The Relationship between Roles and Responsibilities of Co-teachers and Co-teacher Self-efficacy

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THE RELATIONSHIP BETWEEN ROLES AND RESPONSIBILITIES OF
CO-TEACHERS AND CO-TEACHER SELF-EFFICACY

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ABSTRACT

This study is a survey that was intended to measure the connection between what co-teachers actually do and what they think they should be doing as best practice. Second, it intended to study the roles and responsibilities that co-teachers report fulfilling. Finally, whether self-efficacy is a predictor of co-teacher roles and responsibilities is further reported.

Three hundred twenty co-teachers participated in the study: one hundred sixty special education and 160 general education teachers in a large urban school district in the southwestern United States. Bandura’s Teacher Self Efficacy Scale (1994) was used with a tool for co-teachers designed specifically for this study.

Results of this study indicate that co-teachers, general education and special education, reported executing fewer roles than what they considered best practice. Both general and special educators reported engaging in different tasks than their co-teaching partners in the areas of co-instruction, co-planning, and co-behavior management. Co-teachers who reported having greater self-efficacy were, according to the survey results, more likely to plan and differentiate together.
ACKNOWLEDGEMENTS

I would like to thank the co-teachers who participated in the survey and everyone who passed the survey link along to fellow co-teachers. Without you, the co-teachers, this study would not be possible. I would like to acknowledge Dr. Cori More, whom with her guidance and wisdom has led me through the completion of my dissertation and my Ph.D. She was always willing go the extra mile to make certain I had a quality study. The members of my dissertation committee, Dr. Joe Morgan and Dr. Tracy Spies, suggested edits and revisions that brought out the true meaning of this study. Dr. Michael McCreery contributed many ideas to make the methods and results sound and of value to the educational community. Also, Dr. Tiberio Garza advised me on the statistical analyses. Additionally, Theo Small and Amber Lasater distributed my survey to teachers. Finally, David Van Heck assisted me with editing the dissertation.
DEDICATION

My students throughout the years have inspired me to find new evidence-based methods for their academic and social development. This project is dedicated to them and the hope that they will receive quality instruction by trained, experienced, willing, and knowledgeable co-teachers.

This project is also dedicated to my mother, Barbara Reed Hall, and my grandmother, Reable Gooch Reed, who were both special education teachers, and combined have over a half a century experience in the field of special education; my father, Charlie Swaney, who taught me to have a strong work ethic; my son, David Van Heck, who continually inspired and supported me throughout this project; in memory of my sister, Lee Ann Swaney, who had intellectual disability; and in memory of my step-father, Alan Hall, Jr., who loved me unconditionally through my graduate studies. I dedicate my Doctor of Philosophy to Jesus Christ.
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CHAPTER 1

Introduction

Co-teaching is a service delivery model that brings one general education and one special education teacher together to plan, instruct, manage behaviors, and differentiate instruction (Friend & Cook, 2009; Friend, Cook, Hurley-Chamberlain & Shamberger, 2010; Murawski, 2009; Pugach, & Winn, 2011; Scruggs, Mastropieri, & McDuffie, 2007; Solis, Vaughn, Swanson, & McCulley, 2012). Co-teaching becomes important when a review of the history and evolution of inclusive classrooms is reviewed. Relationships, roles, and responsibilities have evolved as the role of the special education teacher has changed over time. Historically, students with disabilities were taught in separate classrooms with special education teachers so that they could receive the specialized, individualized education that they needed in order to learn (Rotatori, Festus, & Bakken, 2011). Students with disabilities often did not attend school at all (Winzer, 1993). In order to resolve this discrepancy, laws were passed, including the 1975 Education for All Handicapped Children Act. The law required that all children attend school and receive a free appropriate public education. For the first time, students with disabilities were required to attend school, and schools were required to provide them with an education. This act was the result of families and their advocates lobbying for the deinstitutionalization of students with disabilities (Education for All Handicapped Children Act, 1975). However, students with disabilities continued to be segregated from the mainstream classroom (Winzer).

To address this pattern of segregation for students with disabilities, some schools started to use the consultative model in the late 1980s. It was conceived as an indirect or direct service provided to the student with a general educator seeking the assistance of the special educator on
an as-needed basis (Pugach, Johnson, Drame, & Williamson, 2012). By the 1990s, the role of the collaborative consultant changed into the special education teacher working in the general education classroom teaching specifically to the student with a disability (Bauwens, Hourcade, & Friend, 1989; Idol, Nevin, & Paolucci-Whitcomb, 1992).

Concerns related to co-teaching appeared throughout the 1990s. There were difficulties establishing partnerships between teachers, the lack of common planning time, different beliefs about teaching and inclusion, communication problems, and lack of administrative support (Reeve & Hallahan, 1994). Both general education and special education teachers expressed these concerns. Furthermore, issues arose around poor diagnostic processes, the lack of appropriate instructional practices, few techniques for managing teaching in the classroom, and appropriate assessments (Fuchs & Fuchs, 1992).

In 1990, the PL 105-17, the Individuals with Disabilities Education Act (IDEA) was reauthorized by Congress. This re-authorization of the Education of All Handicapped Children’s Act (1975) shifted the language surrounding the concept of Least Restrictive Environment. With this change, the IEP team is to place the student in the environment that best needs his or her needs and provides them access to the general education curriculum. If students need to be removed from the general education environment, the IEP team must justify why the student’s needs cannot be met in a classroom with their typically developing peers (PL105-07, 1997; IDEIA, 2004). This required that students be instructed in classes that were inclusive and have access to the general education curriculum. Additionally, the No Child Left Behind Act (NCLB) of 2001 required that all schools be held accountable for the administration of the general education curriculum to all students.
Theoretical Framework of Co-Teaching

As previously stated, students with disabilities were placed in the Least Restrictive Environment (LRE) per the Education for All Handicapped Children Act (PL94-142, 1975). Subsequent laws also reinforced this notion: IDEA of 1997 and IDEIA 2004, which was the reauthorization of the original IDEA law. Students with disabilities should have exposure to general education curriculum and more importantly interaction with their age appropriate peers. These interactions are designed to assist them with adjusting to adult life with people who do not have disabilities. IDEIA 2004 requires educational programs of all students receiving special education services and identification of supplementary aids and services to ensure student involvement with and progress in the general education curriculum (Smith, 2007).

Making the general academic curriculum more accessible includes making curriculum modifications such as curriculum adaptations and curriculum augmentations. Additionally, there may be modifications to classroom ecological variables, access to educational and assistive technology, assessment and task accommodations, and the availability of para-educators or peer supports (Lee, Soukup, Little, & Wehmeyer, 2009).

Access to general education content can be achieved by using technology to develop instructional materials based on the principles of universal design as well as by pedagogical means, including effective instructional strategies and curriculum modifications. Curriculum modifications, such as graphic organizers, have been shown as effective in meeting the unique learning needs of students with disabilities in the general education classroom (Lee et al., 2009).

In 2017, over 61% of students with disabilities were spending at least 80% of their school days in inclusive general education settings (National Center on Educational Statistics, 2017). There was also increased pressure brought about through the Every Student Succeeds Act (2015).
to ensure all students access and demonstrate progress in the general education curriculum. With this comes a need for effective and efficient instructional procedures that can be used to provide structured and data-driven instruction in inclusive settings and provide access to functional and core curriculum for students with significant cognitive disabilities (James, Walker, Utley, & Maughan, 2012).

Students may have access to the general education curriculum, but this is useless without the consideration of social skills instruction, which will ease in communication and interaction with general education peers. Effective social skills are critical to successful school performance, including classroom participation, academic engagement, and social interaction.

The impact of peer interactions on the lives of adolescents is substantial. Students spend proportionately more of their time with their peers as they get older, intensifying the influence of peer interaction on adolescent development. Interaction with general education peers may play a role in academic, functional, and social skill development, as well as contribute to increased social competence, attainment of educational goals, friendship development, and enhanced quality of life (Angeliki, 2006). Co-teaching is one way to meet the needs of the legal requirements of the students, by bringing the services of the resource room to the students with disabilities to the general education classroom. Theoretically, inclusion can be addressed by all of these points: technology, data-driven instruction, and social skills (Hughes et al., 2011).

**Co-Teaching Roles and Responsibilities**

To meet the needs of students with disabilities in the general education environment, special education and general education teachers may be asked to co-teach. These pairings are often a result of teacher availability rather than designed matches. Unfortunately, teachers frequently determine how to work together without making an initial plan or receiving guidance
on how to proceed from administration. Co-teaching roles can be unclear because teachers do not begin with a framework for defining responsibilities as to who will teach and when, who will manage individual student behaviors, or who will implement certain components of the IEP (Perez, 2012). Having co-teacher roles and responsibilities in place can promote efficiency and ease of work together and clarify to students what to expect from each teacher (Conderman, Bresnahan, & Pederson, 2008). Likewise, self-efficacy is important for teachers to develop in teaching inclusive classrooms in a co-taught environment because of its role in regulating classroom teaching practices (Shoulders & Krei, 2015). Self-efficacy and clearly defined roles can improve co-teaching relationships and outcomes for students (Morgan, 2016).

Numerous studies on co-teaching have been conducted (Bryant Davis, Dieker, Pearn, & Kirkpatrick, 2012; Morningstar, Shogren, Lee, & Born, 2015; Yopp, Ellis, Bonsangue, Duarte, & Meza, 2014), but little has been written about the roles and responsibilities of teachers in this pairing. Co-teachers adopt many different roles while working with their teacher partner. Some teachers do most of the content teaching daily while others reinforce and reteach material to groups (Fujimoto-Adamson, 2010; Tschida, Smith, & Fogarty, 2015). Additionally, little has been written about the connection between what co-teachers actually do as compared to what they think best practice is for co-teaching. Research conducted on co-teaching roles and teacher self-efficacy, or how effective teachers feel they are as co-teachers is likewise minimal. Friend & Cook (2009) suggest that the role between these partners be as equal as possible and that their roles be as well defined as possible.

Special education students in the co-taught environment often need clarification, re-teaching, and differentiation of the instruction for them to be successful. They have accommodations and modifications that must be met by the co-teachers. These include
repetition for ensured understanding, shortening of assignments, providing extra time, and having notes provided to them. For students to be in the inclusive classroom, it allows them to learn the general education curriculum in the same way that their general education peers do, and it provides them with social interactions with grade-level peers that improve social skills and friendship-making skills (Solis et al., 2012). Co-teachers meet the needs of both the special education and general education students in the class.

Initially, the special education teacher helped the teacher and the students but did not provide instruction (Solis et al., 2012). In order for the students, parents, and co-teachers to maintain respect, models and techniques for instruction were developed in order to ensure parity in the co-teaching collaboration (Friend & Cook, 2009). Having an agreeable assignment of roles and responsibilities between co-teachers would ensure that both teachers plan instruction, present curriculum, and learn to balance a co-teaching relationship simultaneously (Conderman et al., 2008). Teachers had to learn to get along and resolve various conflicts (Sileo, 2011).

