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A Quantitative Study of Co-Teaching as an Instructional Model to Serve Elementary Students

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**A QUANTITATIVE STUDY OF CO-TEACHING AS AN INSTRUCTIONAL
MODEL TO SERVE ELEMENTARY STUDENTS**

by

Susan Gerlach, B.S., M.Ed.

Presented to the Faculty of the Graduate School of

Stephen F. Austin State University

In Partial Fulfillment

of the Requirements

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STEPHEN F. AUSTIN STATE UNIVERSITY
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ABSTRACT

The purpose of this quantitative study was to address the use of the co-teaching instructional model to serve elementary special education students in general educational classrooms. Recent trends and legislation have increased the use of inclusive education for students with disabilities. At this time, few large-scale studies on co-teaching have been conducted to date, and empirical research in terms of quantified student measured outcomes is limited. As a result, districts face challenges when considering implementation of a co-teaching model. This study used a quasi-experimental design from intact existing groups of fourth grade students on the State STAAR Reading test. Cross tabulation analysis was then merged to bring greater district-wide examination of the co-teach model. The research is intended to contribute quantitatively measured student outcomes of students in co-taught classrooms, and inform district decision makers on the co-teaching environment meeting the needs of students with specific learning disabilities.

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Finally, I would especially like to express my gratitude toward my family, for their encouragement and “get it done” attitude. My beloved husband of thirty-five years, Todd, who has had to endure less of me to give more to this journey of the love of learning, I look forward to our renewed time together. I want to express to my children, Grant and Carter, that anything is possible in life through hard work and dedication to your dream. Your lives inspire me with such joy as I have watched you grow into incredible young men. My brothers, Paul and John, whom I shared a lifetime of memories and they never fail to lend a hand or give encouragement to me; you gave me courage to continue through this endeavor. Last, to my special “BUNKO” family of friends and kids who have challenged, supported, and stuck with me along the way – thank you!

DEDICATION

This dissertation is dedicated in memory of my parents, Harold and Nettie Vetter. They were my first teachers in life, who stressed the importance to receive an education, and to follow my dreams. John Dewey's quote, "Education is not a preparation for life; education is life itself." My parents made me realize at a young age, we need to soak up and learn from every experience to continue to grow. So it is only fitting my dissertation be dedicated to all the love and support from my parents that helped me discover my passion and growth for mentoring others.

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CHAPTER I

Introduction to the Study

Introduction

During the past several decades, the delivery of instruction for special needs students has changed substantially in response to federal policies. The Education for All Handicap Children Act of 1975 mandated that students receive education in the least restrictive environment (LRE). The LRE ensures students have access to the general curriculum as students without disabilities and allows teachers to support and access students over general curriculum material (Magiera & Zigmond, 2005). Moving students with disabilities from separate schools and separate classes without their peers to inclusive classrooms with their peers slowly brought about a paradigm shift in public education. The trend has continued since then, with national attention focused on raising the academic achievement of ALL students, including those with disabilities (Friend, 2014). The inclusion of all students teaches the student and his peers that all persons are equally valued members of this society and that it is worthwhile to include everyone. The previously accepted mode of dealing with differences among people was segregation, which communicated the message we do not want to accept everyone or that

some people are not worth the effort to make the accommodations necessary to keep them included (Stainback & Stainback, 1992).

Later, the 1990 Individuals with Disabilities Act (IDEA) and its amendments of 1997 put even more emphasis on placement of students with disabilities in general classroom settings (Murawski & Swanson, 2001). Since then, the philosophy of “inclusion” adopted by districts across the nation began to rise. In 2001, Congress passed the No Child Left Behind Act (NCLB) that has placed pressure on educators to ensure all students, including those with disabilities and other special needs, meet set benchmarks measured by standardized assessments. In addition, an ambitious goal was set that all students should be proficient in reading and mathematics by the 2013-2014 school year (Stecher & Vernez, 2010).

In addition, The Every Student Succeeds Act (ESSA) signed by President Obama on December 10, 2015, includes provisions that will help ensure success for students and schools (United States Department of Education). The law requires that all students in America receive instruction at high academic standards that will prepare them to succeed in college and careers. It advances equity by upholding critical protections for America’s disadvantage and high needs students. Furthermore, information from statewide assessments provided to educators, families, students, and communities must take place. Districts are responding to these laws and ambitious goals with an all-out effort to drive higher proficiency levels among all students on standardized assessments.

Furthermore, these measures in recent years have seen a growing emphasis on teaching all learners in inclusive, general education settings. A model began to develop

as a way to achieve instructional growth for all learners through a variety of co-teach instructional approaches like one teach/one observing, station teaching, parallel teaching, alternative teaching, and teaming (Friend, 2014). Among these strategies and approaches the co-teaching model, which is an inclusion or push-in model that can include a special education, other service provider, and general education teacher in a single space was formed (Cook & Friend, 1995). For this study, co-teaching involves sharing a single general education classroom at regularly scheduled times.

With the wide variety of levels and abilities within a co-teach classroom, finding ways to close the achievement gap for all students helps us to realize a focus in our instruction must be on ways to help all students be successful (Downey, Steffy, Poston, & English, 2009). The presumption when viewing the co-teaching model is that with two teachers, within one space during instruction, move beyond the original intent for the majority of learners or help close achievement gaps within a single space (Friend, 2014). Students who struggle to learn, but who are not eligible for specialized services, also need supports to help them succeed. Furthermore, students who struggle often may dread the assignment to a special class because of a stigma assigned to it. However, co-teaching helps to reduce or eliminate this stigma by making education seamless to everyone and the class experience more successful (Barth, 2006).

As accountability for all teachers' increases, there is a need to evaluate how the co-teaching model could address this growing concern of how to close learning achievement gaps. The co-teaching model, as a method of delivery of services, offers a possibility for success of special education students remaining in the general education

setting. Furthermore, co-teaching is a “professional instructional partnership that enables educators to more readily determine students’ strengths and weaknesses, to deliver instruction and assess learning more efficiently, and to tailor activities to the exceptional needs that some students have” (Friend, 2014, p. 2).

Currently, the U. S. Department of Education reported in May 2013 identified 12.9 % of the student population in public schools (6.4 million students) with some type of disability. Within the identified population, 36 % (2.3 million students) fall in the specific learning disabilities code. The trend to educate students with special needs in general education settings in no way reduces the obligation of professionals to be sure all students receive high quality instruction, along with their special services.

Background of the Problem

Meeting the diverse learning needs in an environment focused on students’ ability to exhibit content mastery is extremely challenging (Dieker, 2001). In a time when schools are striving to improve the performance of all students, educators are searching for alternatives that will not only achieve the goals set forth by accountability systems, but also will create ways for students to achieve high academic performance. For this reason, many districts around the nation are actively looking at the co-teach model as a possibility to impact instruction and help close achievement gaps.

In a co-taught classroom, achievement gaps are typically even greater, with a wide variety of abilities all within one classroom. So instruction and concepts in the curriculum need to allow for differentiated instruction that accommodates the needs of all learners and provides appropriate levels of challenge in what and how students learn.

Co-teachers within these programs will need professional development to facilitate effective collaboration for delivering instruction, planning, and monitoring student progress of all students in the classroom. Although this study will not be addressing this area, professional development of these highly skilled teachers is equally important in the success of the co-teach model.

Despite the fact districts set forth an initiative to move towards the co-teach model classrooms by securing personnel, providing comprehensive administrative support, coupled with a strong organization structure; further study is essential to ensure an effective co-teaching model with reliability is utilized. The Council for Exceptional Children (2001) set forth constructive notes on co-teach model classrooms with the recommendation of no more than one third of the class should be students with Individual Education Plan (IEP's); the rest should be a mix of high, average, and low achieving students.

Another recommendation is for the teacher-student ratio to be dramatically reduced providing more intensive teacher/learning environment (Friend, 2014). Consequently, many districts have found the co-teach model requires the hiring of additional staff during a time in education when funding is limited. Depending on the number of special education students served on a campus, it can be quite difficult for a campus to meet the services dictated by the IEP and implement co-teaching at every grade level with fidelity.

Regardless of these problems, most educators would agree that a co-teach classroom requirement is to maintain high expectations of all students, regardless of

ability or special needs, to improve student performance. At the same time, the current data of students with disabilities in inclusion and resource programs continue to demonstrate these students struggle and perform poorly in the general education curriculum, and on state-mandated standardized tests (Friend, 2007). To date, research on the effectiveness of co-teaching as a model of instruction for children with or without disabilities has been scant, and has yielded mixed results (Murawski & Swanson, 2001). Walsh (2012) summarized data from several Maryland school districts gathered over a 20-year span of co-teaching implementation. He reported that students with disabilities who received their services through the co-teach model had improved outcomes, including state-mandated reading and math tests scores. However, not all schools implemented the same co-teaching model as the instructional vehicle. Some programs were more of an inclusive model with push-in services versus a true co-taught classroom. Push-in services refers to the special education teacher stepping into a general education class to provide specifically designed instruction to identified students.

This study contributes insights needed to address the problem of poor academic achievement of students with disabilities by looking at 4th grade students identified with specific learning disabilities currently served within a district. To further gain insight regarding the concern of improving learning for these students, Keefe and Moore (2004) argued that school administrators should adopt ideas from co-teachers to improve classroom practices for all students. In order to ensure the co-teaching model takes place with fidelity, district administrators want available data and research through which they

can establish best practices in the management of implementation of co-taught classrooms.

Statement of the Problem

The researcher noted multiple co-taught classroom models and approaches that co-teachers use in order to meet the diverse learning needs of their students. While co-teaching has the potential to improve the learning outcomes of all students, the reality is a school day is already full to provide instruction of mandated learning objectives to ground state wide assessment. In addition, with “No Child Left Behind” law, all students, including special education students, should have demonstrated proficiency in reading and mathematics by the 2013-2014 school year (Stecher & Vernez, 2010). Furthermore, The Every Student Succeeds Act (ESSA) laid the groundwork for administrators to take a more in depth look into the co-teach model.

Concurrently, there is a general lack of empirical data from research, due to the fact; co-teaching is not conducive to large scale, standardized research. As of now, co-teach classrooms vary from district to district, which makes it even more difficult to study. Although educators continue to hear that more research is necessary to reflect upon if students with disabilities learn at the same or higher rate in co-taught classrooms (Friend & Hurley Chamberlain, 2009), current research that reports empirical data is scant. Walsh (2012) reports upon further investigation of studies like the meta-analysis of quantitative efficacy research (Murawski & Swanson, 2001) and a metasynthesis of qualitative research (Scruggs, Mastropieri, & McDuffie, 2007) that agreed upon the existence of positive effects from co-taught instruction. Specifically, these studies noted

an improvement on student achievement, student perceptions of themselves, and parents' perceptions. In addition, teachers reported benefits socially as well as some academic gains of students taught in a co-taught classroom. Moreover, the co-taught model from these research efforts provides a more emotional/social lens versus hard data on the academic success of these students. Few researchers have studied the relationship between student achievement and the implementation of the co-teaching model. The lack of evaluative data from co-taught classrooms influences whether students sitting in these classrooms are increasing their academic performance, particularly those with developmental delays or specific learning disabilities.

