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Abstract

This action research study investigated the effects of the use of co-teaching on the reading achievement of students from two elementary schools in northwest Iowa. The participants were 103 elementary school students in the second through fourth grade. The sample included 52 students instructed using a co-teaching method of instruction and 51 students who were not instructed using the co-teaching method. Using STAR Reading Assessment data, a comparison of the growth in reading achievement was made between students who were taught by one teacher and students who were taught by a teacher candidate (intern) and experienced cooperating teacher (mentor) using the co-teaching method of instruction. The finding of this research did not show a significant difference in the reading achievement of co-taught students and non co-taught students.

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Action Research Report Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Education

A Case for Improved Reading Achievement Using a Co-Teaching Model

By

Jill Van Soelen

B.A. Dordt College, 1991

Action Research Report
Submitted in Partial Fulfillment
of the Requirements for the
Degree of Master of Education

Department of Education
Dordt College
Sioux Center, Iowa
May, 2015

A Case for Improved Reading Achievement Using a Co-Teaching Model

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Abstract

This action research study investigated the effects of the use of co-teaching on the reading achievement of students from two elementary schools in northwest Iowa. The participants were 103 elementary school students in the second through fourth grade. The sample included 52 students instructed using a co-teaching method of instruction and 51 students who were not instructed using the co-teaching method. Using STAR Reading Assessment data, a comparison of the growth in reading achievement was made between students who were taught by one teacher and students who were taught by a teacher candidate (intern) and experienced cooperating teacher (mentor) using the co-teaching method of instruction. The finding of this research did not show a significant difference in the reading achievement of co-taught students and non co-taught students.

The number of students lacking proficient reading skills is a concern that pleads for a solution. Reading is fundamental to school and life success, yet there are students who do not establish proficiency in reading while they work their way through their formal years of schooling. It is estimated that 10 million school-age children in the United States are poor readers (National Dropout Prevention Center, 2014). More than 40 percent of children are identified as disabled or have not met a basic level of proficiency on the National Reading Assessment of Reading Proficiency (The Learning Disability Institute, 1999-2007). Considering the affect reading proficiency has on societal success, it is important to understand, from an instructional standpoint, what factors lead to an increase in reading proficiency in order to address this public concern.

One factor to be considered for improving reading proficiency is teacher training that better equips teachers in reading instruction. Hammond (2006) noted that because of a high demand for teachers, at least 50,000 teachers each year begin teaching without teacher training (Hammond, 2006). Colleges and universities are not doing an adequate job of providing well-prepared teachers. Only 26 elementary preparation programs, out of a possible 1,668 programs, made the National Council on Teacher Quality's (NCTQ) list of top ranked programs in 2014. NCTQ addresses the inadequacy of teacher preparation programs, particularly the elementary preparation programs, to sufficiently train teacher candidates to teach reading. According to NCTQ, only 17 percent of teacher programs equip their teacher candidates to use the five key components (phonemic awareness, phonics, reading fluency, vocabulary development and reading comprehension) to teach reading instruction (NCTQ, 2014).

Therefore, one way that the issue of poor reading instruction can be proactively

addressed is by improving teacher preparation for teacher candidates. Teacher candidates need quality training in teaching reading in order to better instruct students in phonics, to screen for issues in reading, to diagnose fluency deficits and to monitor progress of students needing interventions. Training programs that connect methodology to practice can begin to resolve the issue of less-than-adequate teacher preparation for reading instruction. Teacher training programs can also offer a creative methodology for teaching that has a positive impact on reading instruction.

Traditional teacher training has consisted of a student teaching experience that seeks to connect methodology to practice, but lends itself towards a loose structure that does not focus on collaboration between the experienced teacher and teacher candidate. Traditional teacher training generally consists of separating methods coursework from practice, which contributes to a lack of clinical experience connected to the student teacher's coursework (Scherer, 2012). An alternative to this traditional student teaching experience would allow teacher candidates to have more structured and consistent collaboration with an experienced teacher.

One possible solution that may provide a better student teaching experience would be to integrate a co-teaching model into the training of teacher candidates. Co-teaching as defined by Bacharach and Heck (2010) is, "two teachers working together with groups of students-sharing the planning, organization, delivery and assessment of instruction, as well as the physical space in a classroom"(p. 7). Co-teaching was primarily introduced to classrooms via inclusive education as schools sought to meet the expectations of Individual with Disabilities Education Act (IDEA). Methods for co-teaching were initially identified by Cook and Friend (1995) whose research showed

achievement gains for inclusive education students who attended co-taught classrooms. Co-teaching, in the context of a teacher preparation program, maintains some of the same methods used for co-teaching in an inclusive classroom, but is also focused on teacher preparation through collaboration and student support.