Co-teaching is important because it provides access to the general education environment and curriculum in order to aid in the educational and social/emotional outcomes of the students (Cook & Friend, 1995). This approach also brings the learning strategies of the resource room to the general education classroom. Students learn the general education material and additionally have the material explained to them with a strategy, repetition, and re-teaching (Friend & Cook, 2009).

The theoretical framework behind this form of instruction has four main parts: co-instruction, co-planning, co-behavior management, and co-differentiation. These four aspects of co-teaching are an integral part of working together, creating a positive teaching environment and co-teaching relationship, and ensuring the success both of their professional endeavor and
how much their students learn and progress throughout the year (Conderman et al., 2008; Friend & Bursuck, 2009; Murawski, 2012).

**Co-Planning**

Co-teachers meet on a regular basis to discuss lesson planning, develop lessons together, assign each lesson to each teacher, discuss student progress, and ensure that the current direction the class is taking is meeting student needs. Teachers discuss which students need to make up work, retake tests, and need calls made home to parents. Co-planning is important because when teachers agree, each teacher knows what to expect. Planning also strengthens the relationship between co-teachers (Friend & Bursuck, 2009).

**Co-Instruction**

Simultaneously, co-teachers must focus one of the most important aspects of their job, which is to provide effective instruction to students that meet state and federal curriculum guidelines, using the most effective strategies and interventions for this population of students. The teacher whom is most fitted to present information, should be identified as the one to provide instruction. Both teachers should teach, but oftentimes, the general education teacher teaches the core of the content, while the special education teacher checks for understanding and reteaches the material to students who may struggle with the content (Murawski, 2012).

**Co-Behavior Management**

Managing student behaviors is another role that teachers must negotiate in order to have a well-run classroom experience. Teachers must determine whether one teacher or both teachers will assume this responsibility. Classroom rules must be established, and disciplinary consequences have to be well-defined. Student individual support needs should be aligned with school-wide behavioral rules and procedures. Classroom interventions should be positive and focus on supporting appropriate social skills (Morningstar et al., 2015). Additionally, discipline
can be applied to the whole class or to individuals (Bouck, 2010). According to Wasburn-Moses (2005), most teachers whether special education or general education, assume the responsibility of managing student behavior in a variety of classroom settings.

**Co-Differentiation**

Co-teachers must implement differentiation of the material for students who need the lesson presented in simpler terms. This includes making accommodations and modifications listed in the IEP. This may be conducted in a variety of ways. Co-teachers may present the material at both an advanced level and a lower level to provide targeted instruction for students who struggle and those who achieve mastery more easily. Likewise, the teachers can ask the class to self-identify how well they understood the lesson, and those needing assistance and re-teaching can be brought into a group to have a review of the material (Strieker, Gillis, & Yong, 2013).

**Co-Teacher Self-Efficacy**

Teacher self-efficacy refers to how well teachers perceive that they do their jobs. Self-efficacy is a person’s assessment of their own capabilities to organize and make decisions required to achieve certain performances (Fanni, Rega, & Cantoni, 2013). Self-efficacy of teachers has been associated in prior research with the effectiveness of teachers and favorable student outcomes (Shoulders & Krei, 2015). Co-teachers with increased self-efficacy were associated with giving students the kinds of experiences (like evidence-based learning strategies and behavior management) to obtain positive student outcomes. Co-teaching is positively associated with teacher confidence (Pancsofar & Petroff, 2013). Self-efficacy of teachers is improved primarily by obtaining more education in co-teaching practices or the teachers’
academic area. The more training in co-teaching, the higher the self-efficacy (Loreman et al., 2013; Sandholtz & Ringstaff, 2014; Streiker et al., 2013).

**Statement of the Problem**

Many teachers, both general education and special education, are assigned to co-teach for the first time, without being given clear guidance on how to co-teach (Perez, 2012). Sometimes they are given instructions by administrators that do not have any evidence base or even have the basis for best practice in co-teaching. New teachers are lacking the knowledge about co-teaching to understand what a good co-teaching pair looks like, and misperceptions exist as to what their roles should be (Dinnebeil, McInerney, & Hale, 2006). Even experienced co-teachers have not read enough of the literature on co-teaching or received adequate training from the school system to know how to keep parity in co-teaching and develop an equal division of labor by developing roles and responsibilities (Conderman et al., 2008). Further, co-teachers who have had no training tend to have lower self-efficacy than those who have had professional development (Loreman, Sharma, & Forlin, 2013). Although co-teaching is positively associated with teacher self-confidence (Pancsofar & Petroff, 2013), there is little research on the effect of co-teacher self-efficacy on co-teacher roles and responsibilities.

**Purpose of the Study**

The purpose of this study was to determine what roles and responsibilities the general education and special education teacher actually do in a co-taught classroom and what roles they think would be best practice to do. How these roles relate to personal teacher self-efficacy was also examined. This study used a survey design with participants being both general education and special education teachers who were in a co-teaching relationship. Questions developed for the study include the following:
**Research Question 1:** Is there a significant difference between general education co-teachers’ present roles and responsibilities and the roles and responsibilities that they consider to be best practice?

**Research Question 2:** Is there a significant difference between special education co-teachers’ present roles and responsibilities and the roles and responsibilities that they consider to be best practice?

**Research Question 3:** Is there a significant difference between special education and general education co-teachers’ perceived roles and responsibilities in co-teaching situations?

**Research Question 4:** Is there a relationship between general education co-teacher roles and responsibilities in co-teaching situations and teacher self-efficacy?

**Research Question 5:** Is there a relationship between special education co-teacher roles and responsibilities in co-teaching situations and teacher self-efficacy?

Co-teachers were asked questions about the many roles and responsibilities that exist and should be assigned to each teacher in a co-teaching relationship. They were asked to rate their relationship in a number of categories. Additionally, co-teachers were asked to reflect on their own feelings of self-efficacy.

**Significance of the Study**

This study provides a basis for co-teachers to think about what roles and responsibilities they actually do in a co-teaching relationship and what they consider to be best practice for each teacher as a general educator or special educator. Additionally, it examined whether co-teaching is predictive of teacher self-efficacy. This study contributes to the body of literature on co-teaching by examining roles of co-teachers and comparing it to co-teacher self-efficacy. It provides information to administrators that can give them the basis for informing co-teachers
how to proceed, and what roles and responsibilities may be a good starting point for a new collaborative pair. This division of labor is different for each set of co-teachers, but the results of this study give co-teachers and administrators an opportunity to proceed with knowledge about what most co-teachers actually do and what they think is best practice in terms of assignment of roles and responsibilities and how this relates to teachers reported self-efficacy.

**Limitations**

Limitations to this study include the issue that the survey in this study is not a validated instrument, and as a result the questions may not have accurately measured what they were intended to measure. Next, this survey was distributed in only an urban environment in the southwestern United States and did not include other geographic areas. Also, the total number of surveys distributed is unknown because of the process of survey distribution. The survey was lengthy (about 18 minutes), and some teachers may have chosen not to complete the survey because it took too much time for them to finish (Sapsford, 2007). Finally, survey-takers may have felt uncomfortable providing information that showed them in an unfavorable manner, and may have chosen not to answer the questions for that reason (Survey Fundamentals, 2017).

**Definition of Terms**

**Assessment**

The productive process of monitoring, measuring, evaluating, documenting, reflecting on, and adjusting teaching and learning to ensure students reach high levels of achievement. Both formative and summative assessment processes are used and are aligned with instructional and curricular goals and objectives (Interstate Teacher Assessment and Support Consortium, 2011).
Collaboration

A style of interaction between individuals engaged in shared decision making as they work toward a common goal. Individuals who collaborate have equally valued personal or professional resources to contribute and they share decision-making authority and accountability for outcomes (Interstate Teacher Assessment and Support consortium, 2011).

Co-Teaching

Two educators (one general education and one special education) plan, deliver, and assess instruction for a single group of students (Pugach, Johnson, Drame, & Williams, 2012).

Direct Instruction

A research-based instructional approach in which the instructor presents subject matter using a review of previously taught information, presentation of new concepts or skills, guided practice, feedback and correction, and independent practice (Friend & Bursuck, 2012).

Diverse Learners and Learning Differences

Diverse learners and students with learning differences are those who, because of gender, language, cultural background, differing ability levels, disabilities, learning approaches, and/or socioeconomic status may have academic needs that require varied instructional strategies to ensure their learning (Interstate Teacher Assessment and Support consortium, 2011).

General Education

Curriculum and instruction delivered to students, with and without disabilities. Students are not separated, and the majority of students spend their day in this classroom setting (NCLB, 2001).
**Inclusive Learning Environment**

Inclusion is a term which expresses commitment to educate each student, to the maximum extent appropriate, in the school and classroom he or she would otherwise attend. It involves bringing the support services to the student (rather than moving the student to the services) and requires only that the student will benefit from being in the class (rather than having to keep up with the other students) (Wisconsin Education Association Council, 2017).

**Individual Education Plan**

The Individualized Educational Plan (IEP) is a program designed to ensure that a child who has a disability identified under the law and is attending an elementary or secondary educational institution receives appropriate specialized instruction and related services (A Guide to the Individual Education Program, 2017).

**Resource Room**

This is the placement/setting in which the special education teacher delivers direct instruction in a restrictive environment for part of the day to students with disabilities (IDEIA, 2004).

**Special Education**

Specifically designed instruction for students with disabilities delivered by a school district or education agency in the general education or special education classroom (e.g., resource room, self-contained) (IDEIA, 2004).

**Students with Disabilities**

Children with disabilities are students eligible to receive special education services under the provisions of the P.L. 108-446, Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004).
Teacher Education

Education presented as a formal program to prepare elementary and secondary level teachers, including general education teachers and special education teachers (Pugach, Blanton, & Correa, 2011).

Teacher Self-Efficacy

A teacher’s judgment of his or her capabilities to organize and make decisions required to achieve certain types of performances (Fanni, Rega, & Cantoni, 2013).

Summary

Inclusive education came about because of laws such as IDEA (1997), No Child Left Behind (2001), and IDEIA (2004), that required that special education students be included in the general education environment and learn the general education curriculum. In order to meet the criteria of these laws, co-teaching was started to provide special education services to special education students in the general education classroom. The practice of co-teaching places a special education teacher and a general education teacher in one setting (Murawski, 2009; Friend & Cook, 2009). Without equality between teachers, the students sometimes interpret the pair as a teacher and an aide, which is not accurate (Solis et al., 2012).

The theoretical framework behind co-teaching includes the concept of inclusion and how it came about. Four points of the theoretical framework will be examined in the study: co-instruction, co-planning, co-behavior management, and co-differentiation (Conderman et al., 2008; Friend & Bursuck, 2009; Murawski, 2012). Teachers should both provide instruction of some kind. Teachers must have a time to plan together, and ideally this time should be arranged on the staff schedule of the school. Behavior management by both co-teachers is critical to building a positive learning environment. Differentiation must take place daily in the co-taught
classroom (Hamdan, Anuar, & Khan, 2015; Mastropieri, & McDuffie, 2007; Solis et al., 2012; Strieker, Gillis, & Yong, 2013).