In 2001, the Council for Exceptional Children (CEC), identified four studies in which the effectiveness of co-teaching measured some empirical data compared to a statistically controlled condition (Zigmond & Magiera, 2001). Based on the results, the CEC advised educators to exercise caution when implementing co-teaching methods due to the very mixed result of success and variety of implantation. Part of the difficulty in researching co-teaching is balancing if the push-in special education teacher is serving in an inclusion model versus the co-taught model where the general education and special education co-plan, co-instruct, and co-assess together for all students. The co-teaching model addresses the importance of the two teachers working in partnership and co-existing to plan, instruct, and assess instructional growth of their students. The study sheds further light on the role of the practitioners having many resources to tell them how to do it, but there is virtually no convincing data that tells the practitioners that the co-teaching model is worth doing.

Purpose of the Study

The purpose of this nonexperimental quantitative research study was to investigate the use of co-teaching as an instructional model to serve elementary special education students in general educational classrooms and correspondingly inform district decision makers. The research intended to inform educators about the potential and significance of the co-teach model event, as a set time built into the master schedule that allows the special education teacher and general education teacher to work in partnership. In addition, the two teachers in a co-taught classroom have the time to implement instruction together to successfully help close achievement gaps and serve special education students in general education classrooms with their peers.

While performance achievement gaps exist in local, state, and national data, the debate about this issue is complex and confusing. Data from research provides convincing evidence that there are no silver bullets, flashy new curricula, technologies, or programs that will solely be able to deliver an effective response (Downey, Steffy, Poston, & English, 2009). Establishing a well-crafted, focused, valid, and clear plan for co-teaching, with focus on taking skills from concrete to being able to apply the skills in multiple disciplines is a significant part of the fundamental work plan.

In order to examine the co-teach model as it existed in this study, a well-designed evaluation plan was constructed to measure the success of a district-wide elementary collaborative model in co-taught classrooms had on improving student academic performance. Student outcome performances on standardized testing compared between a control group of being taught in resource pull-out programs and co-taught students in

inclusive general education classrooms. These selected students all were identified with specific learning disabilities by the district and utilized to create data sets.

Even if deemed by the IEP as the appropriate service the special education student needs, missing critical instruction while receiving pull-out services continues to be a valid concern. Intentional focus between the general education and special education teachers agreeing to no new instruction or deeper discussion of academics occurring during the time special education students leave the classroom, often still leave concerns for educators that these students do miss instruction when not in the room. The risks directly related to learning during the time students are no longer in their room for their resource services continues to be a risk (Friend, 2014). Findings from this study contribute to the knowledge of issues surrounding co-teaching practices. Educators are interested in the effectiveness on improving academic achievement of special education students within the co-taught environment. In addition, district administrators research ways to enhance the success level when implementing co-teaching. Through the lens of the practitioners, educators need to begin to think forward on, “What steps are we doing that are right for kids?”

Another purpose of this study grows out of educators need to understand how to close achievement gaps by helping districts determine whether co-taught classrooms are a viable use of resources by providing powerful Tier one instruction for all students. Elementary principals look at several resources of data weekly to disclose students’ current level of achievement, and to discover practices to impact learning within general education classroom. Special education students’ performance on standardized tests,

along with their peers, states use to report the success of mastering grade level standards for each campus. With all students evaluated with the same instrument, unless significant learning deficits and cognitive ability in the State of Texas, teaching students with their peers has become an important forefront issue administrators need to address. Schools today want to find ways to increase the amount of time special education students spend in general education classrooms and improve performance/achievement of these students (Hoover & Patton, 2008). Finding a real connection of growth on standardized test scores that actually increase academic success in learning helped to determine the research question for this study.

Research Question

This study sought to answer the following research question:

Does the co-teaching model improve the academic achievement of special education students in an inclusive co-taught classroom versus special education students being served in a resource pull-out program?

Significance of the Research

As administrators within districts make decisions on whether to implement a co-teaching model on campuses; they need more profound evidence, and this study may provide statistical data to shed light on if the co-teaching model can improve student performance. A 2001 report, published by researchers Wendy Murawski and H. Lee Swanson in *Remedial and Special Education* examined databases to study the effectiveness of co-teaching. Their report claimed only six out of eighty-nine reviewed articles revealed sufficient quantitative information. Furthermore, the cursory

examination revealed a concern for an effect size in these studies being too small to calculate valid student outcomes from the conducted research. The results of Murawski and Swanson's (2001) meta-analysis showed the average effect size for all the studies in the analysis was moderate (0.4), "which suggested that co-teaching is a moderately effective procedure for influencing student outcomes" (p.7). In conclusion, a noted concern from these studies was a lack of a control group for students with disabilities.

Much of the literature rationale currently available is that students who demonstrate a failure to perform on assessments should receive immediate interventions; in a manner, that prevents failure (Walsh, 2012). With co-teaching on the rise, a healthy optimism among educator prevails due to the potential of the co-teach model being a solution to the problem of general education teachers lacking skills to educate children with learning disabilities and special education teacher lacking the content knowledge to be considered "highly qualified" to teach the curriculum. Emphasis on the "power of two" teachers in the co-teach model to implement a variety of group strategies, address individual needs of students, and take full advantage of both teaching professionals offers a scaffold support for students with disabilities. Walsh (2012); argues that "providing guidance for administrators to look for and reinforce factors critical to the successful co-teaching" is an important element in the continuous improvement model to help all students demonstrate adequate yearly progress (p. 32).

In fact, the social change on how to serve special education students implications from this study are significant about how best to use public money and accountability of the success of students. Rather than have a mixture of pullout programs and inclusive in

class support in schools throughout the country, or even within districts, this study can provide data to support the use of the co-teach model to improve student outcomes and best devote public funds to serve students. Educational legislature reform now warrants the increased need for districts to adopt co-teaching practices in full inclusive classrooms to meet the accountability standards set for students with or without disabilities (Albretcht & Joles, 2003).

Additionally, research has suggested the most effective learning takes place in the elementary grades (Blankstein, Noguera, Kelly, & Tutu, 2015). By the time students reach the high school level, students' instruction is more segmented and difficult to find the time during the school day to confront achievement gaps due to students' acquisition of credits to graduate. Hence, the emerging picture of interventions being more powerful at the elementary level makes this study more relevant to addressing this complex concern. The significance is further demonstrated based on federal laws that require students with disabilities be educated in general education classrooms with the same access and accountability as their peers to the maximum extent possible.

With co-teaching on the rise, it is imperative to research the benefits of implementation of the co-teach model and not blindly implement a model that may or may not work. The findings from this study will contribute to the body of knowledge regarding the co-teach model by comparing scores from the STAAR (State of Texas Assessments of Academic Readiness) Reading test for identified special education students in Grade 4 who are receiving their content instruction for reading in resource/pull-out classrooms or co-taught classrooms. The researcher chose the content

area of reading for this study based on National Center for Learning Disabilities (2014) report that an estimated 90% of students with learning disabilities experience problems with reading, and even the low estimates are approximately 60%.

Particularly, this study has the potential to make significant contributions on co-teaching as a mode of instructional delivery that is effective in terms of social and academic achievement for all students. Barth (2006) indicates co-teaching exemplifies the increasing importance of collaboration in public schools. Moreover, this study can provoke collaborative conversations at the campus and district level, fueling future implementation and practices that inform actions when building master schedules, creating concrete to abstract teacher table activities, designating types of data to collect, and empowering students to succeed.

Assumptions

The researcher conducted the study within one large school district. Therefore, there is an assumption the co-teaching model was implemented with fidelity consistently across campuses and grade levels. The district implemented the co-teaching model at the same time district wide with the same on-going professional development for teachers and administrators. Research has shown that part of the problem with co-teaching may be the lack of consistency in implementation of the co-teach model from class to class, school to school, and district to district (Volonino & Zigmond, 2007).

Dr. Marilyn Friend, an author, consultant, and staff developer recognized nationally and internationally for her work in collaboration and co-teaching by The Council for Exceptional Children, has provided training to administrators and co-teachers

before, during, and continues to support professional development of the adopted Elementary co-teaching model initiative within the district in this study for the past four years. The support from Dr. Friend helped ground the study that the co-teaching model implemented shared common characteristics that resulted in consistency within the district. Dr. Friend provided feedback, worked with administrators and teachers, reviewed data, and visited campuses to help ensure the fidelity of the co-teaching model was consistent across campuses.

The second assumption was that the data collected from archival standardized testing on the 2016 STAAR Reading Test is an accurate measure of student success and that each teacher administered the STAAR in the same manner as required through training. Without this assumption, differences in STAAR Reading raw scores between the two groups could show bias by the teacher's method of administering and would not contribute to a classroom model of instruction. Likewise, the assumption is that the standardized score by participants in the study can accurately portray student learning on content knowledge of students taking the STAAR Reading test. Zigmond (2006) referred to reading as a skill vital to a student's overall academic success in throughout their schooling.

Students throughout this district were placed in a variety of programs from pull-out resource classrooms, co-taught classrooms, push-in/in class support, and pull-out services to support their instruction. This study used fourth grade identified special education students with specific learning disabilities within a district in the Dallas – Ft. Worth, Texas (DFW) area. Campus administrators were given the responsibility through

the Individual Education Plan (IEP) committee process to determine which students should be assigned to the co-taught classroom based on the district co-teach model being implemented on that campus. Students who were homebound, primary disability identified as speech impairment, intellectually disabled, other health impaired, emotionally disturbed, autism, served through inclusion push in model, or in residential treatment, were not included in this study. Only students identified as students with a specific learning disability in co-taught inclusive or resource pull-out classrooms are included in this study.

Finally, this quantitative research based upon the epistemology of a post-positivistic social science research theory in which the measurement reliability means the numerical results do not vary because of characteristics of the measurement instrument or process was used (Neuman, 2011). The ratio-level measurement allowed the variable attributes measured to be determined, and there is an absolute zero. The primary use of sampling in this study is to use archival representative sample that closely represents features of interest in the population (Neuman, 2011). The assumption was that this is an acceptable form of research and research theory to use when utilizing archival data to report findings.

Limitations

Limitation to this type of design include the concern that researchers are looking for themes, seeking only the information leading to the support of the investigation, and it could contribute to researcher bias (Deal & Deal, 2007). In addition, the researcher's awareness that statistical information sometimes are misrepresented, leads to careful

consideration of the facts as they present. The key question for this study is whether we can accurately generalize from what we learn from the data to a multitude of co-teach models implemented throughout the country.

The scope of this study includes one school district and fifteen co-taught classrooms and fourteen resource classrooms with participant in fourth grade in the DFW area. Thus, due to this selected sample, generalizability of the results may be limited. The decisions made by each IEP committee for services in a co-taught inclusive or resource pull-out setting were not available to the researcher. Each campus IEP committee made the decision based on individual characteristic of that student to determine service. The thought and decision making of these committees were not a part of this quantitative study. During IEP meetings, each committee, after they determine goals, make a decision on where services will occur.