As a result of federal legislation and policy, co-teaching has been utilized as a mode of instruction to ensure that all students have access to the same curriculum and instruction. Co-teaching in the inclusive classroom is a collaborative way to help students succeed in the classroom via planning and instruction between professionals who work together with the common goal of supporting every learner.

There is a growing body of evidence that suggests these collaborations have been successful. A study by Theoharis and Causton-Theoharis (2010) showed that, over the course of three years using co-teaching interventions, students in a Wisconsin elementary school went from 18 percent of students classified as “at or above” grade level to 60 percent.

Co-teaching has made a positive impact on the academic performance of students whose needs are being met in an inclusive classroom setting, most notably in the academic performance of students who have learning disabilities. Beninghof (2012) suggested the benefits of co-teaching are improved instruction, differentiation in instruction, students having more teacher access, better behavior management, and increased student engagement and time on task, and the support of students who are struggling but not yet identified for extra support. This finding leads this researcher to consider the impact co-teaching may have on the achievement of all students in a general education classroom. Perez (2012) found that having two educators in a classroom does

benefit students by offering more individualized attention, flexibility in lesson activities and groupings, and an increase in student time-on-task behavior. If these findings are valid, one might also consider whether co-teaching in a student teaching experience would make a positive impact on student achievement scores. Co-teaching may be a possible solution to improve reading achievement in classrooms.

Purpose of the Study

The purpose of this study is to determine if the co-teaching model does have a positive effect on the reading proficiency and achievement of all students.

Research Question

1. Does the implementation of the co-teaching model in the student teaching setting have an effect on the reading scores of 2nd, 3rd and 4th grade students as measured by the STAR Reading Assessment?

Definition of Terms

For the purpose of this study, the following definitions will be used. The definitions are the work of the researcher, unless otherwise noted.

Cooperating Teachers are licensed practitioners in P-12 schools who provide instruction, supervision, and direction for teacher candidates during field-based assignments. They are sometimes referred to as mentor teachers (NCATE, 2008).

Co-Teaching is “two teachers (cooperating teacher and teacher candidate) working together with groups of students-sharing the planning, organization, delivery and assessment of instruction, as well as the physical space” (Bacharach & Heck, 2010, p.7).

Professional Development Schools (PDS) are specially structured schools in which the P-12 school and higher education faculty collaborate.

STAR Reading Enterprise Assessment is an interactive assessment that measures student performance in key reading skills and provides information regarding the acquisition of foundational skills for reading.

Teacher Candidate is a pre-service teacher participating in teacher training through student teaching or internship. They are sometimes referred to as interns.

Internship is a clinical practice experience for teacher candidates.

Literature Review

Reading proficiency is a clear indicator of a student's future success. Reading instruction is a key element in helping students to become proficient readers. The need for improved instruction is critical as a large number of students fail to acquire basic literacy skills, evidenced by the estimated 10 million school age children in the United States who are identified as poor readers (National Dropout Prevention Center, 2014). The following literature review supports the hypothesis that co-teaching enhances reading instruction in such a way that improves reading achievement.

Co-teaching is a method of instruction that has worked in inclusive education. Inclusive education is intended to promote equal learning opportunities for all children. Since the adoption of the Individuals with Disabilities Act (IDEA) in 1990, all students have the right to free and appropriate education. The challenge of teaching mixed ability students in a general education classroom resulted in new and innovative strategies for meeting the needs of each learner. Co-teaching is one of these new and innovative strategies that has shown a positive correlation between co-teaching and academic performance. Walsh (2012) found a significant difference when he compared reading and math achievement scores between those students who were in a co-teaching environment

and those students who were not. The state assessment results indicated that the students with disabilities increased proficiency in reading at twice the rate in comparison to the rest of the sample population (22% increase versus 11%). Walsh (2012) found that the co-taught students also increased proficiency in mathematics in comparison with the rest of the sample population (22% increase versus 13%).