Defining roles and responsibilities in a co-teaching relationship can ensure that teachers know what to do and what not to do in the classroom together (Beninghof, 2011). Having co-teacher roles and responsibilities in place can promote efficiency and ease of work together and make it clear to students what to expect from each teacher. Both teachers have expectations placed on them by administration that need to take place, and both teachers need to ensure student engagement, learning, and academic and social/emotional progress of the class, both general and special education students (Bronson, 2014; Fujimoto-Adamson, 2010; Kamens, Susko, & Elliott, 2013; Tschida et al., 2015).

Co-teaching may additionally be a predictor of teacher self-efficacy (Loreman et al., 2013). Teacher self-efficacy is in close association with teacher effectiveness, better learning opportunities, and other positive student outcomes (Shoulders & Krei, 2015). Teachers with a higher level of efficacy are more likely to have the motivation needed to manage the learning environment with the most effectiveness (Shoulders & Krei). Self-efficacy is critical for teachers to develop in teaching inclusive classrooms in a co-taught environment because of its role in regulating classroom teaching practice.
CHAPTER 2

Review of Literature

Co-teaching is the sharing of responsibilities in one classroom between a general education teacher and a special education teacher who plan and deliver instruction together in an inclusive environment (Friend, Cook, Hurley-Chamberlain & Shamberger, 2010; Murawski, 2009; Pugach, & Winn, 2011; Scruggs, Mastropieri, & McDuffie, 2007; Solis, Vaughn, Swanson, & McCulley, 2012). The division of labor between co-teachers is one aspect of co-teaching that, when more precisely defined, leads to better outcomes for teachers, students, schools, and communities (Bouck, 2010; Keefe, 2004; Morgan, 2016). Defined roles and responsibilities are necessary to ensure that co-teachers collaborate in the preparation and presentation of material in addition to implementing IEPs and differentiation of material for all students (Conderman et al., 2008; Morgan).

This chapter had three purposes. First, the roles and responsibilities cited in peer reviewed articles are reviewed and discussed. Second, studies on the perceptions of co-teaching are reviewed. Finally, articles on teacher self-efficacy were examined, in addition to studies that include co-teacher self-efficacy. Citations for data-based studies that have been peer-reviewed and published by an academic publisher were used for the three strands. Both qualitative and quantitative studies were reviewed. Studies that showed an outcome on the roles or the self-efficacy of teachers were included in the literature review. Only articles that discussed co-teaching roles and responsibilities and/or teacher perceived effectiveness were included.

Search terms used were co-teaching, roles and responsibilities of co-teachers, collaboration, collaborative consultation, inclusion, co-teacher self-efficacy, and teacher self-efficacy in the literature search. The following data bases were utilized: Education Full Text,
ERIC, and Academic Search Premier. The reference lists of all studies selected for the literature review were checked for related articles to be included in this chapter.

Roles and Responsibilities in Co-Teaching

Co-teaching is a service delivery model that brings the special education teacher into the general education class to provide services for special education students (Dieker & Murawski, 2003; Friend, Cook, Hurley-Chamberlain & Shamberger, 2010; Pugach, & Winn, 2011; Solis, Vaughn, Swanson, & McCulley, 2012). For best practice, the development of ideas that bring parity to the teachers in terms of providing instruction and guidance to all students in the classroom came about. Developing roles and responsibilities of co-teachers became significant because of changes in law and new requirements placed on schools and their staff. The research shows that well-defined roles and responsibilities make it possible for co-teachers to work better together in achieving the learning goals in a co-taught class (Bouck, 2010; Keefe, 2004; Morgan, 2016; Wasburn-Moses, 2005).

Roles and responsibilities are needed to ensure that each teacher knows what to do as instruction is presented in the classroom. This division of labor also provides equality by ensuring that each teacher has relatively the same amount of work (Benninghof, 2011; Conderman et al., 2008; Perez, 2008). The co-teaching relationship is a unique one because a general education teacher and a special education teacher work together to create a positive learning environment and share all of the responsibilities that one regular general education would do on his/her own. An equitable division is sought because the teachers are equals in the classroom, in terms of the expectations placed on them by the administration and in ensuring engagement, learning, and progress of all of the students in the class, whether they are general or special education students (Benninghof).
Morgan (2016) examined the practices of effective collaboration and co-teaching between a special education and a general education teacher. The researcher sought to determine what effective collaboration looked like, the benefits and challenges of co-teacher, and how collaboration supported inclusion. The role of the collaborative learning specialist was to provide specialized instruction for students, co-teach and co-plan with educators, and participate in effective collaboration with all professionals. Teachers who took part in the study were from Woodhill School, which is a rural K-6 elementary school with 160 students located in a small town in Vermont that provided specialized instruction both inside and outside of the classroom in addition to co-teaching.

Data were collected through personal reflection, interviews, teacher feedback, and student surveys. The role of the researcher was to be fully participating in the instructional process. Then, data were triangulated by using three different documents (i.e., survey responses, personal reflections, and expert interviews) that identified the same theme in each document (Morgan, 2016).

Themes identified were: effective collaboration, benefits to collaboration for all participants, and competing forces that function as inhibitors to collaboration. Accountability and flexibility emerged as means of change that created effective collaboration. The findings emphasized the importance of engaging in collaboration and co-teaching among all educators to promote inclusion in the school (Morgan, 2016).

Morgan (2016) concluded that co-teaching, when done effectively, has the power to improve learning outcomes for all students and promote inclusive practices in schools. Further conclusions were found that effective collaboration had a shared goal, agenda, and clear purpose. Working together may occur formally and informally and should be practiced thoughtfully and
intentionally. Through effective collaboration, instructional services became more cohesively integrated. The quality of instruction for all students increased. The students were happier, and the school community became inclusive of all learners (Morgan, 2016).

In another study, the research probed again into the work of two teachers and how effectively they practiced co-teaching together. Bouck (2010) examined the abilities of two co-teachers, one special education and the other general education, to work effectively in a classroom together. This issue was of interest because more special education students were gaining access to the general education curriculum through the materials presented in a general education classroom. The researcher wanted to examine what co-teaching looked like in this case and what can be learned about co-teaching from this particular case that added to the pedagogical literature (Bouck). An inclusive middle school classroom in an urban school district in Michigan was the setting.

To initiate the inquiry, Bouck (2010) made observations and conducted informal teacher interviews. Co-teaching was found to be a highly complex relationship where the teachers had to negotiate their roles. Roles that were identified were: instructor to the large class, instructor to individuals, disciplinarian to the large class, disciplinarian to individual students, classroom manager, supporter, gatekeeper, confidant, and friend. Co-teaching together enabled freedom but also constrained both co-teachers’ autonomy (Bouck).

However, some of the new roles constrained existing roles (Bouck, 2010). Recommendations of the author included focusing on the different roles available to both teachers, the spaces that needed to be shared and divided, and the constraints of this service delivery option. Bouck (2010) found that teachers had a common planning time, which made it easier to plan and work together. Students saw the special education teacher as more of an aid
and less of an equal teacher. Teachers needed to think about the different roles in the classroom and determine how their choices for roles in the classroom affected the choices of their co-teaching partner. Findings suggested that partners should examine how to keep from devaluing each other and how to enable each other so that the other teacher can begin new roles, as opposed to being regulated to what the educator’s title typically assigns them to (Bouck).

One important aspect of co-teacher collaboration was classroom management. Rytivaara (2012) examined the premises of collaborative classroom management in one classroom. The author asked about how co-teachers management the classroom during co-taught lessons. Two teachers were subjects of the study: one a general education teacher and the other a special education teacher, who both agreed to participate in the study. The setting of the study was a middle-sized elementary school in a suburban city of 90,000 people in Finland (Rytivaara).

Results included the fact that co-teachers worked together to plan and assign roles on a regular basis. Co-teachers also established plans for behavior management, instruction, and classroom management; they switched roles flexibly and regularly. One teacher led the instruction while the other worked with individual students. Then, they switched roles. Further, a significant part of teachers’ work was classroom management; sharing this responsibility supported teachers’ well-being. Because teachers were sharing, this also meant that co-teacher roles were not assigned permanently (Rytivaara, 2012).

Rytivaara (2012) also indicated that working with a difficult student was simpler in a co-teaching situation. Sometimes students needed extra adult attention and did not require the support of only the special needs teacher. Behavior problems did not become associated with individual students because there was more than one adult in the room, who also handled disruptive students. In this co-teaching arrangement, a teacher had much exposure to another
teachers’ presence, and could never hide his or her actions in the room. Co-teaching was found to be a fruitful environment for professional and personal learning (Rytivaara).

Researchers proposed that the study contributed to understanding about collaborative classroom management that may positively impact teachers’ attitudes toward teaching in a diverse classroom. Conclusions exhibited that careful planning was essential in managing a co-taught class. Working as a team played an important role in the teachers’ job satisfaction, which was reflected in the class atmosphere. Open communication was a very useful tool for the teachers to put to use during the lessons (Rytivaara, 2012).

Considering co-teachers’ roles and the work that they did on a daily basis was valuable. Wasburn-Moses (2005) used a survey to investigate teachers’ daily work lives, their roles and responsibilities, the positions they held, and the effectiveness of their teacher preparation. Teaching and non-teaching roles such as working with other professionals, working with students, and completing paperwork was the focus. Each of the roles was related to three demographic factors: total number of years teaching, highest degree held, and number of endorsements held. One hundred ninety-one (191) participants who taught students with learning disabilities were randomly selected from high schools in the state of Michigan, where 378 public high schools were randomly selected for the study (Wasburn-Moses).

Results indicated many special education teachers also taught study skills and functional skills. Fourteen percent (14%) reported being in a co-taught class, and spent 47% of their time giving direct instruction. Co-teachers spent 20% of their time re-teaching students in the co-taught class, and they reported working with general education students 71% of the time. In conclusion, Washburn-Moses (2005) ascertained that given the many roles and responsibilities
that special education teachers handled daily, they must set as their priority the use of learning strategies among all learners in the co-taught classroom (Wasburn-Moses).

Wasburn-Moses (2005) found that the field of special education was changing to drive results in student outcomes and noted that as special education programs required co-teachers to be knowledgeable in every subject, they also became masters of no subject area. Researchers recommended that first priorities of leaders and administrators be the roles and responsibilities of the special education teacher which changes daily, accompanied by teaching a wide array of subjects (Wasburn-Moses, 2005).