The DFW district in this study invested in providing on-going professional development the past three years as they transitioned and implemented this model for the general and special co-teach educators, administrators on each campus, and central office staff to continue to grow the co-teach model within each of its Elementary and Intermediate campuses. Utilizing the Baldrige continuous model as a basis for implementation of co-teaching within the district in the study, and working in partnership with Dr. Marilyn Friend for on-going professional development to ground this study. As a result, the overarching goal of co-teaching within this district is to enable students with specific learning disabilities to access the same curriculum as their peers and achieve equally high standards that make the effort eminently worthwhile.

Since the dependent variables use archival data, the lack of control of already recorded data, there are inherent weaknesses. The most notable limitation was the fact that this study used a quasi-experimental design and did not use random assignment or a pretest and a posttest (Neuman, 2011). Also, selection bias could arise due to the one group of participants in the study have only been identified as students with a specific learning disability, but their individual testing details were not available or a part of this study.

Based on research that indicates over 90% of students identified as having a specific learning disability have some identified reading difficulties, the STAAR Reading test for fourth grade students in co-taught treatment classrooms the researcher used to focus and ground this study. While a more in depth study that provides both formative (quizzes, tests, CBA's (curriculum based assessments), etc.) along with summative data (STAAR end of the year assessment) from multiple years would provide a more in depth views about students' performance, the undertaking of this type of wide study data was not available to the researcher.

Definitions

In order to gain a great depth of understanding, the basic conceptual definitions provided in this section gives greater clarification to this study and provides the reader with an understanding of key terms used throughout. The reasoning behind clarification of terms is to ensure the fidelity.

Co-teaching.

A system in which two or more professionals deliver substantive instruction to a diverse, or blended group of students within a single physical space. This teaching involves special and general educators who are responsible for all the students' instruction, assessment, and behavior management. Co-teaching is often referred to as collaborative teaching or as a team teaching approach. The rationale is that the general education teachers are content specialist and special education teacher are learning specialists: together these teachers can serve classrooms of diverse students to help all students be more successful (Cook & Friend, 1995).

General education.

A student lacking physical or mental disabilities that would affect his or her learning is educated in general education classrooms (Demeris, Childs, & Jordan, 2007). For the purpose of this study, general education refers to a classroom led by a certified teacher who does not necessarily have special education qualification. The classroom may or may not include students with disabilities. The content of instruction is following the curriculum mandates set forth by the Board of Education in that state.

Special education.

As defined by IDEA (2004), instruction by special education teacher meets the specially designed component, at no cost to parents, to meet their child's unique needs. Specially designed instruction means adapting the content, methodology, or delivery of instruction. It can include instruction conducted in the classroom and in other settings.

School systems must ensure that a continuum of alternative placements is available to meet the needs of children with disabilities in the least restrictive environment.

Inclusion.

Students with disabilities considered full inclusion when all their services provided are within the general education classroom. Partial inclusion includes removal of the student with disabilities at times for related special education service like occupation therapy or physical therapy (Smoot, 2004).

Specific learning disability.

According to IDEA, (SLD) is a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such terms include such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (National Center for Learning Disabilities, 2014, p. 2).

Inclusive education environments.

Settings where diverse groups of learners feel welcomed, learn from each other, and are actively engaged in a setting that promotes success for learners with and without disabilities to achieve at a higher level (Lawrence-Brown & Sapon-Shevin, 2014).

Organization of the Study

Chapter I provided an introduction to afford an overview of this study. The theoretical framework for the study articulated in this chapter will help to ground the study. While co-teaching has the potential to improve the learning outcomes of all

students, primarily the instruction implemented to improve learning opportunity for students who have disabilities so they remain in class with their peers. Given that co-teaching is increasing in popularity, more statistical research needed to determine if co-teaching is a viable effective model at increasing academic performance helps district decision makers make more informed choices.

Chapter II presents a review of related literature on the foundations of co-teaching, clarity of definition of the model, need for statistical data, and empirical studies reviewed. Chapter III outlines the purpose for this study, including the study design and approach, instrumentation, participants and the setting, the role of researcher, procedure used for data collection and analysis. Additionally, Chapter III presents the study design, research question and null hypotheses, method of procedure for this study, including the study design, research questions and hypotheses, instrumentation, participants and the setting, procedure used for data collection, data analysis, summary, the provision for trustworthiness of the study, and how the researcher will report the findings. Chapter IV presents the findings including statistical analysis tables. Chapter V includes a summary of the study and the conclusions, implications, recommendations for further study, and final reflections.

CHAPTER II

Review Of Related Literature

Introduction

This section focuses on the extensive reviews of literature regarding the foundations of co-teaching, further clarification of the definition of co-teaching, the need for statistical data, and empirical studies reviewed to help ground this study. As districts strive to meet the increasing needs of all students on high stakes accountability testing, they are responding with an all-out effort to drive higher proficiency levels among all students. Because of data showing performance of special education students making minimal gains on state wide assessments, the foundation for emphasis on teaching all learners in inclusive, general education settings, which can include a special education and general education teacher in a single space like the co-teaching model began to emerge (Cook & Friend, 1995).

Historical Foundations of Co-teaching

Currently in the United States, all students have the right grounded in law to have access to an education on an equal basis in national policy (Hardman & Dawson, 2008). Historically however, the inclusive environment or co-teach prior to 1975 had not been the model in use. When researching from 1975 until 2001, educational practices for

students with disabilities guided by federal special education and civil rights laws were used (Friend, 2014). As a result of the Individuals with Disabilities Act (IDEA) and Section 504 of the Rehabilitation Act of 1973, questions arose among educators and families about the rights of students with disabilities, the procedures through which decisions were made, strategies to assess growth, or the services they were entitled to began to be clarified through litigation (Friend, 2014). Effective programming for students with disabilities under these mandates required educators to understand how specifically designed instruction for special education students takes place.

One of the most significant changes during this time was the requirement that students with disabilities have access to the general education curriculum. The general education curriculum in this study refers to the same curriculum established for students without disabilities. The implication of PL 94-142 and IDEA laws was not only the ending of discrimination against students with specific learning disabilities raised by complaints, but the integration of these students with their non-disabled peers that is educationally beneficial to them (Alstchuld & Downhower, 1980). The laws further specified that students with disabilities had a right to be involved and progress through the general education curriculum if the student can withstand the challenge of using grade level materials (Pullin, 2008).

While IDEA stated we should start with the regular classroom as the least restrictive environment, in reality students are often times placed in very restrictive educational situations and asked to “earn” their way into general education classrooms (Murawski, 2003). Parents and students are reluctant to accept placements in co-teaching

classrooms when they are accustomed to their child being served in a self-contained resource class. The IEP team legally and ethically assesses the needs and abilities of the students to determine the best way to serve each student.

In order for public schools to meet standards of compliance for Individuals with Disabilities Act (IDEA) to encourage the placement of student with disabilities in general classroom settings, districts began the challenge for schools to determine how educators can provide individualized and specialized instruction (Murawski & Swanson, 2001). Around the country, schools began to implement programs in more inclusive environments with push-in models or co-taught classrooms. Within elementary schools, you also began to see co-taught classrooms, often during reading and math instruction, so that flexible grouping or individualized instruction can occur. The co-teaching model in middle and high school looked a little different in that occurrence in any subject or level in which diverse learners are enrolled (Friend, 2008). Yet, the beginnings of co-teaching model as a perfect fit for strengthening the collaborative skills of educators, who will be accountable for all students in today's diverse classrooms, was born.

Co-teaching Defined

Co-teaching, according to Lerner (1997), is a process in which the general and special education teachers put into action instruction that covers the state curriculum ensuring that students with disabilities meet the state requirements. Murawski (2003) further elaborated to define co-teaching as collaborative instruction in which general and special educators act as co-equals to deliver instruction to all students in an inclusive setting. In addition, Murawski (2003) elucidated that true co-teaching occurs when a

general education and special education teacher work as partners to teach a diverse group of students within a single physical setting.

Similarly, Friend (2008) argued that co-teaching presumes that both educators actively participate in the delivery of instruction, share responsibility for all their students. Since general education teachers work with various specialists to aid their students, a partnered approach became the foundation of co-teaching for one to consider when working with students identified with specific learning disabilities within a general education classroom. Co-teaching can be accomplished, according to Friend and Cook (2013), by using one of the six specific approaches from one teach/one observe, station teach, parallel teach, alternative teach, teaming, and one teach/one assist to help improve the learning outcomes for students with disabilities. Each of these strategies has identified areas of strengths to help provide strong tier one instruction and improve learning outcomes for all students. Additionally, Friend (2008) emphasized, “in co-teaching, the exact contribution that each person makes may vary, but together the educators create a learning situation that cannot be produced by a solo teacher” (p. 9).

Friend & Cook (2013) claim the use of approaches like one teach/one observe, station teach, parallel teach, alternative teach, teaming, and one teach/one assist to help to maximize the learning outcomes for all students within co-taught classrooms. Notably, each of these strategies has research to identify areas of strengths to help provide strong tier one instruction within classrooms. Some similar models Dieker (2001), included for use within a co-taught classroom, include models of lead/support, station teaching, parallel teaching, alternative teaching, or team teaching strategies to help guide in

planning, instruction, and assessment. Co-teachers that work effectively in the use of collaborative strategies, using a model that matches the focus of a particular instructional lesson, begin to transition to the true power of two teachers working together to serve their students in a co-taught classroom. Together the co-teachers monitor their students' growth and academic success. Thus, the true power of the co-teach model!

A Need for Statistical Data

Current legislation and policies, with a focus on student academic achievement, high stakes testing, and highly qualified teachers have all had a significant impact on the education of students with disabilities. Districts around the country are seeking ways to implement comprehensive systems that will lead to stronger learning for those struggling with learning and behavior problems in public schools (Hoover & Patton, 2008). The division between general education teachers and special education teachers who sometimes view their roles as independent from each other versus in partnership is noted. However, results from No Child Left Behind (NCLB), found many interventionists are now required to eliminate or cut back on the amount of time special education students are served outside their general education classroom (Sims, 2008). Plus, today with the passage of ESSA in 2015, educators are trying to figure out how to provide high accountability standards for high needs students sitting in classrooms.

Therefore, today's teachers are expected to meet ever-increasing demands with a wide variety of abilities in the classroom, so motivation and self-efficacy are important areas to investigate when looking upon the co-teaching model. Pratt, Imbody, Wolf, and Patterson (2016) identified that the amount of research of effective co-teaching and its

characteristics are limited. The majority data is qualitative talking more about how the participants in co-taught classrooms feel from their perspective as the general education teacher, special education teacher, student, or parent. Therefore, the co-teaching model referred to in this research is specifically grounded in the collaborative effort between general and special education teachers to serve the special education and general education students placed in co-taught classrooms for all learner to have successful outcomes.