The variability in the quality of teacher instruction is a factor in student reading outcomes. The Learning Disability Institute (LDI), an organization that addresses reading needs in the United States, also identified the need for improving reading instruction. According to LDI, twenty percent of students need more explicit reading instruction than they are given. LDI's authors, Fletcher and Lyon (2014) suggested that more effort should be taken to ensure that colleges of education possess the expertise and commitment to foster expertise in teaching reading for pre-service and in-service level teachers.

Co-teaching is a model that has the potential to better train pre-service teachers and improve reading instruction. Darling-Hammond (2006) suggested training that supports the teacher candidate through a closer collaboration between the experienced teacher and candidate is preferred. Co-teaching fosters mentorship between the experienced teacher and teacher candidate, primarily because the experienced teacher remains involved throughout the candidate's student teaching experience (Heck & Bacharach, 2010).

Darling-Hammond (2005) also identified the need for highly effective teachers from math and reading data collected over six years. She discovered that students learning from certified teachers outperformed students learning from uncertified teachers.

Darling-Hammond reported, “The effect of an uncertified teacher reduced achievement growth for a student by up to 3 months per year” (Darling-Hammond., Holtzman, Gatlin, & Heilig, 2005). In 2003, Darling-Hammond noted that 50,000 individuals enter the field of teaching unprepared, and less prepared teachers are often given teaching assignments with the most at-risk students (Darling-Hammond, & Sykes, 2003).

The quality of the teacher matters. A recent National Council for Accreditation of Teacher Accreditation (NCATE) report cited the work of Darling-Hammond, “Measures of teacher preparation and certification are by far the strongest correlates of student achievement in reading and mathematics, both before and after controlling for student poverty and language status” (NCATE, 2008, p. 11). NCATE is a non-profit, non-governmental alliance that acts as an accrediting body for schools, colleges, and departments of education. A summary of their research on teacher preparation supports the need for better instruction for teacher candidates who can demonstrate the knowledge and skill of how to teach. An aspect found to be a key in teacher preparation was the ability to apply a better understanding of children and the strategies that are needed to motivate and engage learners.

NCATE (2008) noted professional development schools (PDS) as one type of teacher preparation program that produces successful teachers through educational partnerships. Levine (2006) stated that PDSs can “offer perhaps the strongest bridge between teacher education and classroom outcomes, academics and clinical education, theory and practice, and schools and colleges” (p. 105) These PDS partnerships invest in stronger relationships between institutions of higher education and schools where teacher candidates are trained.

Research on the impact of co-teaching in a student teaching experience was completed by The Teacher Quality Enhancement Center at St. Cloud State University over the course of four years. Bacharach and Heck (2010) showed that co-teaching is a method that provides an academic benefit to students. The data these researchers compiled showed students in grades 1-6 instructed in co-taught classrooms made higher gains in reading achievement than students instructed in classrooms that were not co-taught. Quantitative data was collected from 9,800 students using the Minnesota Comprehensive Assessment (MCA) and the Woodcock-Johnson III (Research Edition). Data was collected from 2004-2008. A random sample of students in District 742 in St. Paul, Minnesota, participated in the Woodcock Johnson III Assessment. This assessment was given to students individually in September and May from 2004-2008. The value of p in the four years ranged from .001-.024, with no greater p value than .05. In 2005-2006, that reading gain score for co-taught students was 24.4 and for non co-taught students was 18.7. Students in co-taught classrooms showed statistically significant gains in reading achievement. In addition to the random sample, the entire student population in grades 1-6 in District 742 participated in the Minnesota Comprehensive Assessment. In this analysis a chi-square was used to make a comparison where reading proficiency percentages of students are reported. The reading scores of students who were co-taught were compared to students who were not co-taught. The reading proficiency percentages of the co-taught students from 2004-2009 was no less than 75.5%, compared to the percentages of non co-taught students whose highest percentage was 74%. The chi-square analysis found a statistically significant positive effect for co-teaching on reading proficiency each year. The two assessments used in Bacharach and Heck's (2010) data

collection, the Woodcock Johnson III and the Minnesota Comprehensive Assessment, showed co-teaching to be academically beneficial for students in grades 1-6 (Bacharach & Heck, 2010).

Colleges and universities are beginning to realize the importance of co-teaching. Bacharach and Heck (2010) reported that the traditional model of student teaching in which the student teacher teaches in isolation, is no longer the best method for preparing new teachers. The researchers worked in conjunction with the teacher preparation program of St. Cloud State University and collected quantitative data using a summative assessment completed by the clinical supervisor at the end of the student teaching experience. The summative assessment was based on the ten Interstate New Teacher and Assessment Support Consortium (INTASC) standards for new teachers and was scored on a four-point Likert scale. “The co-teaching candidates outscored their peers at a level that nears statistical significance in two areas that are hallmarks of co-teaching, reflection and professional development, and partnerships” (Bacharach & Heck, 2010. p. 42). In the summative assessment, the co-teaching teacher candidates also scored statistically higher than their peers in the category of professional dispositions.