How to help teachers who are new to co-teaching become successful was another crucial issue in examining co-teacher roles and responsibilities. Keefe (2004) researched the challenges of co-teaching and sought to discover what factors would help other co-teachers with the inclusion of students with disabilities into general education classes in high schools. Eight general education and eight special education teachers who were co-teaching were invited to participate. Of these 16 co-teachers, three teachers were general education; four teachers were special education; and one was the manager of the special education teachers. Years of experience ranged from two to 20. Cactus Ridge High School, a suburban high school in the Southwestern United States with approximately 2700 students was the setting of the study (Keefe).

Interview questions were developed and three major themes emerged: the nature of collaboration, roles of the teachers, and outcomes for students and teachers (Keefe, 2004). Results indicated that the teachers struggled with their roles within a co-teaching context. Teachers were left to determine how to work together. Some teachers found a division of roles involving the general education teachers taking responsibility for curriculum and the special
education teachers taking responsibility for modifying the curriculum for students with special needs. Throughout, teachers did not feel prepared for the demands that co-teaching placed on them, particularly regarding collaboration skills, content knowledge, and knowledge of special education (Keefe).

Conclusions brought forth that the relationship between the co-teachers appeared to be the most relevant factor in how successful the teachers viewed co-teaching and how likely they would be to continue co-teaching. Identifying co-teaching practices that support learning for all students was an issue that was also vital to consider, particularly when examining student outcomes (Keefe, 2004).

Further conclusions suggested that teachers should be better prepared for the demands of co-teaching through pre-service teacher instructional programs. Ideally, preservice teacher training programs should have modelled co-teaching, especially for special education teachers who need greater knowledge about high school content area curriculum. General education teachers needed more education in the area of disabilities and the need for modifications. Knowing how to collaborate was key, particularly how to connect with each other about roles and responsibilities. Relations between co-teachers were the most important factor in finding success for the co-teachers. Teachers in this study made it clear that they wanted to have input about selecting their co-teaching partner (Keefe, 2004).

Morningstar et al. (2015) purposed their study to identify inclusive classroom practices that support participation and learning in the general education curriculum for all students. Participants were the students and co-teachers in schools that were considered exemplary for inclusive practices. Six knowledge development sites identified by the SWIFT Center (National Center on School-wide Inclusive School Reform) as having excellent inclusive school practices
were the sites of the setting. All six of the schools were observed twice over a one-year period. Methods included classroom observations focusing on classroom interactions and arrangements, and a comprehensive observation checklist was utilized (Morningstar et al.).

Results indicated that general education and special education teachers were in each class, and the teachers worked as a team to organize and deliver the material and provided tiered instructional supports. Roles of the teachers were fluid. Two of the teachers engaged in multiple instructional roles across each lesson. In conclusion, Morningstar et al. (2015) found that all students spent most of their school day in the general education environment with the specialized supports that they needed.

Furthermore, schools often did not want to take part in changes in service, and this led to obvious differences between what evidence based knowledge was and what practices were actually taking place in the classroom. Researchers detected insights into the routine of teaching and learning that provided a leading way to academic achievement for students with a wide range of support needs. Data exemplified for policymakers and teachers the extent to which classroom-level supports and services could be changed to improve academic and functional outcomes for all students (Morningstar et al., 2015).

Other aspects of roles and responsibilities of co-teachers in the literature review was how well-trained pre-service teachers were and whether they were receiving the instruction and experience they needed as student teachers. Dinnebeil, McInerney, & Hale (2006) conducted a research study to understand the roles and capabilities of representatives from four groups: early childhood special education (ECSE) student teachers, general education teachers with whom the student teachers worked, parents of the children whom the student teachers served, and the student teachers’ supervisors. These authors considered the perceived roles and responsibilities
of the student ECSE teachers and whether the ECSE teachers thought it was salient to provide direct training in preparation to become a professional in any of these roles. The participants selected for the study came from different locations around the United States: 23% lived in the Northeastern United States; 38% lived in the Midwest; 22% resided in the South; and 17% lived in the Western United States (Dinnebeil et al).

The instrument was an open-ended survey that was coded with the teacher roles and responsibilities being identified. Results showed that ECSE student teachers achieved consensus on 22 of the 44 responsibilities listed on their questionnaire. Roles and responsibilities listed in the survey were: assessor/monitor, consultant/coach, direct service provider, lifelong learner, service coordinator, and team member. The early childhood general education teachers reached consensus on 14 of the 26 responsibilities listed on their questionnaire, and the parents came to consensus on 15 of the 29 responsibilities listed. The supervisors met consensus on 36% of the responsibilities listed on their questionnaire (Dinnebeil et al., 2006).

Participants identified a range of responsibilities associated with the many diverse roles of the student teachers. Authors considered the roles of the special education teacher both in the co-taught class and the special education environment (Dinnebeil et al., 2006). Results disclosed that there needs to be improved awareness of the perspectives of both the general education teacher and the student teacher, which could be addressed with better training of special education, general education, and pre-service teachers. Researchers found it surprising that student teachers had different perspectives in their experiences, which were dependent on the point of view of each pre-service teacher. Evidence-based instructional practices promoted learning and generalization of skills for ECSE students. Working together required consistent practice in routines and activities. The field of ECSE instruction needed to review what exactly
an effective student teacher did during visits to children on his or her caseload. Defining and improving student teacher ECSE service was identified as critical in finding successful student outcomes (Dinnebeil et al.).

Considerations that should be made in order for a co-teaching pair to work successfully together were examined in the next article. Weiss & Lloyd (2002) sought to find the congruence between roles and actions of secondary special educators in co-taught classrooms. They inquired about the differences in instructional procedures between co-taught classrooms and classrooms that had exclusively special needs students. Participants were three educators at the high school level, who provided services in co-taught and special education settings. A middle school and high school of a rural local education agency in the Mid-Atlantic region of the United States were the settings of the study (Weiss & Lloyd).

Variables involved the roles and instructional practices of special educators in both co-taught and special education classes. Themes identified were: definitions, roles, instruction, and actions. These descriptors were compared to the roles and actions in the special education class and the co-taught class (Weiss & Lloyd, 2002).

Results indicated that certain roles should be established between the co-teachers: providing support, providing content in a separate setting, providing separate content in the co-taught class, and teaching as a team. Authors discussed the fact that not all of the co-teachers had a common planning time, and they found there was little consistency in training for co-teaching. Few teachers changed their instructional roles based on the instructional task. Special education teachers circled the room, presented content, and managed the class. Clear understanding between the special educators and the administrators was lacking in terms of how co-teaching would be used to deliver specially designed instruction (Weiss & Lloyd, 2002).
Authors intended to interpret the meanings and actions that special educators brought to co-taught classrooms. Conclusions included that there were barriers for the special education teachers, including clear gaps in skill levels of students with and without disabilities found in the co-taught class. Instruction that teachers introduced in the co-taught environment was further explored at a later time in the special education class. When in the co-taught class, the special education teacher almost always took on the role of the aide of the classroom. Because of the issues stated above, Weiss & Lloyd (2002) concluded that co-teaching at the secondary level is difficult for special education teachers.

Additionally, the teachers in this study participated in instructional activities that focused on small, explicit parts of educational tasks in the special education room; and they were not able to accomplish this in the co-taught classroom. Special educators circulated, presented content, and managed the class in the co-taught environment. However, in the special education classroom, these teachers used direct instruction, behavior modification, and strategy instruction to meet their goals for instructions. Co-teaching, according to the interviews, was conducted to get students with disabilities into the general education environment without thought about how to best proceed with such plans for co-teaching. Due to this, authors concluded that co-teaching is not always the correct service-delivery model for all students, teachers, or schools (Weiss & Lloyd, 2002).

In conclusion, the literature on roles and responsibilities in co-teaching showed common issues. Maintaining fluid and well-defined roles increased learning for students and created positive outcomes for the school and community (Bouck, 2010; Morgan, 2016; Morningstar et al., 2015; Rytrivaara, 2012). Other researchers further found that co-teachers should use professional practices such as team teaching and defining roles and responsibilities (Morgan,
Training in co-teaching led to positive outcomes and more well-defined roles and responsibilities for co-teachers (Dinnebeil et al., 2006). The studies on roles and responsibilities indicated that teachers need to plan, instruct, and manage together as a team as they define their roles and responsibilities (Bouck, 2010; Keefe, 2004; Rytivaara, 2012; Wasburn-Moses, 2005).

**Co-Teacher Perceptions**

Many studies have been conducted to measure co-teachers’ perceptions of their co-teaching situation, and these studies are mainly in the form of surveys. The research examined here showed that co-teachers had generally positive perceptions of co-teaching; it further indicated that teachers stated that they needed a common planning time and training on co-teaching to be capable of doing their jobs well as co-teachers (Austin, 2001; Gurgur & Unuzer, 2010; Hang & Rabren, 2009; Mumba, Banda, & Chabalengula, 2015).

Austin (2001) conducted a study to investigate the perceptions of co-teachers currently in the classroom. The author looked at what practices co-teachers found effective and what they thought was needed in teacher preparation to inform future teachers about co-teaching. The study investigated which teacher did more in the co-taught classroom: the special education teacher or the general education teacher. The participants were 139 co-teachers from nine school districts in northern New Jersey who taught Kindergarten through 12th grades, and inclusive practices were well established in these districts.

Procedures for this study involved using an equal number of general education and special education co-teachers, which were chosen randomly from the survey responses. The Perceptions of Co-Teaching Survey (PCTS) was utilized. Demographic information and
questions related to collaboration were gathered. An interview was developed, and participants indicated a willingness to participate in a follow-up interview (Austin, 2001).

T-tests of paired samples on the demographic categories were analyzed (Austin, 2001). The results included the fact that most of the co-teachers taught social studies, science, English language arts, and math classes at the secondary level. Significant percentages of both general and special educators indicated that they believed that the general education teacher did most of the work in the co-taught classroom (p=.001). Most of the co-teachers acknowledged that they should meet daily to plan lessons. Co-teachers agreed that they should establish and maintain specific areas of responsibility and highly valued scheduled planning time, administrative support, and in-service training (Austin).

In conclusion, the majority of the co-teachers had not volunteered for the experience but considered co-teaching a worthwhile experience. Further, the authors suggested that school administrators develop and promote a model of collaboration that is supported by research and practice. Educational systems should have effective in-service training for co-teachers, and schools should respond to the expressed needs of co-teachers with respect to logistical and administrative support (Austin, 2001).

A review of student records also showed whether students benefited from co-teaching. Hang & Rabren (2009) developed surveys in order to identify perspectives of teachers and students with disabilities in order to determine the effectiveness of co-teaching using student academic and behavioral records. The participants included 31 general education and 14 special education teachers who were in their first year of co-teaching. These teachers represented 82% of all the co-teachers in the school system. The authors included 58 students with disabilities who represented 52% of all students with disabilities. Seven schools participated within a
Southeastern public-school system: four elementary, one middle school, and one high school. Student SAT scores, discipline referrals, and tardy and attendance records from two school years were gathered to determine whether students showed social and/or academic progress (Hang & Rabren, 2009).