Empirical Studies Reviewed

The act of having two teachers within in one classroom with smaller student to teacher ratios suggests that co-teaching should result in a powerful teaching and a learning environment in which diverse learner's needs are more readily met. However, the emerging picture of co-teaching is far more complex when you look at research on this subject. Scruggs, Mastropieri, and McDuffie (2007) reviewed 32 qualitative studies of co-teaching that found that general and special educators reported positive perceptions of co-teaching, but made note of a wide variety of support that needed to be in place to be effective. These authors also found that special educators were more likely to serve primarily in roles that approximate those of a paraprofessional, rather than roles of collegial peers.

Shedding further light on examination of the administrative climate in matters related to co-teaching is the Salisbury and McGregor (2002) study on the administrative context and climate of five successful elementary schools with inclusive programs in three states. They used observation on site, school climate questionnaire, interview with

principal, and did find some shared elements that were pivotal to the success of the co-taught classrooms. The principals for these schools were risk-takers who were committed to the program. They were also intentional in their goals, reflective on progress, and did not let obstacles divert their efforts. Shared insights from the principals in this study indicate more rigorous study is need as they continue to work to overcome any challenges they encounter. Very little research is available for these administrators to use as a framework. For that reason, each administrator shared insights that the students within a co-taught classroom have a wide range of ability, thus adapting to new challenges requires intentional planning on the part of teachers and administrators.

Similarly, other research available shows studies that explore the student and family perceptions of co-teaching have some positive and puzzling findings. One such study conducted by Hang and Rabren (2009) included 31 general education and 14 special education teachers who taught together in co-taught classrooms. The classes were grades 1st through 10th grade that included students identified with learning disabilities, speech impairments, and five other disabilities with the rest of the class general education students. Through observations, survey, and review of student records; the findings resulted in overall positive indication that students with disabilities improved significantly from prior year non co-taught classroom data when no co-teaching occurred.

Although these students with learning disabilities received services from pull-out to in class support, the data indicated greater growth occurred for these students within the co-taught classroom. These students' achievement scores in reading, math, and language arts aligned more to other students in their grade level. Deeper insight garnered

from this study found the special education teacher, more so than the general educator, felt students within the classroom received sufficient support to be successful.

Interestingly the researchers also found student absences were higher in co-taught classrooms, and students with disabilities had more discipline referrals when compared with peers.

When looking at a secondary perspective of the co-teaching model, the Magiera and Zigmond (2005) study reported in their findings of middle school students that the students with disabilities in co-taught classrooms actually received less attention than they did when they participated in general education classes taught only by the general education teacher. Hence, educators began to realize the model of implementation and the compatibility between teaching partners is critical to the success of students within co-taught classrooms. In other words, the importance of special education teachers having content knowledge to teach the material and active partnership between co-teachers plays a pivotal role in the success in co-taught classrooms.

Ashton (2003) surveyed 24 teaching pairs of teachers (24 general education and 24 special education) during a two-day professional development in-service. He surveyed the pairs asking about their biggest concerns with the co-teaching model. Co-plan time cited by the teachers included having a common plan time being significantly important to the success in a co-taught classroom. Providing additional instructional support or just having a special educator to help the general education teacher is not the acceptable exemplary model of co-teaching Friend (2014) refers to when speaking of the preferred co-taught model. Allowing for co-plan time and utilizing one of the six specific

instructional approaches within a co-taught classroom are powerful tools the researcher identified in this study to help students make real instructional gains.

Another study by Rea, McLaughlin, and Walter-Thomas (2002) compared the academic achievement of students in inclusion classes and resources classes. In their research findings, the eighth grade special education students in the co-taught classroom showed an increase in achievement on standardized examinations as compared to the students taught in the resource classrooms. The co-taught classroom in the study was shown as effective, positive, and encouraging in the middle school setting. However, their study did not indicate how all students performed in comparison to their peers in non-co-taught classrooms, nor the effective methods of co-teaching that increased the students' achievement.

Despite a lack of hard data, anecdotal evidence suggests that co-teaching is an effective and positive mode of instruction for students with and without disabilities as Keefe and Moore (2004) found in several studies of co-taught classrooms at the high school level focused on interviewing high school teachers regarding co-teaching. The research shed light on the co-teaching model by questioning co-teachers on their attitudes of the effectiveness of the co-taught model. In summary from their research findings, the special education and general education teachers in co-taught classrooms report many positive qualitative responses in various studies reviewed by the researchers, but these studies fail to report on quantitative data that supported student instructional growth of all students within the co-taught classroom. Additionally, the research findings from this study indicate an inability to coordinate schedules within secondary schools to support

co-taught classrooms, due to the needs of the identified students with specific learning disabilities and availability of staff to support co-taught classes as a major issue.

Ultimately, scheduling and having the staff to support the co-teach model most likely contributes to a lack of ability to establish a co-taught planning time for the co-teachers which further challenges effective instruction (Dieker & Murawski, 2003).

Specifically, rationality suggests that helping co-teachers plan and provide a framework of best practices should result in a powerful teaching, and a learning environment in which diverse student needs can readily be met to help close achievement gaps of all students. Correspondingly, those that have examined academic achievement of students within co-taught classrooms often depend on the working relationship between the two teachers (Mastopieri et al., 2005). As Friend (2007) conveyed, finding a straightforward way to provide educational opportunities to students with disabilities requires careful attention to preparation and implementation.

Summary

Chapter II presented challenges in research on academic and related outcomes for students with specific learning disabilities within co-taught classrooms. The research-purported information laced with data splattered across primarily gathered data about the teacher or student perceptions of co-teaching. When examining co-teaching programs and how implemented in all levels of schools, an educator better understands the need for further research. The variety of schools from urban, suburban, or rural communities' well-funded or underfunded each show a different balance of students served within the space. Furthermore, if a co-teaching program provided adequate common planning time

for the teachers, and focused on building the co-teaching partnership that evolves over multiple years of shared instruction will lead administrators that make decisions to strengthen expectation, arrange supports, and actively foster co-teaching as part of the school's delivery system.

In many ways, co-teaching research has a great potential to provide strategies for improving the achievement of diverse learners. Research cautions educators to be careful the instruction is not at the expense of those other general education students sitting in co-taught classrooms. The emerging research base does indicate it is far more complicated to find the most effective instructional practices. The co-teachers need to find the time to deliver specific designed instruction for students within the co-taught classroom as mandated by law. Keefe and Moore (2004) claimed meeting the needs of all learners entails a supportive teaching rapport between the co-teachers. These critical issues for the teachers cluster around three major areas: the nature of collaboration, roles and responsibilities, and outcomes. In addition, building the co-teacher partnership, and find the administrative support to provide a quality co-taught program with fidelity across classrooms within a school district makes for many challenges.

The judicious implementation of the findings from this study, ground from the need revealed in the literature reviewed demonstrated further research might be indicative of success in future educational decision making for consideration of services provided. Thus, the hope is the research could provide a lens in which educators use on how to best serve specific learning disability students on their campus, either within a co-taught classroom or resource pull-out program. Chapter III in this study provides information

that includes the study design, research question and null hypotheses, method of procedure for this study, including the study design, research questions and hypotheses, instrumentation, participants and the setting, procedure used for data collection, data analysis, and summary.

CHAPTER III

Methodology

Introduction

All educational inquiry ultimately involves a decision to study or describe something. Researchers have sought to find answers to concerns that arise in their practices and determine relationships between variables. This section outlines the study design, research question and null hypotheses, instrumentation, participants and the setting, procedure used for data collection, data analysis, and summary. This research study will utilize a quantitative approach, first emerging in the late 1800s and dominating research design through the twentieth century (Creswell, 2008).

Restatement of Purpose

The purpose of this nonexperimental quantitative research study was to analyze the academic achievement of elementary student identified with specific learning disabilities taught in co-taught inclusive classrooms in relationship to those taught in resource pull-out classrooms. The performance indicators examined were the State of Texas Assessments of Academic Readiness (STAAR) Reading test. Students' raw scores who received reading instruction in inclusive classrooms with the co-teaching model of instruction were compared to non-participant scores when instruction was provided in a

resource pull-out program. Additionally, the investigation conducted identified any differences in student achievement between those two models of special education services delivery.

The quasi-experimental design in this study used intact groups to help determine performance achievement of fourth grade identified specific learning disability students on the STAAR Reading test in the co-taught treatment classes with their peers, as well as students taught in resource pull-out education classes within one school district at multiple campuses. Neuman (2011) explained quantitative research as a technique in which produces data in the form of numbers. The researcher in this design does not manipulate the variables, but will use existing data to report the effects of one variable on students within the co-taught treatment and students taught in general education classes. The quasi-experiment model is the best design for this study because randomized assignment was not possible (Creswell, 2008).

Study Design

Creswell and Plano Clark (2011) expressed, “research designs are useful, because they help guide the method decisions that researcher must make during their studies and set the logic by which they make interpretations at the end of their study” (p. 53).

Quantitative research design stresses the view that statistics help provide a tool to use with collection, organization, and analysis of numerical facts to present information in a convenient, usable, and understandable form (Neuman, 2011). In the same way, Plano Clark and Creswell (2010) professed in quantitative research; researchers can use groups that exist naturally or already formed to frame a study, such as students grouped in

classrooms. Likewise, quasi-experiments in general are a type of experiment that uses intact groups. The researcher in a quasi-experimental design assigns groups to the different conditions, but does not randomly assign individual participants. In addition, randomly assigning students to groups is not possible due to the potential to disrupt the learning environment.

In particular, the advantage of quasi-experiments is for the researcher to be able to use existing groups to gather data. Plano Clark and Creswell (2010) noted that the use of these intact groups introduces the possibility of other outside influences that might explain different outcomes. Despite the fact that one cannot draw strong conclusions about cause and effect from quasi-experiments, the researcher for this study determined this design best fit to compare the treatment in specific classes, at different schools, within one school district. The researcher verified the teachers within each setting had received similar design and training within the co-taught classroom. Additionally, the researcher used the design in the study that allows the manipulation of the conditions experienced by the students in the different settings. One group of classes being provided the co-teach treatment, while the other classes are built with diverse learners in the resource special education setting within their grade level.

Another aspect of quantitative research is the use of descriptive statistics to help report the findings from a study. Grinnell (1997) reported descriptive statistics describe and summarize a variable(s) of interest, portray how it distributed within a sample, or population. In addition, Gay, Mills, and Airasian (2012) referred to statistical data allowing the researcher to use a set of procedures for describing, synthesizing, analyzing,

and guiding interpretation from collected data. Descriptive statistics data enables a researcher to use mathematical formulas to indicate the average scores of a group of students. An example, if a class of third grade girls' scores higher on a reading test than boys in the same class, statistics can tell us if this difference is significant enough to determine if additional help for students may need to be put in place. A quantitative study uses the statistical information as a framework to report their findings and determine differences.

Keeping all this mind, Deal and Deal (2007) further described how statistical methods allows the researcher to determine patterns in data that may model a randomness that is then used to draw inferences. In fact, they explained not a day goes by that people are not viewing statistical information in news reports, advertisements (four out of five dentist use Crest), or the results of a survey. Researchers found descriptive statistics have some common key descriptive procedures. As Plano Clark and Creswell (2010) defined the importance of descriptive statistics as tools to help researchers summarize the overall tendencies in the data, provide an assessment of how varied the scores are, and provide insight into where one score stands in comparison to others. Data analysis techniques using descriptive statistics enable a researcher to describe many pieces of data meaningfully with numerical indices. Rigorous, high quality studies result from research with established procedures and data considered descriptive.