Qualitative data was also collected in Bacharach and Heck’s study (2010). Two hundred and forty-nine co-teaching teacher candidates participated in an end-of-experience survey, and one hundred and ninety-five candidates participated in focus groups. Co-teaching teacher candidates in the study responded that the benefits they experienced were improved classroom management skills, increased collaboration skills, more teaching time, increased confidence, a deeper understanding of the curriculum through co-planning, and more opportunities to ask questions and reflect. For example,

92% of the co-teaching teacher candidates noted having improved their classroom management skills. Focus groups conducted with the co-teaching teacher candidates reported positive feedback. The teacher candidates cited having an added awareness and confidence in using teacher resources, including collaboration with other adults such as paraprofessionals working in the same classrooms. In addition, a common element noted by teacher candidates was the mutual support and equal partnership between the teacher candidate and experienced teacher. (Bacharach & Heck, 2010.)

The impact of co-teaching on cooperating teachers was also examined in a qualitative study by Bacharach and Heck (2010). The 326 cooperating teachers who co-taught with a teacher candidate, completed an end-of-experience survey. The survey found that 94.5% of the cooperating teachers reported that with a co-teaching candidate, there was an increased ability to reach more students, particularly those with high needs. The cooperating teachers also reported having a better relationship with the teacher candidate, professional growth through co-planning, enhanced energy for teaching, and an ability to host a candidate without giving up their classroom. Focus groups with 107 of the experienced cooperating teachers reported the benefits of the co-teaching in student teaching model. Benefits the cooperating teacher reported in the focus groups were increased classroom productivity, completing projects more successfully, and participating in effective teamwork (Bacharach & Heck, 2010). A benefit for teachers would also be the increase in the reading achievement scores of the students.

In summary, the research in of Bacharach and Heck (2010) suggested that the co-teaching model positively impacted teacher preparation and instruction, resulting in evidence of significant gains in reading scores during the four-year study. Research

indicates there is an issue with student reading proficiency and literature suggests a need for improved methods in reading instruction. A co-teaching in student teaching model is a possible solution and therefore more studies should be done to determine the effect of co-teaching on student learning.

Methods

Co-teaching is a method for teaching training that has been proven by limited research to impact gains in student reading achievement. This study examined the impact that a co-teaching model has on student achievement in reading. Participating in the co-teaching model were teacher candidates in their final year of their teacher preparation program who partnered with an experienced cooperating teacher using the co-teaching model of instruction. The study compared student growth in reading of students who were co-taught to students not co-taught. Growth was determined through data collected from the fall and winter STAR Reading Assessment scores. The sample consisted of 103 students, 52 of the students receiving instruction in a co-taught setting and 51 students who were not co-taught.

Participants

The research participants were a purposive sample of 103 students attending grades two, three, and four from one public and one private school in the Midwest during the 2014-2015 school year. Participants included 54 female and 49 male students, with a mean age of 8.5. Students come from somewhat similar socio-economic backgrounds, mostly middle class. Thirty-three percent of the public school students represented a minority population.

Materials

The STAR Reading Assessment was the dependent variable in this study. The assessment was given at the public and private schools two times during the year using iPads or computers. The Center for Response to Intervention (n.d.) has determined that the STAR Reading Assessment is highly reliable, showing coefficient scores on generic (.9), split-half (.89) and retake (.83) tests. The Center for Response to Intervention also deemed the STAR Reading Assessment as valid, showing high coefficient scores (above .70) in comparison to other various tests such as the SAT9, Suffolk Reading Scale, and DIBELS Oral Reading Fluency (Rti4success.org, 2015).

Design

This quasi-experimental study measured the student reading achievement scores of students in co-taught classrooms in comparison to students in non co-taught classrooms. The independent variable was the classrooms where the co-teaching model was implemented with a teacher candidate and experienced teacher. The dependent variable was the growth scores on the STAR Reading Assessment. The confounding variables were gender, quality of the classroom teacher, quality of the teacher candidate, and the students' prior knowledge. There was also a natural maturation process that occurs over time that was somewhat controlled for by the original random assignment of students to a classroom.