Students and teachers completed surveys, and analysis was conducted to determine if typical gain was achieved by the co-taught students with disabilities as compared to the entire student population. The Teacher’s Perspective and the Student’s Perspective Surveys were designed to identify co-teacher and student attitudes on co-teaching and employed a Likert scale. Once data were gathered, a one-way ANOVA was used to compute statistics (Hang & Rabren, 2009).

All teachers believed they needed common planning time. The general education teacher believed that they were primarily responsible for monitoring student behaviors. Special education teachers indicated the same belief that general education teachers assumed most of the behavioral classroom management duties. In conclusion, teachers and students had positive perspectives of co-teaching. Teachers perceived that students with disabilities had higher academic performance in co-taught classes. This contributed positively to student behaviors. However, findings from student behavioral records were in contrast with the opinions of the respondents. Students with disabilities had more absences and behavior referrals, but SAT scores improved among the students with disabilities (Hang & Rabren, 2009).

Another aspect in the literature was one school’s approach to co-teaching, and whether the school could successfully provide a quality education to both special education and general education students. Leatherman (2009) examined the dynamics of attitudes, collaboration, and administration within the inclusive classroom, which adds to the complexities of schools.
providing appropriate education for all students. Participants of the study were eight general education teachers, three special education teachers, three instructional assistants, and the principal in a two-year research project on studying the inclusive program at an elementary program in the rural Midwest.

Multiple aspects of one elementary school’s implementation of an inclusion program were the subject of this study (Leatherman, 2009). Case-study designs investigated the insights and perceptions of the complexities of collaboration and co-teaching. In the second year of the program, results of the successful inclusive program were produced and had creative scheduling and planned collaboration time included. Team-teaching matches were successful for the teachers and students in the co-taught class (Leatherman).

Conclusions identified themes that emerged through the voices of the teachers, including scheduling challenges, team-teacher characteristics, and modeling and support in the co-taught classes. Findings presented both success and problem-solving aspects of the co-taught class (Leatherman, 2009). Issues of collaboration and co-teaching were explored in the study. Results pointed to better preparation for co-teaching through professional development or pre-service teacher university programs (Leatherman).

In many schools, training in co-teaching was needed, especially among content area instructors. Mumba et al. (2015) asked about the impact of inquiry-based instruction in co-taught high school science classes. Participants were 62 chemistry teachers in different school districts in the United States. One of the outcomes of the study was information on teachers’ views on the benefits and challenges of inquiry in inclusive chemistry classrooms. According to the study, the teachers were enrolled in chemistry education classes in 2013 at a university located in the Midwest of the United States. The courses were about the concept of knowledge
and inquiry instructional knowledge. Twenty-one (21) teachers had bachelor’s degrees in biology and an endorsement in chemistry. Forty (40) teachers had bachelor degrees in chemistry with endorsement in physics or biology, and 45 teachers had masters’ degrees in education.

Data collection was conducted utilizing a questionnaire that was developed by Staer, Goodrum, and Hackling (1998). Many of the teachers had little knowledge about co-teaching, which they attributed to a lack of training. Teachers reported finding the following benefits of inclusive teaching practices: student engagement, student seeking explanation through activities, group work benefitting both special education and general education students, and students taking ownership of the results. Responses of teachers also indicated challenges for teachers: meeting curricular goals through planning; classroom management; special education students requiring extra time; students not having the same level of competence; and achieving good high-level and low-level student pairs (Mumba et al., 2015).

Results further indicated the following benefits to students in inclusive chemistry classes: development of problem solving skills, learning scientific procedures, students’ obtaining ownership of results, development of personal skills, and motivation of students to learn. Both general education and special education students had many difficulties with the chemistry curriculum, including difficulties in written expression, ability to connect ideas, and behavioral issues (Mumba et al., 2015).

Another examination of co-teacher perceptions was conducted to determine what procedures worked best for teachers in a co-taught class. Gurgur and Uzuner (2010) analyzed the opinions of special and general education teachers on the procedures they followed in the co-taught classroom. A survey collected data on teacher opinions, teacher preparation, opinions of the co-teachers about planning meetings, and opinions of co-teachers on co-teaching. The
participants were one general education teacher, one special education teacher, and 35 second grade students, including nine special education students. The setting was a school certified by the Ministry of National Education and located in a low socio-economic neighborhood of Ankara, Turkey.

Qualitative methods included semi-structured interviews and observations during planning meetings, and reflective journals utilized with the classroom teachers (Gurgur & Uzuner, 2010). Results indicated that the general education teacher was confident that she could meet the needs of her students. However, this teacher had very little knowledge about co-teaching. Planning meetings were found to be vital to determine the roles and responsibilities of the teachers. The general education teacher had pre-made lesson plans that could only be adapted but were not developed together between the co-teachers; this teacher also did not approve of the use of co-teaching models. The authors concluded that both co-teachers receive training and have a designated time to meet and plan together (Gurgur & Unuzer).

Researching one co-teaching team’s perceptions revealed whether they had a positive working relationship and how this affected student outcomes. King-Sears, Brawand, Jenkins, & Preston-Smith (2014) sought to triangulate data elicited from one pair of co-teachers and their students to determine how co-teacher perceptions may or may not align with that of their students. Researchers pondered how co-teachers divided roles and responsibilities when presenting new content to the co-taught class and whether students and teachers agreed or disagreed on their experiences in co-teaching. The participants were one general education and one special education teachers, each with a master’s degree. The general education science teacher had nine years of experience co-teaching. The special education teacher was in his third year of co-teaching. The setting was a school system in the South Atlantic region in the U.S. that
was recommended to participate by a high school administrator and co-teachers who were willing to commit to the requirements of the study (King-Sears, et al.).

Procedures in this study involved using video recordings for observation and analysis of the two co-teachers’ behaviors. Two surveys were used to gather information on teacher and student perceptions (King-Sears et al., 2014). Results indicated that teachers were observed managing behavior, presenting instruction, giving directions, responding to students, responding to teachers, monitoring, and questioning. The science teacher presented the science content to the large group 66% of the time, and the special education teacher presented content 18% of the time.

From the survey, the teachers reported overwhelmingly that they had a good working relationship. Students perceived the science teacher was the one who planned instruction and graded classwork. However, the students indicated that they learned best from both co-teachers and both explained things most of the time. In the conclusion, students perceived that the co-teachers had the same job. The model of team teaching was so fluid that it was very clear that both teachers were leading the instruction (King-Sears et al., 2014).

Another study on perceptions considered how willing and able teachers were to work together in an inclusive classroom. Blecker and Boakes (2010) measured how much teachers wanted to instruct students with disabilities in the inclusive environment. Authors wanted to find out what the skills, knowledge, and dispositions of general and special educators were in a co-teaching situation. Researchers compared teacher perceptions and readiness for the co-taught class based upon their years of experience, and they also measured teacher perceptions of school climate regarding co-taught classes. The participants were teachers of grades K-12 from 54
schools in the three southern counties of New Jersey: Atlantic, Cape May, and Ocean. A total of 546 teachers responded to the survey (Blecker & Boakes).

Development of the instrument included statements about teachers’ perceptions of their school climate, and teachers’ attitudes and readiness for inclusion. After the survey was available for a total of four months, a series of independent t-tests were run on the data (Blecker & Boakes, 2010).

Findings included a high agreement with the statement that students with learning disabilities profit from friendships, followed by encouraging full participation of students with disabilities, and providing students with disabilities as much of the curriculum as possible. Authors also found that students were more likely to use a variety of materials and vary the pace of learning. Co-teachers showed highly similar responses to chunking parts of assignments, using interest centers, and providing templates or graphic organizers (Blecker & Boakes, 2010).

Blecker and Boakes (2010) concluded that teachers support the concept that children with disabilities benefit from interactions with their non-disabled peers. In general, teachers had concerns about the lack of planning time and professional development. Teachers with more than seven years of teaching experiences had greater concerns about the lack of professional development in co-teaching than co-teachers with fewer years teaching. Special educators used strategies for differentiation more often than their general education counterparts. The researchers suggest that there is a need for continued in-service trainings in the area of collaboration (Blecker & Boakes).

Focusing on one population of students with disabilities, the deaf, enlightened researchers on how teachers perceive hearing impaired students. Eriks-Brophy and Whittingham (2013) wanted to determine teacher attitudes and perceptions of students with hearing loss who were in
the general education classroom. This research study also examined the extent to which classroom teachers felt prepared by their training to work effectively with this population. Researchers analyzed teachers’ knowledge-base on the impact of hearing loss on communication, language development, and learning. The participants were 63 respondents to a survey in a school district of the Ottawa-Carleton region of Ontario, Canada (Eriks-Brophy & Whittingham).

A questionnaire implemented in the study was developed from published literature related to teacher attitudes, knowledge, and skills that have been documented as being fundamental to successful inclusion (Eriks-Brophy & Whittingham, 2013). Conclusions and results indicated that most respondents showed that their hearing-loss students were taught in a separate room by a trained professional. As high levels of the effect of inclusion on the hearing loss students were reported, high levels of effects of inclusion on teacher workload were likewise found. Teachers had favorable attitudes toward the inclusion of students with hearing loss in the general education classroom and were confident in their ability to teach these students. Likewise, teachers were knowledgeable about the effects of hearing loss on language development and learning (Eriks-Brophy & Whittingham).

Inclusive models for students with hearing loss not only required that teachers display a positive attitude about inclusion, but also that teachers had basic knowledge about language development and how classroom participation and learning are affected by hearing loss (Eriks-Brophy & Whittingham, 2013). Supports and accommodations were communicated clearly to the teachers to ensure that co-teachers acquire the needed skills. Providing teachers with such support was a decisive step toward respectful, responsible, and collaborative strategies that were found in successful inclusion (Eriks-Brophy & Whittingham).
In conclusion, survey studies on co-teacher perceptions had some elements in common. Co-teachers reported that there should be maintenance of specific responsibilities; however, defining roles and responsibilities and finding time to plan together was a challenge (Austin, 2001; King-Sears et al., 2015; Leatherman, 2009). Further challenges included meeting academic goals through enhanced planning, addressing the needs of all students which may include extra time, and students having varying levels of competence with the curriculum (Mumba et al., 2015). As teacher attitudes toward co-teaching improved, student attitudes also increased. This led to more positive student behaviors (Eriks-Brophy & Whittingham, 2013). Training was another common theme noted in the literature review (Gurger & Unuzer, 2010). Leatherman (2009) identified the need for more thorough and consistent training programs to prepare teachers for the experience of co-teaching. Survey results indicated that teachers needed a common planning time and training (Austin, 2001; King-Sears et al., 2015; Leatherman, 2009). Co-teachers also noted that mutually positive relationship between co-teaching pairs was important (Eriks-Brophy & Whittingham, 2013). These criteria should be met despite challenges in creating and meeting these positive circumstances to produce positive co-teaching experiences.