In quantitative research, we think about the variables, attach them to specific actions during a planning stage that is before, and separate from, analyzing the data (Neuman, 2011). The comparable groups determined by the researcher then undertake a

statistical analysis that can include programs available on the computer to compare your data. Researchers must select the statistical test that is appropriate for their study. Gay et al. (2012) indicated there are many parametric and nonparametric tests of statistical significance. However, the main tests fall into two categories: those used to compare groups and those used to relate variables. Some of the common statistic tests for comparing groups are t-test, analysis of variance (ANOVA), analysis of covariance (ANCOVA), and Chi square.

Researchers must consider the type of question addressed, comparison or relationship. Other factors to take into consideration during the research include the number of independent and dependent variables in their hypotheses, and whether data for each variable is measured (Plano Clark & Creswell, 2010). Once the researcher selects a statistical test, they can now use a computer to calculate the statistic that corresponds to that test. Researchers may use a t- test or ANOVA one-way analysis of variance for a difference between two groups in terms of one dependent variable. An example application would be comparing girls and boys on time spent reading and their academic performance outcomes. The researcher used a quantitative research model, using ANOVA one-way analysis of variance, to answer the research question. Many of the empirical studies reviewed by the researcher were more heavily qualitative studies versus quantitative, leaving a gap in literature to determine if the co-teach model increases academic performance in comparison to the pull-out resource model of delivery of instruction in the non-participant group.

Research Question and Hypotheses

This study seeks to answer the following research question:

Does the co-teaching model improve the academic performance of special education students in an inclusive co-taught classroom versus special education students being served in a resource pull-out program?

The research hypotheses include:

H₁ Specific learning disability students who are co-taught score, on average, higher than those in resource pull-out classrooms.

H₂ There is a statistically significant difference in student academic performance on the STAAR Reading test when using the state standard raw score average between the co-taught and resource group of students.

With supporting evidence, the researcher stated the following null hypotheses:

H₀₁ Specific learning disability students who are co-taught did not score, on average, higher than those in resource pull-out classrooms.

H₀₂ There is no statistically significant difference in student academic performance on the STAAR Reading test when using the state standard raw score average between the co-taught and resource group of students.

Instrumentation

The instrument utilized in the study was the State of Texas Assessments of Academic Readiness, commonly referred to as STAAR (star), is a series of state-mandated standardized tests used in Texas public schools grades 3-8 to assess a student's achievements and knowledge learned in the grade level. STAAR measures how well the

students have met the expectations outlined in the grade level Texas Essential Knowledge and Skills (TEKS). Additionally, the Reading test design to measure reading comprehension on a set of fourth grade student expectations. Pearson Education developed the test, along with close supervision of the Texas Education Agency (TEA).

Schools receive funds from the state of Texas, which require these standardized assessments for all students enrolled in public schools. Only schools not receiving monetary support from Texas are exempt, like private schools. The passing standard set by TEA includes a current phase in system in place for final standard of passing. This study used only the performance raw score passing standards. These tests include a 4-hour limit, unless noted as an accommodation on a student's Individual Education Plan (IEP) to have extended time. The researcher did not have access to each student's IEP in the study, so accommodation for extended time for students in either group are not included. The tests are multiple-choice exams in Reading for fourth grade, administered in the spring 2016.

Student's score released by the state to each district include reports for campuses and students. The Texas Education Agency requires reliability and validity studies. The validity of the test in providing fair and accurate ability scores that support meaningful, appropriate, and useful academic mastery of concepts is reflected in several sections of the report. The STAAR test supported through the involvement of teachers, curriculum experts, committee members, and other state educators in the item development process support the validity of the instrument. The reports display differential subgroups,

students administered, item difficulty, and overall percentage each student scored on the current passing standard.

The researcher examined the raw score academic achievement data to determine if there are specific qualities or criteria in the co-teach program or campus setting that provide for more student success. In this study, the researcher analyzed the dependent variable of students' standard raw score on the STAAR Reading test. The grouping variables were the nature of students identified with specific learning disabilities taught in co-teach or resource classrooms. The control variable was fourth grade level participants within one school district at multiple campuses. This design encouraged making sure that the two groups (instructional interventions) are as similar as possible in relations to a variety of characteristics that may influence the dependent variable of interest. The study used a nonequivalent posttest control group design because the groups were not randomly assigned and each group took the same posttest with only one group (the co-teach group) receiving the treatment of co-teaching (Creswell, 2008).

The Participants and the Setting

The study participants must meet the criteria of identified as a student with a specific learning disability from one of the multiple elementary campuses within one school district in Texas. Each of these campus administrators and teachers received training in the implementation of the co-teach model. Participants' raw performance scores used to verify academic reading achievement by evaluating the identified special education students' performance on the STAAR Spring 2016 fourth grade Reading Test. Furthermore, STAAR A, an accommodated online version of STAAR was available for

students identified with specific learning disabilities on the spring 2016 fourth grade Reading Test. However, STAAR A has embedded supports designed to help students with disabilities access content with accommodations that vary from those students taking the STAAR test. These embedded supports in STAAR A include visual aids, graphic organizers, clarifications of construct-irrelevant terms, and text-to-speech functionality. Although, the passing standards for STAAR A are the same as the STAAR, the variance in supports of this online test version would not ensure reliability between data collected. The researcher did not use students who took the STAAR A test due to the differences that students have embedded in this online test.

Identified special education students whose primary disability is “specific learning disability” all received fourth grade instruction before taking the STAAR test, whether in the co-taught inclusive or resource pull-out classroom, which will be used for comparative control purpose and homogeneity of variance. By narrowing the population focus in this study, the confidence interval estimated range calculated from the two student groups is set. Although other identified special education students exist within the district in the study, students identified as “Other Health Impaired”, “Speech Impaired”, or “Emotionally Disturbed” who may receive services in both the co-taught and resource settings were not included in this research. In order for the data to provide a greater focus on the independent variable of one group receiving co-taught treatment and the other non-participant having no treatment, the research is limited to the participants identified with a “specific learning disability”.

Data Collection

The collection of data for participants in this study was drawn from the district data set of all students that completed the spring 2016 fourth grade STAAR Reading Test version to establish more accuracy and strength to the findings. The researcher used this smaller slice of data to generalize about the entire population being studied (Neuman, 2011). The Texas Education Agency's Public Information Management System PEIMS data management system allowed data to be collected from student records, and from the district special education department to identify students who meet the criteria for the study.

A significant precursor to data collection is the consideration of ethics. The researcher used appropriate permissions obtained prior to the gathering of any data (Creswell, 2008). For this study, the researcher obtained permissions from the school district administrative offices and the proper forms were completed and submitted. The district superintendent signed consent to conduct the research prior to the collection of data (see Appendix A). Subsequently, as required during the study, an informed consent document signed and obtained from the Director of Assessment and Accountability to provide PEIMS and STAAR data within the school district (see Appendix B). The researcher garnered the number of special education students as identified by Texas Education Agency's Public Information Management System (PEIMS) code in Skyward records by their grade level, campus for 2015-2016 school years, and if they participated in a co-taught or resource classroom.

The researcher verified co-taught classrooms on campuses through administrators and instructional setting coding of (40) mainstreamed or (41) used for pull-out services for resource students. Student data is encrypted and confidentially stored to protect the safety, rights and well-being of participants. Data collected from the campuses will be archival data submitted to the Texas Education Agency's Public Information Management System (PEIMS). Data received from the school district will be free from student names to assure anonymity. The researcher used a coding system to organize the data sets for each of the participating schools. Students must meet the criteria of all parameters of sitting in a fourth grade co-taught inclusive or resource pull-out class during the 2015-2016 school year, identified as a student with a specific learning disability, and took the STAAR Reading test. Furthermore, the data placed in the excel spreadsheet, help to organize the data, code participants, and create the data sets. The members of each stratum received an assigned number 1 to how many were in the stratum frame.

During the study and subsequent to completion of the IRB approved research, all data and related materials were maintained within the researcher's home is under locked conditions. Only the researcher had access the materials. Following a period of three years, per IRB requirements, all data and related materials will be destroyed.

Data Analysis

To analyze the STAAR Reading Scores between the inclusive co-taught students and pull-out resource students, data was collected from the Special Education department to identify students with specific learning disabilities who have been served in fourth

grade co-taught or pull-out resource classrooms during the 2015 – 2016 school year. The researcher organized and placed the data into an Excel spreadsheet to use as a basis for identified participants in the study. The researcher used an Excel spreadsheet to import the data into the Statistical Program for Social Sciences (SPSS) software program for analysis and the appropriate calculations.

The researcher chose to conduct a one-way analysis of variance (ANOVA) single factor statistical test for an independent measure research design to view standard raw scores between treatment (co-teaching) and non-treatment (resource) conditions. The purpose of this study was to see if there was a significant difference between the selected populations (McMillian & Schumacher, 1997). Descriptive statistics helped measure central tendency, variability, and relationships. Furthermore, the one-way analysis of variance (ANOVA) is appropriate because the TEA STAAR Reading raw scores were drawn from multiple classrooms and schools within one district determine the significance of difference between the two groups. As Gay and Airasian (2012) reported, by using the mean or statistical average calculated for each subgroup, a researcher could indicate there is a significant difference.

Data from the study is to be inserted into SPSS statistical software and computed to calculate whether there was a statistical significant difference between the groupings of receiving instruction or if there was no identifiable differences. In addition, the data was inserted into SPSS statistical software and computed to determine if the application of the co-teach model to one group results in greater improved academic achievement outcomes. McMillian and Schumacher (1997) reported the ANOVA one-way statistical

test used in this study appropriate. The ANOVA calculates the *F* statistic, which is a three or four-digit number used to find the level of significance and the degrees of freedom. The *F* statistic received its name for the great statistician R. A. Fisher, when the need for testing hypothesis for population mean or population proportion. *F*-statistic provides the ratio of variance of two samples. When the *F* statistic is large enough, the hypothesis support for the researcher demonstrates the presence of significance.

The research used data analysis for each null hypothesis. For the research question, the researcher ran an ANOVA test to determine if statistically significant student growth occurred in students' academic progress between the two groups. The effect size assessed help determine how much of an impact co-teach had on the experimental group of students. The researcher examined the data to determine if the performance comparison between students, who participated in a co-taught classroom and those who did not, indicate a difference for more student success. The researcher considered the Scheffe, Tukey-Karmer method, or the Boferroni test as a post-hoc test for unplanned comparisons pending levels of significance determined in the ANOVA analysis.

Summary

Chapter III has presented the research design, participants and setting, and respective statistical methods for this study. The purpose of this nonexperimental quantitative research study was to analyze the academic achievement of elementary student taught in co-taught classrooms in relationship to those taught in resource pull-out programs. In addition, the investigation conducted by the researcher to identify any

differences in student achievement between those two models of special education services delivery. This study used a quantitative, quasi-experimental approach to establish whether the co-teach instruction model may have any statistically and/or practically significant positive impact on the students sitting in co-taught classrooms. The researcher viewed positive impact, determined by students' improvement on academic performance on the state delivered assessments, which for the purposes of this study was the fourth grade STAAR Reading test.