Procedure

To conduct the study, two classrooms of the same grade, one with a co-teaching student intern or teacher candidate, and one classroom without a co-teaching student intern were identified. The STAR Reading Assessment, used as a universal screening

assessment in both schools, was determined to be the best data collection tool to assess for growth in reading achievement.

Students participated in the fall STAR Reading Assessment and the winter STAR Reading Assessment. The assessment was given by a technology teacher or by a classroom teacher, and was an identical assessment in each school. Teachers and technology coordinators administered the assessment.

Data was collected from the fall and winter STAR Reading Assessment. Growth reports from students taught in co-taught classrooms with a co-teaching student intern and growth reports from classrooms without a co-teaching student intern were accessed from each school's STAR Reading Assessment database. Permission for using the data was given by the principals of each school, and the administration or teachers provided the data.

The STAR data was gathered after the winter assessment, and the Scaled Score (SS), which is used to compare student performance over time and across grade levels, was determined to be the score that would be used for comparison between co-taught classrooms and non co-taught classrooms. Fall Scaled Scores were entered as the pretest and winter scores entered for the post-test. The change or growth scores between the fall and winter assessments were provided by the STAR Reading Assessment data. A comparison of the average reading growth between the classrooms using co-teaching with a yearlong student teacher and classrooms that did not use co-teaching with a yearlong student teacher was made.

Results

Data Analysis

The question to be answered was whether differences in reading achievement scores exist between co-taught students and non co-taught students. A quantitative analysis was conducted in which the independent variable was the classrooms where the co-teaching model was in use by the teacher candidate and experienced teacher. The dependent variable was the gain score as identified by the STAR Reading Assessment. A t-test compared gain scores between the co-taught and non co-taught students to see if there was any significant difference between groups in reading growth.

Findings

The purpose of this study was to answer the question: Does the implementation of the co-teaching model in the student teaching setting have an effect on the reading scores of 2nd-4th grade students as measured by the STAR Reading test? In order to answer this question, the research compared the reading growth of students in in co-taught classrooms to the growth of students in non co-taught classrooms.

An independent sample t-test was conducted to compare the growth of 52 students in grades 2-4 who were co-taught to 51 students who were not co-taught. There was not a significant difference in scores for co-taught students ($M=105.02$, $SD=101.14$) and non co-taught students ($M=83.92$, $SD=78.15$, $p=.19$). These results suggest that co-teaching did not have a significant impact on the reading achievement of the total sample.

Table 1*Overall Results Comparing Reading Growth of Co-Taught to Non Co-Taught Students*

Students	N	Mean	SD	df	p
Non Co-Taught	51	83.92	78.15	50	0.19
Co-Taught	52	105.02	101.14		

An independent sample t-test was conducted to compare the growth in fourth grade co-taught students to fourth grade non co-taught students. There was not a significant difference in scores for co-taught students (M=144.58, SD=131.03) and non co-taught students (M=85.72, SD=93.75, $p=.069$). These results suggest that co-teaching did not have a significant impact on the reading achievement of the fourth grade students.

Table 2*Results Comparing Reading Growth of Co-Taught to Non Co-Taught**Fourth Grade Students*

Fourth Grade	N	Mean	SD	df	p
Non Co-Taught	19	85.72	93.75	17	0.069
Co-Taught	18	144.58	131.03		

An independent sample t-test was conducted to compare the growth in third grade co-taught students to third grade non co-taught students. There was not a significant difference in scores for co-taught students (M=73.38, SD=59.73) and non co-taught students (M=70.59, SD=80.95, $p=.46$). These results suggest that co-teaching did not have a significant impact on the reading achievement of the third grade students.

Table 3*Results Comparing Reading Growth of Co-Taught to Non Co-Taught**Third Grade Students*

Third Grade	N	Mean	SD	df	p
Non Co-Taught	17	70.59	80.95	16	0.46
Co-Taught	17	73.38	59.73		

An independent sample t-test was conducted to compare the growth in second grade co-taught students to second grade non co-taught students. There was not a significant difference in scores for co-taught students (M=90.59, SD=76.46) and non co-taught students (M=88.19, SD=49.24, p=.46). These results suggest that co-teaching did not have a significant impact on the reading achievement of the second grade students.