**Teacher Self-Efficacy**

Teacher self-efficacy refers to how well teachers perceive that they do their jobs. Self-efficacy is a person’s judgment of their capabilities to organize and make decisions required to achieve certain types of performances (Fanni, Rega, & Cantoni, 2013). According to Bandura (1994), there are four main sources of influence on self-efficacy: mastery experiences, vicarious experiences, social persuasion, and emotional states. Mastery experiences were the memories of
previously successful experiences that people may remembered when facing another situation. Vicarious experiences came from the observation of peers that became a process of comparing oneself to other people. Social persuasion derived from positive reinforcement; this implies that a person’s self-efficacy increased when encouraged or motivated by other individuals. Emotional states were related to the way people felt in a certain moment. People with a high sense of self-efficacy used previous emotional states to improve their current performance (Fanni et al.).

Self-efficacy of teachers has been associated in prior research with the effectiveness of teachers and favorable student outcomes (Shoulders & Krei, 2015). Teachers with a high perception of self-efficacy were associated with giving students the kinds of experiences they needed to obtain positive outcomes. The effectiveness of teachers was essential for students to achieve in an academic setting. Teacher beliefs about self-efficacy influenced teacher instructional practices. When teachers had confidence in their teaching ability, they were more willing to try innovative instructional practices. Students who were highly engaged perceive their teachers as caring. Likewise, a well-structured classroom was characterized by high academic expectations. Teachers who had a greater sense of self-efficacy tended to have the motivation needed to manage the learning environment successfully (Shoulders & Krei).

For teachers to develop as teachers in inclusive classrooms, teacher self-efficacy was salient due to its role in regulating classroom teaching practice. The skills required involved differentiating instruction, adjusting and modifying curriculum, and adopting methods that satisfy the learning needs of a wide variety of learners. Possibly because of a result of low feelings of self-efficacy in inclusive teaching practice, some educators disclosed feelings of
anxiety about the implementation of co-teaching, viewing themselves as under-trained and not skilled enough to meet the increasing demands of a diverse classroom (Shoulders & Krei, 2015).

Teaching was related to many educational outcomes that were meaningful, including teachers’ enthusiasm and commitment. In a study on teacher self-efficacy, Fanni et al. (2013) began with the concept that the self-efficacy construct is proposed as a tool to measure how teachers’ perceptions of being able to use technology affects the teachers’ perceptions of being an effective teacher. Participants were teachers in Brazil and South Africa and were selected based on whether they had access to computer facilities, showed a great motivation in the learning experience, and lacked prior computer skills.

A questionnaire was utilized, and an analysis of changes among the teacher perceptions throughout the computer training program was conducted. Pre-test and post-test assessments were given to the group and experimental group to measure self-efficacy. Self-efficacy increased in the group that received the computer training (Fanni et al., 2013).

Results pointed toward the conclusion that teacher self-efficacy showed significant improvement when utilizing computers. Researchers suggested continuing investigations in the use of computers to increase self-efficacy among teachers in these countries, and a more suitable tool for measuring the use of computers needed to be developed. Although teachers mastered the computer program, these teachers did not feel that they had become better at providing instruction. However, teachers did not only need to know how to properly use computer software, but also how to supplement and utilize knowledge students gained on the computers (Fanni et al., 2013).

In addition to the use of computers, researchers also studied the self-efficacy of mathematics teachers. Stevens, Aguirre-Munoz, Harris, Higgins, and Lui (2013) wanted to
determine the extent to which teachers with varying levels mathematical background had unique self-efficacy development over time. Central to the purpose of this study was the question of whether two groups of teachers had the same patterns in gains in self-efficacy and whether they rated themselves as being more self-efficacious after a professional development. Participants were 65 middle school-level mathematics teachers who were part of the West Texas Middle School Math Partnership project. The teachers were provided instruction in mathematics through this program at four different institutions of higher education in southwest Texas.

Procedures in this study involved dividing participants into two groups based on whether they had taken coursework beyond college algebra, a course which typically includes the teaching of inequalities, equations, and binomial theorem. The sum of mathematical courses was calculated, and groups who took these courses were created. One group took only algebra, and another group consisted of teachers who had taken college-level mathematics in addition to algebra. A pre- and post-test were administered before and after the professional development in advanced mathematics (Stevens et al., 2013).

Results reviewed mean scores by group and independent t-tests for each efficacy measure across time points (Stevens et al., 2013). These tests revealed increasing self-efficacy scores and statistically significant differences between the groups. One group that took fewer advanced-level college math classes showed much greater gains in self-efficacy than the teachers who had only taken more advanced-level math classes in college. Conclusions considered that teachers with different mathematical backgrounds showed different levels of self-efficacy gains as they participated in the professional development (Stevens et al.).

In reviewing the literature on self-efficacy, the relationships between principals and teachers and how this impacted teacher self-efficacy was also been explored. Calik, Sezgin,
Kavgaci, and Dilinc (2012) investigated the relationships between school principals’ leadership behaviors and self-efficacy of teachers for all teachers in the school. The participants were 328 teachers, and the setting was public elementary schools in the center of Ankara, Turkey, during the 2010-2011 school year. The surveys were taken over a period of three years. The Instructional Leadership Scale, Teachers’ Sense of Efficacy Scale, and the Collective Efficacy Scale were used to gather the data for the study (Calik et al., 2012).

Results showed that instructional leadership had a significant direct and positive impact on collective teacher efficacy. Teacher self-efficacy affected the relationship between instructional leadership and collective teacher self-efficacy. Conclusions disclosed that school principals’ instructional leadership behaviors had a positive and significant effect on teachers’ self-efficacy. Instructional leadership affected the collective efficacy indirectly through teachers’ self-efficacy (Calik et al., 2012).

Professional development programs further demonstrated much success in improving teacher self-efficacy in co-teaching. Another study involving teacher self-efficacy by Sandholtz and Ringstaff (2014) measured the extent to which teachers’ participation in a three-year professional development program enhanced teacher self-efficacy and prompted changes in science instruction in primary elementary grades. Participants were teachers from 16 schools in Northern California.

Procedures of the study involved providing professional development over three years and focused on increasing teachers’ content knowledge and the use of research-based instructional strategies in science. Teachers received instruction to build subject matter knowledge while also learning specific learning strategies. A survey measuring self-efficacy,
interviews of the teachers, and classroom observations were conducted to gather data (Sandholtz & Ringstaff, 2014).

Sandholtz and Ringstaff’s (2014) study exhibited that teachers’ overall self-efficacy in teaching science increased during and after the professional development sessions. Teachers disclosed improvement in outcome expectancy efficacy; their beliefs that student learning in science depended on effective teaching also improved across the three-year period. The authors concluded that there needed to be progress in teachers’ preparedness to teach science and the potential of professional development to increase the teachers’ self-efficacy in science instruction. Gains in self-efficacy corresponded with changes in instructional practices in science, especially the use of student participation activities (Sandholtz & Ringstaff).

Other studies also signaled that professional development results in higher levels of self-efficacy for teachers. Anderson and Standerford (2012) scrutinized the self-efficacy of teachers and the effectiveness of their instruction in a new spelling program. Researchers purposed to discover the reasons that teachers decide to alter their teaching, what practices actually changed, and how a school-university partnership served to alter the practices and beliefs of three teachers over nine months. Rural school districts in the upper Midwest serving about 2,500 students in K-12 were the setting, and three teachers participated. The university and the school district had a quasi-Professional Development School relationship for almost 20 years (Anderson & Standerford).

Case analysis design was selected to examine the complexity of the school-university partnership. Methods such as informal conversation with the professors about the need to improve spelling instruction were used to collect data. Each of three second grade teachers were interviewed, and several spelling lessons were observed for the study. Further, the researchers
collected and analyzed curriculum materials, student work, and materials developed to present the changes to colleagues. Expertise the researchers brought to the study along with the depth of the data allowed them to construct explanations of the consequential and causal components of the case (Anderson & Standerford, 2012).

Findings contained what changes were made to the curriculum and how teachers’ paradigms of teaching and learning changed. Students improved in spelling and writing, and the instruction became differentiated across the curriculum. Teachers’ beliefs about spelling were considered more transformational in learning the new spelling program, which affected teachers’ behaviors and beliefs across their entire teaching practice in addition to teachers’ sense of self-efficacy. Teachers felt they had the power to make changes within their work contexts and had both the will and the capacity to improve their instruction (Anderson & Standerford, 2012). As teachers changed their beliefs or actions, they improved in teaching practices. Teachers believed they could positively affect student learning and continue experimenting with new ways of teaching, asking questions, and building relationships with colleagues who support them in their efforts. Participants in this study grew in confidence as they implemented and experienced success with the new spelling program (Anderson & Standerford).

Thus, one of the commonalities indicated most in these studies was the concept that teachers who had training in a certain field such as co-teaching, teaching mathematics, or spelling had an overall higher sense of self-efficacy in their teaching practice than those who had less training. More knowledge led to increased levels of perceived effectiveness (Fanni et al., 2013; Sandholtz & Ringstaff, 2014; Shoulders & Krei, 2015; Stevens et al., 2013). Other elements appeared to cause increased perceived effectiveness. Standardized professional practices in implementing a school-wide curriculum initiative improved self-efficacy (Anderson
& Standerford, 2012). Strong school leadership also increased a school-community’s perceived self-efficacy (Calik et al., 2012).

Co-Teacher Self-Efficacy

The self-efficacy of co-teachers had a limited research basis. Of the studies in the literature, co-teachers who had training (either professional development or pre-service classes at a university), a set planning time with their co-teacher, and support from administration report higher levels of self-efficacy in the co-taught classroom. Co-teaching is positively associated with teacher confidence (Pancsofar & Petroff, 2013). Other studies indicate that co-teachers, both general education and special education, frequently had no preparation or training in co-teaching and felt somewhat anxious about co-teaching. Their self-efficacy was low due to a lack of knowledge in the field of co-teaching (Loreman et al., 2013).

Shoulders and Krei (2015) conducted a study to compare the differences in rural high school teachers’ self-efficacy in student engagement, instructional practices, and classroom management in inclusive classes using selected teacher qualities. The study included 256 teachers in rural areas in Tennessee and Indiana.

A survey was developed at Ohio State University that measured teacher self-efficacy in high school teachers; measured teacher attitudes toward students; and covered the areas of instruction, management, and engagement. A one-way analysis of variance was used to analyze the data (Shoulders & Krei, 2015).

Researchers concluded that individual student engagement, instructional practices, and classroom engagement were all notable. Classroom management was found particularly significant. Furthermore, teachers with more education had better classroom management. Teachers with more teaching experience scored higher in engagement, instruction, and classroom
management. However, these experienced teachers did not have the same significance in self-efficacy for student engagement. No significant differences were found between the means of this group and teachers with either zero to four or five to 14 years of experience. Also, teachers with an education level above a master’s degree had no significant difference in student engagement compared to teachers who only had a bachelor’s or master’s degree. Results contrasted the researchers’ expectations that experienced and highly educated teachers would think of themselves as more efficacious in this area. All groups had relatively positive views of their efficacy. Benefits of helping teachers develop strong beliefs in self-efficacy was found in research that shows positive relationships between teacher efficacy and student outcomes (Shouders & Krei, 2015).