The findings of this study should prove useful to districts and school administrators as they begin to make decisions on whether to implement a co-teaching model on campuses. Decision makers in a district need more tangible data and evidence, and this study may provide statistical data to shed light regarding whether the co-teaching model can improve student performance. Chapter IV and Chapter V present the data from the results of the research study to present the summary of the study, discussions, conclusions, implications for the use of co-teaching on elementary campuses, as well as recommendations for future research.

CHAPTER IV

Findings

Introduction

This study presented an examination of the academic achievement of identified fourth grade students with specific learning disabilities who received special education services within a resource pull-out setting or general education co-taught inclusive classroom. More important, the intent of the study to determine whether, and to what extent, the academic achievement on the end of the year STAAR Reading Test was impacted by practices in co-teaching. One group received the treatment of the co-taught model of instruction as part of their services provided through their Individualized Educational Plan (IEP). The control group participants received their instruction in a resource pull-out setting as part of their services provided through their IEP. Intense pressure faced daily in public schools, such as the district in this study, to perform at higher levels with the passage of The Every Student Succeeds Act (ESSA) has placed pressure on educators to ensure all students, including those with disabilities and other special needs, meet set benchmarks measured by standardized assessments.

An analysis of the data in this research study included quantitative analysis of raw scores from participants' performance obtained by the Texas Education Agency (TEA).

Students with an established criterion for participation in the study took place. Students met pre-determined set of criteria before becoming eligible for the study. The participants identified by the Director of Assessment and Accountability and Director of Special Education from the district had to be in fourth grade for the 2015 – 2016 school year, and identified with specific learning disabilities. Furthermore, each student setting, in which services received, the researcher verified within the district. Post hoc student achievement data used in this study came from released TEA data to the DFW school district. Teachers and students had no prior knowledge of the study.

Permission from the school district's Superintendent (see Appendix A) and district's Director of Assessment and Accountability (see Appendix B), the researcher garnered before any data were obtained. The researcher worked with the Director of Accountability and Assessment to retrieve identified students' raw score data. Data reported and recorded adhered in a manner that is consistent with the student records privacy policies of the school district. The performance raw scores address the question of least restrictive environment for student placement for special education services when served within a co-taught classroom.

According to Neuman (2011), researchers have a responsibility to reduce sampling errors. Therefore, the researcher accomplished this by addressing two factors: an adequate sampling size and limiting the amount of diversity within the samples. Girten (2001) sheds further light on a representative sample of 30 needed to have a high enough number to represent a population in a study. This study met the greater than 30 in each sample group. Outlier scores were not included in either data set. Effectively, the

descriptive statistical data in this study enabled the researcher to determine the accuracy of the hypotheses to the extent of co-taught model effectiveness. Additionally, it enabled the researcher to answer the question about determining a difference in the performance of the treatment and non-treatment participants. As districts begin making decisions on whether to implement a co-teaching model on campuses, this study provides statistical data.

This chapter includes the results of the statistical analysis of data collected to answer the research question:

Does the co-teaching model improve the academic achievement of special education students in an inclusive co-taught classroom versus special education students being served in a resource pull-out program?

Furthermore, the chapter presents findings for the research hypotheses:

H₁ Specific learning disability students who are co-taught score, on average, higher than those in resource pull-out classrooms.

H₂ There is a statistically significant difference in student academic performance on the STAAR Reading test when using the state standard raw score average between the co-taught and resource group of students.

With supporting evidence, the researcher stated the following null hypotheses:

H₀₁ Specific learning disability students who are co-taught did not score, on average, higher than those in resource pull-out classrooms.

H₀₂ There is no statistically significant difference in student academic performance on the STAAR Reading test when using the state standard raw score average between the co-taught and resource group of students.

This chapter organization is in two sections: (1) presentation of the findings, and (2) summary of the findings.

Presentation of the Findings

The performance indicators examined were the State of Texas Assessments of Academic Readiness (STAAR) Reading test. Students' raw scores who received reading instruction in inclusive classrooms with the co-teaching model of instruction were compared to non-participant scores when instruction was provided in a resource pull-out program. The data portrays the descriptive statistics for the study. Additionally, the investigation identifies any differences in student achievement between those two models of special education services delivery.

Table 1 (see Table 1 below) shows that the overall mean for participants and non-participants for each group on the 2016 STAAR Fourth Grade Reading Test. The ANOVA used in this study determine differences in the means for each group. In this table, the co-teach students raw score performance mean (24.25714286) is higher than the resource students mean (20.11764706).

A raw score of 24 on the fourth grade the State of Texas Assessments of Academic Readiness (STAAR) Reading test in 2016 indicated the student was Level II: showing satisfactory performance. Students, who fall below a 24 raw score, did not meet the academic achievement and considered an unsatisfactory performance on the STAAR

Reading test. The significance of difference of the mean score from both groups indicates between treatment (co-teaching) and non-treatment (resource) conditions noted a performance increase for the co-taught group of students. The balance between each group involved one additional student in the co-taught group than the resource group.

Table 1

Raw Scores on STAAR Fourth Grade Reading Test

Group	Student Count	Sum	Average	Variance
Co-Teach Students	35	849	24.25714286	61.0789916
Resource Students	34	684	20.11764706	39.25846702

Note: A raw score of 24 was Level II: Satisfactory Performance. All scores below are Level 1: Unsatisfactory Performance.

The factor range of values for the difference between the means for each pair of groups is independent. The distribution of the sample groups was normally distributed. The variance for the co-teach student group (61.0789916) and resource student group (39.25846702) demonstrated an additional moderate difference among each groups' raw scores.

Table 2 (see Table 2 below) presents descriptive statistics answered further findings about the significance of the difference noticed in the raw scores mean. The null hypothesis states that the populations in each group in this study are all equal. A significance level of 0.05 used in the study indicates 5% risk of concluding that a difference exists when there is no actual real difference. This study returned a p-value of 0.018096079, which fell below the significant level of 0.05 cutoff. Therefore, the small

p-value of 0.018096079 indicated that there is a small chance of getting this same data if no real difference existed. Additionally, the data determined that the difference in the groups' abundance data on the dependent variable is significant.

Table 2

Source of Variation between Two Groups on STAAR Fourth Grade Reading Test

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F-statistic	P-value
Between Group	295.5240044	1	295.5240044	5.871543645	0.018096079
Within Group	3372.215126	67	50.3316905		
Total	3667.73913	68			

More specifically, by partitioning the total variation into different sources (associated with the different effects in the design), the researcher could compare the variance due to the between-groups (or treatment) variability with that due to the within group (treatment) variability. The Mathematics and Statistics Dictionary refers to the variance estimated from the within group (treatment) variability should be approximately the same as the variance estimated from between groups (treatment) variability under the null hypothesis.

Named for the great statistician R. A. Fisher, the F-statistic used in this study specifies the ratio of two s squares, based on the information presented in two samples. In general, an F-statistic is a ratio of two quantities that are expected to be roughly equal

under the null hypothesis, which produces an F-statistic of approximately one. The obtained value of F provides data for the statistical significance of the observed differences among the mean of two groups. In the process of calculating the ANOVA table in this study, the analysis helps to deduce whether or not certain assumptions met, including homogeneity of variance. If the variance are equal between the groups, the F-statistic in this test with value of (5.871543645) is greater than the table F value of one. The significant amount of variance within this study reveals the treatment of co-teach is shown to increase student performance on the 2016 standardized test. The statistical data results answers the study question, “Does the co-teaching model improve the academic achievement of special education students in an inclusive co-taught classroom versus special education students being served in a resource pull-out program?”

Similarly, the research hypotheses comparison from statically data supports the additional findings for each of the research hypothesis tested.

H₁ Specific learning disability who are co-taught scored, on average, higher than those in resource pull-out classes on a STAAR Reading test. The researcher data indicated the treatment of co-teaching group raw score performance mean (24.25714286) is higher than the resource group mean (20.11764706).

H₂ There is a statistically significant difference in student academic performance on the STAAR Reading test when using the state standard raw score. The researcher noted the p-value of 0.018096079, which fall below the significant level of 0.05 cutoff. Therefore, the small p-value of 0.018096079 indicated that there is a small

chance of getting this data if no real difference existed. There is a significant difference between the co-taught and resource groups.

Correspondingly, the study revealed the effect of participation in a co-taught classroom increased student performance in comparison to the non-participants in resource classrooms.

Further supporting evidence revealed statistical data in which the researcher addressed the null hypotheses in the study.

H₀₁ Specific learning disability students who are co-taught did not score, on average, higher than those in resource pull-out classrooms. The researcher rejects the null hypothesis for the co-teaching group raw score performance mean (24.25714286) is higher than the resource group mean (20.11764706).

H₀₂ There is no statistically significant difference in student academic performance on the State of Texas Assessments of Academic Readiness (STAAR) Reading test when using the state standard raw score. The researcher, based on the results from the ANOVA statistical test, rejects the null hypothesis of no significant difference in student academic performance.

Table 3 shows the difference between the Co-teach and Resource groups that met performance standards. From this data, the researcher concluded that the treatment of co-teaching meant that the students within this model outperformed non-participants in resource classes. Because of the increased performance of co-taught students, the researcher further concluded the co-teach treatment received as positive benefits in student achievement from the program.

Table 3

Students Performance on STAAR Fourth Grade Reading Test

Group	Student Count	Level 2: Satisfactory (24 – 37 Raw Score)	Level III: Advanced (37 – 44 Raw Score)	Total Met Standard
Co-Teach Students	35	17	1	18
Resource Students	34	12	0	12

Note: Co-Teach Student Group had a 48.6% and Resource Student Group 35.3% performance of satisfactory or above on STAAR Fourth Grade Reading Test.

Summary of Findings

An analysis of the data and findings in this study reveals information about the overall effectiveness of the co-teaching model designed for struggling learners. Findings indicate that students identified with specific learning disabilities did have higher scores than non-participants receiving their services in a resource setting. Although the raw scores had a moderate difference in the means between the groups, the difference is more significant when related to performance outcomes.

This study finding contributes insights needed to address the problem of poor academic achievement of students with specific learning disabilities currently served within districts. The national attention focused on raising the academic achievement of ALL students, including those with disabilities reported in chapter one make this co-teach endeavor more significant (Friend, 2014). The co-teaching model, as a method of delivery of services, offers a possibility for the success of Special Education students

remaining in the General Education setting. Chapter V includes five sections to summarize the study and present conclusions, implications, and recommendations. Chapter V ends with final concluding remarks.

CHAPTER V

Summary, Conclusions, Implications, and Recommendations

Introduction

The purpose of this chapter is to synthesize the information collected regarding this quantitative study that investigated the use of co-teaching as an instructional model to serve Elementary special education students in general educational classrooms and consequently inform district decision makers. The chapter serves to summarize the results of this research intended to impact educators to the familiarity and possibility of the co-teach model event to successfully help close achievement gaps and serve special education students in general education classrooms with their peers. The following five sections: (1) summary of the study, (2) conclusions, (3) implications, (4) recommendations, and (5) concluding remarks are included in this chapter.