Table 4*Results Comparing Reading Growth of Co-Taught to Non Co-Taught**Second Grade Students*

Second Grade	N	Mean	SD	df	p
Non Co-Taught	16	88.19	49.24	15	0.46
Co-Taught	17	90.59	76.46		

Discussion

Overview of the Study

Students need reading instruction that will help them become proficient and successful in society. This study was designed to answer the question: Does the implementation of the co-teaching model in the student teaching setting have an effect on the reading scores of K-4 students as measured by the STAR test? The co-teaching model is a method of instruction with the potential to improve reading achievement in learners. Co-teaching is not new to education, but has mostly been used in an inclusive education setting. In the inclusive setting, the co-teaching method has made a positive impact on the academic achievement of learners. Due to the success of co-teaching as seen in the improved achievement for learners with disabilities, this study looked at co-teaching's impact on learning achievement in the general education setting. Previous research had shown co-teaching, as part of teacher candidate training in a teacher preparation program, increased math and reading achievement in the general education classroom (Bacharach & Heck, 2010). Because co-teaching was shown to improve reading achievement, it was worthy of this study's investigation.

Summary of Findings

The growth scores of 103 students in grades two, three, and four were documented, and a comparison of the growth change between the co-taught students and the non co-taught students was made. The finding of this research did not show a significant difference in the reading achievement of co-taught students and non co-taught students.

Recommendations

There is a need for more research that investigates the implications of co-teaching in a general education classroom. This study noted the need for new methods of instruction in order to improve reading instruction, but it is important to prove the benefits of the co-teaching model of instruction if learning institutions consider whether to invest in implementing this type of instruction.

Although a significant difference in reading growth in the co-taught classrooms was not shown in this study, co-teaching has correlated with increased reading scores in other research completed on a larger scale. The larger study by Bacharach and Heck (2010) demonstrated significant gains in reading scores in co-taught classrooms. Data was collected over the course of four years and was taken from a sample of 9,800 students. Therefore, this researcher recommends the STAR Reading Assessment data be collected for a few more years so that a comparison can be made over a longer period of time. An addition this researcher recommends having a larger sample of students in the study. Due to the small number of classrooms where co-teaching strategies are implemented, data was limited for this study. As more colleges incorporate co-teaching into their teacher training programs, additional opportunities for data collection will become more readily available and provide for more valid and reliable data.

This researcher recommends professional development in co-teaching methods for schools. The training would be beneficial for general education teachers, inclusive education teachers, and teacher candidates. Incorporating co-teaching training into sustained professional development would provide teachers with an instructional method that could be used in a variety of ways. The co-teaching method could be used to allow

teachers to collaborate in a general education setting. Teachers could then co-teach certain units, concepts or subjects. Co-teaching in this context would give general education teachers an opportunity to support each other while helping students master concepts and to create a framework for better instruction through collaboration.

Professional development in co-teaching would also help teachers and para-educators working together in a general education classroom. Finally, training in the co-teaching method is helpful for experienced teachers and pre-service teachers. With a focus on co-teaching, the pre-service teacher will acquire teaching skills through collaboration with an experienced teacher. Schools that dedicate professional development time to co-teaching training will be promoting a collaborative environment focused on what schools are meant to do: offer quality instruction.

God calls the body of believers to live in community with one another, and the method of co-teaching is based on teaching strategies that require communication and relationship. "Just as the body, though one, has many parts, but all its many parts form one body, so it is with Christ" (1 Cor. 12:12,NIV). Co-teaching values building community in our schools as teachers collaborate in co-planning and co-instructing students with the common goal of supporting students in their learning growth. Co-teaching envelopes community, an important part of educating students.

Limitations

While the researcher took great care to plan and implement this action research, there were some factors that could have affected the findings. The first factor was the limited scope of this research that took place in a small Mid-western town and involved two elementary schools. This study used a sample of 103 students from grades two, three

and four. A larger sample size that included more classrooms and grade levels may have been beneficial.

Another limiting factor was that the research sought to show co-teaching as a method of instruction that would improve reading achievement, but the co-teaching pairs were not made up of two experienced teachers. The experienced teacher and inexperienced co-teacher would likely be less effective in their instruction than two experienced teachers, with the amount of variables seeming to increase.

Collecting only one year of fall and winter STAR data is another limitation of this study. Identifying student reading growth from fall to spring would be a better indication of growth, allowing more time between the pre and post data gathering points. In addition, a timeline similar to Bacharach and Heck (2010), over the course of four years, would be important to improving the reliability of the research.

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