Other studies probed into whether in-service and pre-service trainings improved self-efficacy of co-teachers. In a study conducted by Pancsofar and Petroff (2013), the researchers wanted to determine whether in-service training in co-teaching would improve teacher confidence, interests, and attitudes. A total of 129 teachers from five districts in a Mid-Atlantic state took part in the online survey. Most of the teachers had 10 or more years or professional teaching experience and had a master’s degree.

The Co-teaching Experiences and Attitudes Survey (CEAS) was developed for the study and was meant to be applicable for teachers of all age ranges and subject levels, as well as for teachers who were not currently co-teaching. Extensive interviews were completed with 11 of the participants, which contributed to the refinement of the survey to enhance its validity and relevance (Pancsofar & Petroff, 2013).

Results were calculated using t-tests to determine if there were significant differences across groups in pre-service and in-service training opportunities and teacher confidence,
interest, and attitudes around co-teaching across teacher demographics (Pancsofar & Petroff, 2013). Regression analyses were conducted with pre-service and in-service training as outcome variables and teacher demographics such as veteran teacher status, experience with co-teaching, and special educator status as independent variables. These data were analyzed to gain a better sense of the associations between pre-service and in-service training opportunities and teacher outcomes. Highly elevated levels of confidence in co-teaching were found among teachers who received training. Additionally, professional development on co-teaching was significantly associated with each teacher outcome. After the training, co-teachers were more interested in inclusion, more confident in their ability to co-teach, and held more positive attitudes about co-teaching (Pancsofar & Petroff, 2013).

Pancsofar and Petroff (2013) concluded that teacher education and professional development should cover the variety of skills and practices necessary to promote effective co-teaching. Further, pre-service and in-service training in co-teaching was associated with higher levels of co-teacher confidence, interest in co-teaching, and more positive attitudes about this service delivery model (Pancsofar & Petroff).

Significant research indicating that pre-service preparation for co-teaching leads to greater self-efficacy among new teachers also emerged (Conderman, Johnston-Rodriguez, Hartman, & Walker, 2012). Researchers in this study were university professors who taught pre-service teachers and investigated recent graduates’ perceptions of their teacher preparation programs. Central to the study was the notion that new special education teachers were well prepared and were personally confident in their co-teaching practices. Participants were 64 graduates of Northern Illinois University. Eleven percent taught in inclusive classrooms; 25%
were primarily in resource rooms; and the other 64% taught in self-contained units (Conderman et al.).

Mixed methods were used in collecting and analyzing the data. Questions were developed by contacting professors within the department, who each provided core competencies of their courses that were explicitly matched to the Council for Exceptional Children’ Initial Standards. Surveys were mailed to 103 former students of the education department of the university. Cronbach’s alpha coefficient was used to determine reliability (Conderman et al., 2012).

Results of the survey showed that the beginner teachers had the most confidence in displaying professionalism, and the least confidence in enhancing the language skills of English Language Learners (Conderman et al., 2012). Newly-graduated teachers scored highest in areas of professionalism in using effective communication skills, planning individualized instruction, providing instruction, implementing positive behavior supports, and collaborating with colleagues to make student accommodations. In measuring teachers’ levels of confidence, they scored highest again in professionalism, behavior management, and instruction (Conderman et al.).

The authors were impressed that new teachers could thoughtfully reflect on their undergraduate preparation and indicated that they were happy to hear from a person from the university who genuinely cared about them. The researchers concluded that reflections of new teachers were a good source for making improvements in teacher preparation programs (Conderman et al., 2012).

In another study, researchers also found that improving preparation programs led to greater self-efficacy of middle school co-teachers. Strieker et al. (2013) sought to improve pre-
service middle-school special education and general education teachers’ self-efficacy, and they indicated that the research base on the effectiveness of co-teaching and preparation of general education teachers was inadequate. Effectiveness of improving pre-service teachers’ knowledge of and attitudes toward co-teaching in middle school content classrooms was found in this study. Strieker et al. purposed to find out what knowledge of attitudes toward co-teaching with special education professionals pre-service middle school teachers possess. Next, researchers asked what impact working with special educators had on the attitudes of pre-service general educators.

From the fall of 2008 to the fall of 2012, 256 middle school pre-service teachers registered in the program at Kennesaw State University in Georgia. One hundred twenty (120) of these pre-service teachers volunteered to participate; these represented pre-service teachers who were preparing to teach in social studies, science, language arts, and mathematics. They completed two 45 course hour content area methods courses and a field experience which required them to complete 135 hours of student teaching (Strieker, et al.).

Classroom observations and an interview of co-teaching professionals were conducted, and authors noted that teacher attitudes were linked to their feelings of self-efficacy, and this in term affected their teaching effectiveness. Strieker et al. (2013) used the constant comparative method to identify themes in the participants’ understanding of effective co-teaching.

Results indicated that the preparation program at the university was effective in improving pre-service teachers’ awareness of the challenges of co-teaching as well as their confidence, competence, and commitment to co-teaching (Streiker et al., 2013). Pre-service teachers learned about co-planning, co-instruction, and co-teaching models, and they came to understand the importance of balance in the roles and responsibilities of co-teachers and the value of communication between co-teachers. Prior to the initiation of the program, most of the
pre-service middle school teachers did not think that teaching students with disabilities was their responsibility. Strieker et al. indicated a need for more systematic approaches to teaching and learning about collaboration and co-teaching.

Teacher self-efficacy in relation to their associations with students with disabilities was likewise studied. Montgomery & Mirenda (2014) extended the investigation conducted by Savolainen, Engelbrecht, Nel, & Malinen (2012) to examine the relationship between teacher self-efficacy and teachers’ sentiments, attitudes, and concerns about inclusive education, with a focus on students with developmental disabilities. Participants were attendees of a conference. In all, 115 people took part in the survey, and 10 surveys were complete enough to be included in the sample. Data of the online survey were analyzed to find out whether teachers had positive or negative sentiments toward students with disabilities.

Results of the study suggested a weak but statistically significant negative relationship between sentiments and teacher self-efficacy related to collaboration for using inclusive instruction and managing problem behavior. Teachers with more positive attitudes about including students with developmental disabilities tended to feel more confident in their ability to use inclusive instructional practices and collaborate and manage problem behaviors (Montgomery & Mirenda, 2014).

Conclusions disclosed that the findings of the study replicated a previous investigation that teachers’ self-efficacy related to collaboration was primarily associated with positive sentiments and attitudes and fewer concerns about inclusive education. Training in co-teaching was a contributor to the implementation of inclusive educational practices for students with developmental disabilities (Montgomery & Mirenda, 2014).
Lack of preparation and training in co-teaching led to anxiety and lower levels of self-efficacy of co-teachers. Loreman et al. (2013) conducted an international study examining pre-service teacher reports of teaching self-efficacy for inclusive education, focusing on the explanatory relationship between Bandura’s (1994) scale to measure self-efficacy. The study examined 380 pre-service teachers in four teacher preparation programs in Canada, Australia, Hong Kong, and Indonesia. Primary procedures of the study included implementing a survey to the pre-service teachers. Different aspects of teacher self-efficacy for preparedness to teach in an inclusive classroom were asked in the instrument (Loreman et al., 2013).

Results indicated that previous teaching experience with children with disabilities, interactions with people with disabilities, and a working knowledge of law and policy on inclusive education all had statistically significant relationships with teacher self-efficacy. However, confidence levels in teaching students with disabilities and previous training in special education displayed low statistical power in relation to teacher self-efficacy scores. The country in which the data were gathered was found to be significant in the study (Loreman et al., 2013).

Researchers concluded that teacher self-efficacy of pre-service teachers with respect to inclusion increased when they undertook coursework on inclusive education. This study provided information for program emphasis in order to address areas of low teaching self-efficacy. Strong differences internationally were most evident in the data, with pre-service teachers in Hong Kong reporting lower inclusion self-efficacy scores than did their counterparts in all other countries on the scale and subscales. Australians reported significantly higher responses in terms of feelings of self-efficacy in inclusion (Loreman et al., 2013).

Therefore, best practice, professional development, and an openness to instructing students with disabilities were found to increase perceived effectiveness in the inclusive
classroom. Co-teacher self-efficacy improved when co-teachers engaged in evidence-based instructional practices and classroom management (Anderson & Standerford, 2012; Fanni et al., 2013; Shoulders & Krei, 2015). Additionally, in-service and pre-service training in co-teaching led to higher self-efficacy among teachers in the co-taught classroom (Conderman et al., 2012; Loreman et al., 2013; Pancsofar & Petroff, 2013; Streiker et al., 2013). Finally, co-teachers possessing positive attitudes about students with disabilities experienced increased perceived effectiveness (Montgomery & Mirenda, 2014).

Conclusion

The review of the literature showed that when co-teachers define their roles and responsibilities, outcomes improved for the students, the teachers, and the entire school community (Morgan, 2016). Planning together built the relationship between the co-teachers, and they worked more efficiently together (Austin, 2001; Morgan, 2016; Rytivaara, 2012, Weiss & Lloyd, 2002). Teachers who had more experience and training in co-teaching displayed higher levels of self-efficacy. Professional practices such as defining roles and responsibilities that resulted in more student engagement also increased co-teacher self-efficacy (King-Sears et al., 2014; Rytivaara, 2012, Wasburn-Moses, 2005). If people working in educational settings knew that they could improve their practice and increase their perceived effectiveness by defining roles and responsibilities, then educators at all levels would understand the benefits of setting professional standards for co-teachers and others who collaborate on a regular basis.