Summary of the Study

Since the reauthorization of the 1990 Individuals with Disabilities Act (IDEA) and the passage of No Child Left Behind Act (NCLB), public schools in the United States have concentrated on educating all students, even those identified as having disabilities, in general education classrooms (Magiera & Zigmond, 2005). In addition, The Every Student Succeeds Act (ESSA) of 2015 includes provisions currently to ensure success for

all students and schools. Furthermore, ESSA provides advanced equity by upholding critical protections for high needs students like participants in this study. Finding ways to teach all learners in inclusive, general education settings, as a way to develop instructional academic growth birthed the model for co-teaching as a way to address the requirements of these laws. According to research, pioneers like Cook and Friend (1995) advocated for co-teaching as a way for children with disabilities to begin their education journey in the least restrictive environment. The term co-teaching as used in this study refers to a service delivery option in which students with disabilities can obtain instruction in the general education classroom, and taught by both a qualified general education teacher and qualified special education teacher (Friend, 2014; Friend & Hurley-Chamberlain, 2009; Walsh, 2012).

The aim of this study was to contribute to the understanding of how, within the co-taught classroom, general education teacher and the special education teachers meet the needs of students identified with specific learning disabilities and affect the academic achievement of these students in the inclusive environment. A non-experimental quantitative research methodology was used to analyze the academic achievement of elementary students taught in co-taught inclusive classrooms in relationship to those taught in resource pull-out programs. The participants came from eighteen Elementary campuses within one DFW school district, enrolled in fourth grade for the 2015 - 2016 school year, who received instruction before taking the Spring STAAR Reading test, in a co-taught or resource setting. The researcher used performance indicators from the STAAR Reading test raw performance scores to examine achievement.

The researcher built this study around the research question:

Does the co-teaching model improve the academic performance of special education students in an inclusive co-taught classroom versus special education students being served in a pull-out resource program?

The raw performance score data collected from the district was archival and encrypted to assure anonymity. This study found the co-taught students raw score performance mean (24.25714286) is higher than the resource pull-out group mean (20.11764706).

Furthermore, the significance of the mean between the two groups indicated a performance increase for the co-taught group of students. An analysis of the findings revealed the overall effectiveness of the co-teaching model for students to average higher scores than non-participants receiving their services in a resource pull-out setting.

Additionally, the research concluded although the raw scores had a moderate difference between the groups, the difference is more significant when the research related it to performance outcomes. Students, whose raw score fell below 24, did not meet the academic achievement standard, considered unsatisfactory performance on the STAAR Reading test in 2016. The treatment of co-teaching meant 48.6 % compared to 35.3% met satisfactory academic performance. Due to the increased performance of co-taught students, the researcher further concluded the co-teach students received positive benefits in student achievement from this model of instruction.

This study adds to the literature of co-teaching with quantitative data to support when students with disabilities are educated in inclusive classrooms settings, they tend to achieve at a higher standard because they are exposed to the same curriculum as their

nondisabled peers. The researcher found many studies conducted regarding the benefits of co-teaching, but few quantify effects of co-teaching on student academics (Friend & Hurley-Chamberlain, 2009). The closing of the achievement gap by student with disabilities was one of the findings from this research for the co-taught group average was higher than the resource group. As well, the research included in chapter 2, the researcher confirms that the practice of co-teaching students is a reliable and applicable model. Co-teaching allows students with disabilities to learn content knowledge beside their peers without disabilities, while still receiving specialized instruction from a special education teacher (Friend, 2014; Friend & Hurley-Chamberlain, 2009; Walsh, 2012). The results of this study may lead to educators better able to make informed decisions about implementing co-teaching as a form of inclusive education and improve academic student performance.

Conclusions

This study used the data from the analysis score performance indicators from the STAAR Spring 2016 Reading test. There were two class types being compared in this study, co-teach and resource setting. The researcher used participants within one school district enrolled in 4th grade during the 2015 -2016 school year. In addition, to bring greater focus to the treatment, only students identified with specific learning disabilities were included. The students' raw scores who received reading instruction in inclusive classrooms with the co-teaching model of instruction were compared to non-participant scores when instruction was provided in a resource pull-out program. The data portrays the descriptive statistics used for the study. Additionally, the results identify any

statistical differences in student achievement between those two models of special education services delivery.

The ANOVA used in this study determined differences in the means for each group. The co-teach groups raw score performance mean ((24.25714286) is higher than the resource group mean (20.11764706). The results of that comparison indicated there was a statistically significant difference in student performance on the STAAR Reading test. A raw score of 24 on the fourth grade the State of Texas Assessments of Academic Readiness (STAAR) Reading test in 2016 indicated the student was Level II: showing satisfactory performance. Students, who fall below a 24 raw score, did not meet the academic achievement and considered an unsatisfactory performance on the STAAR Reading test. The significance of difference of the mean score from both groups indicated the treatment (co-teaching) averaged score higher than the resource group.

The factor range of values for the difference between the means for each pair of groups is independent. The distribution of the sample groups was normally distributed. Therefore, the variance for the co-teach student (61.0789916) and resource student (39.25846702) demonstrated an additional moderate difference among each groups' raw scores. The descriptive statistics answered further findings about the significance of the difference noticed in the raw scores mean. A significance level of 0.05 used in the study indicates 5% risk of concluding that a difference exists when there is no actual real difference. This study finding returned a p-value of 0.018096079, which fall below the significant level of 0.05 cutoff. Therefore, the researcher concluded there is a small chance of getting this data if no real difference existed.

In addition, the researcher conducted a one-way ANOVA statistical test, which revealed, the F-statistic in this test with value of (5.871543645) is greater than the table F value of one. The descriptive statistical data partitioned the total variation into different sources to compare the variance due to the between-groups (or treatment) variability with that due to the within group (treatment) variability. The significant amount of variance within this study revealed to the researcher the treatment of co-teach increased student performance on the 2016 standardized test. The statistical data results answered the study question, “Does the co-teaching model improve the academic achievement of special education students in an inclusive co-taught classroom versus special education students being served in a resource pull-out program?”

Similarly, the research studied each hypotheses to compare from statically data significant differences between the changes in scores between the co-taught and resource groups. For hypothesis 1, the researcher concluded students with specific learning disability who are co-taught scored, on average, higher than those in resource pull-out classes on a STAAR Reading test. The researcher data indicated the treatment of co-teaching group raw score performance mean (24.25714286) is higher than the resource group mean (20.11764706).

For hypothesis 2, the researcher’s findings revealed there is a statistically significant difference in student academic performance on the State of Texas Assessments of Academic Readiness (STAAR) Reading test when using the state standard raw score. Furthermore, the study revealed the effect of participation in a co-taught classroom increased student performance in comparison to the non-participants in

resource classrooms. The treatment of co-teaching meant 48.6 % compared to 35.3% met satisfactory academic performance. With schools receiving performance ratings, having more students passing directly affects the campuses ratings, also known as “School Report Card.”

Supporting evidence revealed statistical data in which the researcher determined the null hypotheses in the study. For the null hypotheses 1, the researcher stated specific learning disability students who are co-taught did not score, on average, higher than those in pull-out resource classrooms. The researcher rejects the null hypothesis for the co-teaching group raw score performance mean (24.25714286) is higher than the resource group mean (20.11764706).

For the null hypotheses 2, the researcher determined based on the results from the ANOVA statistical test, rejects the null hypothesis of no significant difference in student academic performance. The researcher concluded the p value (0.018096079) falls below the (0.05) significant cutoff level, rejects the null hypothesis of no statistical difference between the groups in the study. This finding indicates the treatment of co-teaching did find a statistical difference. The researcher concluded that the treatment of co-teaching meant that the students within this model outperformed non-participants in resource pull-out classes. Because of the increased performance of co-taught students, the researcher further concluded the co-teach treatment as a positive benefit to increase student achievement. I will discuss the implication of these finding further in this section.

Implications

The implications of this study are far reaching by contributing quantitative data to current research that showed positive benefits to providing co-teaching services to affect the success of students who struggle with learning. This study indicated that 4th grade students identified with specific learning disabilities who received the co-taught treatment had positive benefits to increase their achievement on a comprehensive statewide test. In co-taught classrooms, learners receive high-quality lessons with their set accommodations from the expertise of two educators (Hourcade & Bauwens, 2003). Moreover, the co-teaching method has helped to circumvent the use of labels or having to leave their general education class that often result children with disabilities not feeling good about themselves. Co-teaching research studies reveal that other struggling learners who often do not meet the criteria for special education can equally benefit from the power of two teacher within one space. Thus, co-teaching provides for children that do not meet the criteria for special education additional support within their general education classroom.

The key component for this study is whether we can accurately generalize from what we learn from the data to apply to multitude of co-teach models implemented throughout the country. This study included one school district, with students receiving services on multiple campuses. Although generalizability of the results may be limited, co-teach model enhances contact to a wealth of wider benefits to students and is emerging as a viable alternative to pull-out models (Friend, 2014). As research begins to unfold both qualitative and quantitative data revealing that all children profit from two

teachers within the classroom, more district will need to take steps to figure out if the implementation of this least restrictive model could work with the students they serve. In addition, those distinct skills each co-teacher brings to the classroom; be it content or specialized learning approaches and methods, shed further light for educators as a way to increase outcomes for all students (Weiss & Lloyd, 2003).

The researcher identified that professional development with Dr. Marilyn Friend took place for the general education, special education, and administrators before implementation in the studied district. Keefe and Moore (2004) found many special education teachers reported that they felt they had a secondary role in the classroom due to their lack of content knowledge. Thus, it is imperative each school district provide professional development, which addresses differentiated learning experience for all teachers regardless of their certification. Building the special education teachers' content knowledge and general education teacher knowledge in specifically design instruction is a top priority for professional development.

Far too often, even if deemed by the IEP, the recommendation for students to receive resource pull-out as appropriate service for the special education student needs; leaving the classroom means missing critical instruction while receiving pull-out services which continues to be a valid concern. Intentional focus of teachers who agree to no new instruction or deeper discussion of academics occurring during the time special education students leave the classroom cannot be dismissed (Friend, 2014). In addition, the data from this study revealed the co-teach treatment as a viable service to increase academic progress. When students who receive resource pull-out services, the instruction that

continues in their general education classroom could expose a weakness the IEP committee should review before recommending pull-out services. I will discuss recommendations for practice, testing, and future research further in this section.

Recommendations

Based upon this study, several recommendations for school personnel to place struggling students in co-taught classrooms so they can potentially benefit from the instructional strategies and presence of a second teacher. The presence of the second teacher in the co-teaching environment offers options to enable students with disabilities and other special needs to reach their potential by providing them with access to the general education curriculum while ensuring that they receive the specially design instruction to which they are entitled.

Recommendations for practice.

