1.47-1.68	85
	75	1.77-2.03	1.22-1.44	1.33-1.46	75
	65	1.55-1.76	1.02-1.21	1.20-1.32	65
	55	1.34-1.54	0.82-1.01	1.09-1.19	55
	45	1.14-1.33	0.65-0.81	0.97-1.08	45
	35	0.92-1.13	0.45-0.64	0.85-0.96	35
	25	0.68-0.91	0.22-0.44	0.71-0.84	25
	15	0.34-0.67	-0.09-0.21	0.52-0.70	15
5	≤ 0.33	≤ -0.10	≤ 0.51	5	
Low	95	≥ 2.45	≥ 1.94	≥ 1.78	95
	85	2.12-2.44	1.57-1.93	1.55-1.77	85
	75	1.86-2.11	1.33-1.56	1.38-1.54	75
	65	1.65-1.85	1.13-1.32	1.26-1.37	65
	55	1.45-1.64	0.95-1.12	1.16-1.25	55
	45	1.24-1.44	0.78-0.94	1.05-1.15	45
	35	1.03-1.23	0.61-0.77	0.94-1.04	35
	25	0.79-1.02	0.40-0.60	0.81-0.93	25
	15	0.48-0.76	0.11-0.39	0.61-0.80	15
5	≤ 0.47	≤ 0.10	≤ 0.60	5	
Very Low	95	≥ 1.90	≥ 1.73	≥ 1.51	95
	85	1.47-1.89	1.33-1.72	1.28-1.50	85
	75	1.24-1.46	1.09-1.32	1.09-1.27	75
	65	1.07-1.23	0.88-1.08	0.93-1.08	65
	55	0.90-1.06	0.72-0.87	0.82-0.92	55
	45	0.74-0.89	0.58-0.71	0.70-0.81	45
	35	0.58-0.73	0.43-0.57	0.59-0.69	35
	25	0.39-0.57	0.27-0.42	0.46-0.58	25
	15	0.16-0.38	0.07-0.26	0.28-0.45	15
5	≤ 0.17	≤ 0.06	≤ 0.27	5	