Given the information from this study, many evidence-based practices identified in professional literature identify co-teaching as a way to increase student participation, which increases student engagement, which help improve learning outcomes. For the 21st century educator the mantra to increase student engagement by increasing participation partners well with the co-teach model of instruction. When students have more time with the content and processes they are learning, the more quickly they will master them. Co-teaching serves as a type of differentiating in and of itself (Friend, 2014).

Co-teaching appears to make a positive difference on students' access to the general education curriculum with well-trained co-teachers. Providing professional development for these co-teaching partnerships is one of the key recommendations from

this study. The district in this study was three years into implementation of the co-teaching model and established. The researcher identified that giving teachers time to carefully analyze their complementary areas of expertise and find a way to blend those unique strengths, create classrooms that are richer, and more tailored to address the needs of all students. Furthermore, even experienced co-teacher need to continue to increase their knowledge and refine their skills.

Co-teaching is about doing what is right for kids. The researcher further recommends districts to increase professional development for all teachers on good quality Tier 1 instruction. District administrators know that the diverse learners sitting in classrooms today are multi-faceted with a full range of abilities all within one class. For this reason, the researcher recommends many of the co-teaching practices resonate as a positive way to allow differentiation in most aspects of instruction. Differentiated instruction includes time for teachers to develop a clear plan. The instruction is deliberate and designed to address student needs as well as those students with specifically designed instruction from their IEP. As educators know many factors affect learning even though not necessarily directly related to instruction, such as physical environment, classroom culture, and availability to learn instructional content with their peers. Finding instructional practices to empower students to be more successful in gaining content knowledge is a true challenge. How students learn instructional content can encompass strategies from the co-teach model that are identified to give students more access to the teacher to foster student learning.

Recommendations for testing.

Districts around the country are seeking ways to implement comprehensive systems that will lead to stronger learning for those struggling with learning. Finding ways to help these struggling learners' impacts schools throughout the country. Stecher and Vernez (2010) further defined testing critics and civil rights advocates as arguing that test are an important safeguard for struggling students due to public reporting of test scores. The division between general education teachers and special education teachers who sometimes view their roles as independent from each other versus in partnership is noted in research. However, results even after The Every Student Succeeds Act (ESSA) has come into law, finds many interventionists are now required to eliminate or cut back on the amount of time special education students are served outside their general education classroom. For educators this creates heartburn of figuring out how to serve students placed in their class. Then on top of this trend, the number of standardized test within U.S. public schools has exploded this past decade.

Standardized tests have caused intense debate on Capitol Hill for lawmakers since the passing of ESSA. Data illuminated in the school reports, indicate that achievement gaps for different student groups is closing. At this time, public schools are administering standardized test that are required to tests all students in math and reading annually from third grade through eighth grade, and at least once in high school. With these mandates in place, the recommendation is for educators involved in IEP meetings to consider the co-teach treatment as an effective way to improve special educations

students' performance on these standardized tests. The descriptive statistics from this study supports this recommendation.

Recommendations for future research.

The findings of this study indicate that student's performance was overall higher in co-taught classrooms. Further research could focus on the use of different strategies and further isolate instructional methods as a possible explanation for difference noted in academic achievement between the resource pull-out and co-taught groups. Based upon the study, there is a need for future research into the effectiveness of various forms of interventions. Although research within this study indicates the co-teach model offers a wide variety of strategies to use to reach struggling learners, the effective patterns within co-teach model and pedagogical practices can shed more light on how to implement.

In order to provide for greater generalization to students, an additional study focused on the content of reading and math co-taught classrooms best practices with quantifiable data would help better inform district decision makers. The researcher chose the content area of reading due to research that indicates over 90% of students identified as having a specific learning disability have some identified reading difficulties. While a more in depth study that provides both formative (quizzes, tests, CBA's (curriculum-based assessments), etc.) along with summative data (end of the year-standardized assessment) from multiple years within co-taught classrooms would provide a more in depth views about students' performance. The undertaking of this type of wide study data was not available to the researcher.

In addition, due to this selected sample, generalizability of the results may be limited. The decisions made by each IEP committee for services in a co-taught or resource setting were not available to the researcher. During IEP meetings, each committee, after they determine goals, makes a decision on where services will occur. Each campus IEP committees made the decision, based on individual characteristic of that student, to determine services and setting. The thoughts and decision making of these committees were not a part of this quantitative study, but future research on how these decisions are made is important. If there was a better idea of how to support IEP committees in this decision making process, it could lead to more options in place for already struggling students within schools.

This study has implications for educational practices for other categories of concerns of students groups struggling within public schools. The focus of this study was on students identified with specific learning disabilities. However, the study did not address the other learners sitting in co-taught classrooms to see how the treatment of co-teaching influenced their standardized test scores in comparison to their peers in general education classes. School boards can learn to make policy and reinforce decisions that focus upon creating better education for all students. Finding ways to support schooling efforts that provide the structures and pedagogy necessary to serve all students is a noble charge. Teachers know that student performance does improve with increased time practicing skills in content area with interventions. Future research of the co-taught model studies to determine its role in educating students with and without disabilities is a worthy pursuit towards doing what is right for kids.

Concluding Remarks

This has been an enlightening study, which provided insights to me regarding practical solutions for educating marginal students. My hope was for the research to provide a lens in which educators use on how to best serve specific learning disability students on their campus, either within a co-taught classroom or resource pull-out program. As a building principal within the district in the study, I have a deep understanding of what is occurring special in this district to increase the performance of struggling students in a climate driven by standards based outcomes. I have felt the outcomes of decisions made in IEP meetings on how to make informed decisions to create success for students on state accountability testing.

The purpose of this nonexperimental quantitative research study was to analyze the academic achievement of elementary student identified with specific learning disabilities taught in co-taught classrooms in relationship to those taught in resource pull-out classrooms. The findings of this study should prove useful to districts and school administrators as they begin to make decisions on whether to implement a co-teaching model on campuses. The credit for success of all students belongs to those teachers and staff who worked diligently to help each individual student. For educators, I believe it is more important our next move, than what just happened. Decision makers in districts need more profound evidence like this study provided to shed light that the co-teaching model can improve student performance.

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APPENDIX A

SUPERINTENDENT'S LETTER

September 10, 2016

Dr. Jim Vaszauskas
Mansfield Independent School District
605 East Broad Street
Mansfield, Texas 76063

Dear Dr. Jim Vaszauskas,

My name is Susan Gerlach, and I am a doctoral candidate in the Department of Secondary Education and Educational Leadership at Stephen F. Austin State University. The title of my dissertation is "A QUANTITATIVE STUDY OF CO-TEACHING AS AN INSTRUCTIONAL MODEL TO SERVE ELEMENTARY STUDENTS." The purpose of this letter is to solicit your support and MISD's participation in this quantitative study to address the use of the co-teaching instructional model to serve Elementary special education students in general educational classrooms.

Recent trends and legislation have increased the use of inclusive education for students with disabilities. At this time, few large-scale studies on co-teaching have been conducted to date, and empirical research in terms of quantified student measured outcomes is limited. As a result, districts face challenges when considering implementation of a co-teaching model.

The quasi-experimental design in this study will use intact special education groups to help determine achievement of 3rd and 4th grade students on the State of Texas Assessments of Academic Readiness (STAAR) Reading test in co-taught treatment classes of students with their peers, as well as students taught in resource classes within one school district at multiple campuses. This study will establish whether the co-teach instruction model may have any statistically and/or practically significant positive impact on the students sitting in co-taught classrooms. Positive impact will be determined by students' improvement on academic performance on the state delivered assessments, which for the purposes of this study was the STAAR Reading test. Descriptive statistics will be used to make the above determinations, and data will be aggregated accordingly.

Mansfield ISD will be identified only as a school district in the DFW area. If you wish to grant permission for this study using archival existing data within the district, please review and sign below. If you have any questions or require clarifications, please contact me at 817-343-5385 or Dr. Patrick Jenlink, chair of the dissertation committee, at 936-468-2908. Thank you for your assistance and consideration.

Sincerely,

Susan Gerlach
Doctoral Candidate
Department of Secondary Education
and Educational Leadership
James I. Perkins College of Education
Stephen F. Austin State University
P. O. Box 13018
Nacogdoches, TX 75962
817-343-5385

Dr. Patrick M. Jenlink
Chair, Dissertation Committee
Department of Secondary Education
and Educational Leadership
James I. Perkins College of Education
Stephen F. Austin State University
P. O. Box 13018
Nacogdoches, TX 75962
936-468-2908

I consent to grant permission for this study. All data will be encrypted and confidentially stored to protect the safety, rights and well-being of archival STAAR data of participants and district, and to promote ethically sound research. I also grant permission for you to work with the Director of Assessment and Accountability to collect the data.

Dr. Jim Vaszauskas, Superintendent of MISD

Date

APPENDIX B

DIRECTOR'S LETTER

September 10, 2016

Dr. Teresa Stegall
Mansfield Independent School District
605 East Broad Street
Mansfield, Texas 76063

Dear Dr. Teresa Stegall,

My name is Susan Gerlach, and I am a doctoral candidate in the Department of Secondary Education and Educational Leadership at Stephen F. Austin State University. The title of my dissertation is "A QUANTITATIVE STUDY OF CO-TEACHING AS AN INSTRUCTIONAL MODEL TO SERVE ELEMENTARY STUDENTS." The purpose of this letter is to solicit your support and MISD's participation in this quantitative study to address the use of the co-teaching instructional model to serve Elementary special education students in general educational classrooms.

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Mansfield ISD will be identified only as a school district in the DFW area. Dr. Jim Vaszauskas, Superintendent of MISD, has granted permission for the district to participate. If you wish to grant permission to help with the data collection needed for the study, please review and sign below. Your services and skills offer great insight into the collection of the data to help report the findings. If you have any questions or require clarifications, please contact me at 817-343-5385 or Dr. Patrick Jenlink, chair of the

dissertation committee, at 936-468-2908. Thank you for your assistance and consideration.

Sincerely,

Susan Gerlach
Doctoral Candidate
Department of Secondary Education
and Educational Leadership
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I consent to grant permission to work as a participant and help retrieve needed data for this study. All data will be encrypted and confidentially stored to protect the safety, rights and well-being of archival STAAR data of participants and district, and to promote ethically sound research.

Dr. Teresa Stegall, Director of Assessment & Accountability

Date

VITA

Susan M. Gerlach graduated from Lindbergh High School in 1975. She attended Cleveland State University, and received her Bachelor of Science in Education in 1979. She has a broad background in education, with over seventeen years experience at the Elementary, Middle School, and High School level as a General Education and Special Education teacher. She returned to further her education at University of Texas at Arlington to pursue her Masters of Education Leadership & Policy Studies Degree, which conferred in 2003. She became an assistant principal in 2004 at Brooks Wester Middle School. She then secured the appointment as principal at Anna May Daulton Elementary in 2009. She accepted the invitation into the 2012 Doctoral Cohort at Stephen F. Austin State University, where she earned a Doctorate in Educational Leadership Degree in May 2017. Currently, she continues to serve as the principal of Anna May Daulton Elementary School in Mansfield Independent School District.

Permanent Address: 907 Turnberry Drive, Mansfield, Texas 76063

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