Research indicated that co-teachers work better together if they plan, instruct, and manage the classroom together (Austin, 2001; Bouck, 2010; Wasburn-Moses, 2005). Surveys on co-teacher perceptions showed that co-teachers had certain needs that had to be met if they are to manage the roles and responsibilities of co-teaching successfully: in-service training in co-
teaching, a common planning time, administrative support, and a positive relationship between co-teachers (Austin, 2001). Self-efficacy of teachers is improved primarily by obtaining more training in co-teaching practices or the teachers’ academic area. The more training in co-teaching, the higher the self-efficacy (Loreman et al., 2013; Pancsofar & Petroff, 2013; Sandholtz & Ringstaff, 2014; Stevens et al., 2013; Streiker et al., 2013). Professional school leadership additionally led to high levels of self-efficacy for school staff (Calik et al., 2012).
CHAPTER 3
METHODOLOGY

Overview

Many general and special educators are assigned to co-teaching with little regard for their preparation and no clear understanding of their roles and responsibilities to learners with disabilities in the co-taught classroom setting (Magiera & Zigmond, 2005; Weiss & Lloyd, 2003). The role of co-teacher was created to meet the needs of students in inclusive classrooms as a required by IDEA (1997), NCLB (2002), and IDEIA (2004). Co-teaching provides special education services to students in the general education classroom. This places a special education teacher and a general education teacher in one setting (Friend & Cook, 2009; Murawski, 2009; Pugach, & Winn, 2011; Scruggs, Mastropieri, & McDuffie, 2007; Solis, Vaughn, Swanson, & McCulley, 2012). The framework involved when entering into co-teaching centers around co-planning, co-instruction, co-behavior management, and co-differentiation (Conderman et al., 2008; Friend & Bursuck, 2009; Murawski, 2012). Defining roles and responsibilities in co-teaching can help teachers to know what to do and when to do it while working in the classroom together (Beninghof, 2011). Additionally, this practice coupled with co-teaching techniques improves student outcomes (Morgan, 2016). In classroom collaboration, together teachers determine who will apply accommodations, where the teachers will plan together, who will handle behavior management, and who will grade papers (Perez, 2012). Although there are practices common in the field of special education for teachers to utilize in their co-teaching experiences, there are other factors that determine the success or failure between co-teachers. Examples include volunteering to be a co-teacher, having a regular planning time for lessons, and having administrative support, as written about by Bouck (2010),
Teacher self-efficacy, or one’s personal belief about one’s capabilities, can also affect a co-teacher’s performance, attitude, and decision-making (Bandura, 1994). Positive self-efficacy can improve student outcomes (Shoulders & Krei, 2015).

Co-teaching is an increasingly common practice in schools around the world and is used in almost every school district in America (Conderman et al., 2008). The practice of co-teaching is supported by changes in U. S. law (IDEA, 1997; IDEIA, 2004). It brings a general education teacher and a special education teacher together in one class to provide for the academic and social needs of all the students. Co-teachers must cooperate and collaborate in order to achieve success (Perez, 2012). However, there is little research to support best practices for co-teaching. This research seeks to examine co-teacher roles and responsibilities comparing roles teachers currently undertake as compared to what the teacher perceives as best practices for co-teaching situations. Additionally, the study examines teacher self-efficacy in relation to co-teaching situations. This chapter describes the methods used to develop and refine a survey, implement the survey, and collect results.

**Research Questions**

The study addresses the following research questions:

**Research Question 1:** Is there a significant difference between general education co-teachers’ present roles and responsibilities from the roles and responsibilities that they think are best practice?

It was hypothesized that general education teachers’ present roles and responsibilities would differ from the roles and responsibilities that they think are best practice.
**Research Question 2:** Is there a significant difference between special education co-teachers’ present roles and responsibilities and the roles and responsibilities that they consider to be best practice?

It was hypothesized that special education teachers’ present roles and responsibilities would differ from the roles and responsibilities that they think are best practice.

**Research Question 3:** Is there a significance between special education and general education co-teachers’ perceived roles and responsibilities in co-teaching situations?

It was hypothesized that special education and general education teachers would differ in how they perceive their roles and responsibilities in a co-teaching role.

**Research Question 4:** Is there a relationship between general education co-teacher roles and responsibilities in co-teaching situations and teacher self-efficacy?

It was hypothesized that general education co-teacher self-efficacy would be predictive of roles and responsibilities.

**Research Question 5:** Is there a relationship between special education co-teacher roles and responsibilities in co-teaching situations and teacher self-efficacy?

It was hypothesized that special education co-teacher self-efficacy would be predictive of roles and responsibilities.

The overall goal of this study was to understand which roles and responsibilities each teacher actually does in their current or most recent co-teaching situation. Another goal was to understand which roles and responsibilities the teachers think are best practice for co-teaching (the special education teacher and the general education teacher) in order to establish a guideline for informing the co-teaching process. An understanding of whether co-teachers are reporting
performing at the level of best practice is pertinent. Whether self-efficacy of co-teaching roles are impacted by self-efficacy is also important.

**Participants**

The survey was sent using the following methods: 1) via email in classes at a large Southwestern University, including Alternative Route to Licensure coursework in general and special education, the Educational Psychology introductory class subject pool, where only co-teachers were instructed to participate, and; 2) via email through the local teacher union list serve. Moreover, the researcher brought a laptop to two university classes for pre-service and in-service teachers who were taking student teaching in special education and another class that prepared ARL candidate beginner teachers to learn about behavior management. While taking the survey, demographic information was collected from teachers. Data were collected from teachers who were currently co-teaching or had any previous experience in co-teaching, either as a special education teacher or a general education teacher. Only teachers with this experience were solicited to take the survey.

The sample included 160 general education and 160 special education teachers exceeding the minimum ratio of 10 participants for every 1 new question created in the literature (Costello & Osborne, 2005). The demographic information collected reflected categories utilized in the 2010 Census Bureau (U.S. Census Bureau, 2010) and included age, gender, and ethnic origin. Additionally, level of education, type of educator, years of experience teaching, years of experience in co-teaching, and current teaching assignment were documented. Participation in the study was completely voluntary and anonymous.
Setting

The survey was taken online through the *Qualtrics (2017)* survey system. Most of the participants were teaching in a large urban school district in the southwest United States. The survey was created to allow participants to complete the information from any computer, tablet, or hand-held mobile device. Participants were able to exit the survey at any time.

Instrumentation

The survey consisted of 70 Likert questions and six demographic questions. Items for the survey came from two sources. Questions were created based on themes identified from a review of literature (see Appendix A), the Bandura (1994) Teacher Self-Efficacy survey, and demographic information. Specifically, six questions aimed at indicating demographic data; 20 questions were developed to indicate the roles and responsibilities of the co-teachers (to be answered twice: once indicating what they actually do; and the second time answering what they think best practice is); and 30 questions (the entirety) of Bandura’s Teacher Self-Efficacy Scale (1994). The survey questions were on a scale of 1 to 10 on the self-efficacy scale and from 0 to 4 for the roles and responsibilities part of the survey.

Co-Teaching Questionnaire Development

The questionnaire on co-teaching was developed by a thorough review of the literature. The terms “Co-teaching,” “Collaboration,” “Collaborative Consultation,” “Inclusion,” “Co-teacher Self-efficacy, and “Teacher Self-efficacy” were searched in three different databases: ERIC, Academic Search Premiere, and Education Full Text. The recent literature on co-teaching was sought, so only articles from the searches between the years 2001 – 2017 were included in the analysis. The total number of articles found on co-teaching was 67, and 25 of these were used to develop the questionnaires. Only empirical studies published in peer-reviewed sources
were included. Findings from the studies were reviewed and placed into categories. A matrix indicating how articles were used to develop the survey was created.

Initially 20 categories were identified, and articles were sorted according to these categories. Once the articles were reviewed, common themes for practical aspects of how co-teachers work were identified: instruction, planning, behavior management, and differentiation. Each article containing these topics was used as a source for the survey, and placed on the matrix in Appendix A. A total of 25 empirical studies were used to form the questions in the survey. Five questions were developed for each of the four identified themes, for a total of 20 questions. The most common activities of co-teachers identified in the 26 articles were formed into questions, resulting in 5 distinct questions per category (Bouck, 2010; Mastropieri & McDuffie, 2007; Ronfeldt et al., 2015; Strieker et al., 2013; Tschida, Smith & Fogarty, 2015).

Questions in the survey were focused on practical aspects of the co-teaching relationship that authors recommend co-teachers discuss when they begin co-teaching (Conderman et al., 2008). Some studies specifically discussed how often teachers should meet to plan, who will deliver the main part of the lesson or the warm-up, which teacher handles discipline and enforcing rules, differentiating instruction, as well as other issues (Fujimoto-Adamson, 2010; Tschida et al., 2015). These 20 survey questions were asked in two different ways. In the first instance, teachers were asked what their actual roles are in co-teaching. In the second instance, teachers were asked what roles they think are best practice for someone in his or her role.

For each item on the roles and responsibilities portion, teachers indicated on a 5-item Likert scale how frequently they executed certain roles: never, seldom, some of the time, most of the time, or almost always. Researchers have found that including a five-point scale that includes a middle category allows respondents to indicate a neutral response and be more
discriminating in their response (Cronbach, 1950). The questions were categorized into different categories of co-teaching roles: co-planning, co-instruction, co-differentiation, and co-behavior management.

Once the questions were developed, they were field-tested in the following ways. A preliminary survey was developed from this set of roles and responsibilities. The questionnaire was transferred to Qualtrics. This preliminary survey was given to 15 co-teachers, and then the survey was given to 20 students in a college class of current teachers and student teachers. The co-teachers and pre-service teachers were asked about their understanding of survey items and whether they understood survey directions. The time it took to complete the survey was noted also. The survey was revised based upon the recommendations. No data were analyzed in this process. The finalized and revised version of the survey was used to collect data in the questionnaire developed in Qualtrics (2017).

Experts in the field of co-teaching were contacted to ask them to review the survey: an Assistant Professor at a large southern university, an Associate Professor at a top tier university in the U. S. Southwest with experience in co-teaching and survey development, and a Professor Emirita from the southwestern United States with experience with inclusive practices. These experts were emailed a copy of the survey and asked if they would provide feedback on the questions and formatting of the survey. Revisions were made based on the professional experts’ comments.

**Bandura’s Teacher Self-Efficacy Scale Development**

Bandura’s self-efficacy scale was also added to the survey to find out whether there was a relationship between co-teaching and self-efficacy (1994). No modifications were made to the
Bander (1994) survey. Bandura’s scale (1994) has been used in numerous studies and is a respected, valid tool for measuring self-efficacy of educators.

On the self-efficacy section, teachers indicated level of confidence on a scale of 0 to 10: zero was cannot do at all; five was moderately can do; and 10 was highly certain can do. These included questions on efficacy to influence decision-making, instructional self-efficacy, disciplinary self-efficacy, efficacy to enlist parental involvement, efficacy to enlist community involvement, efficacy to create a positive school climate, and efficacy to meet legal requirements (Bandura, 1994).

Perceived self-efficacy is a major predictive factor of personal intention. The make-up of Bandura’s efficacy scale relies on a good conceptual analysis of the process of functioning. Knowledge of the chosen activity specifies which aspects of personal efficacy should be measured (Bandura, 2006). Perceiving efficacy is measured on Bandura’s Teacher Self-Efficacy Scale against levels of tasks that represent gradations to successful performance. The scale defines the level of difficulty individuals believe they can overcome. If there are no obstacles to work through, then the activity is easy, and everyone can be very efficacious (Bandura).

The standard procedure for measuring beliefs of personal efficacy includes a number of procedures to minimize any motivational effects of self-assessment. These precautions are found in the instructions of the scale including instructing participants to rate how certain they are that they can do the items in the self-efficacy section of the survey. Respondents in this part of the survey were reminded that their answers would be kept strictly confidential and would not be identified by name (Bandura, 2006).
Materials

The materials used for the study were the surveys, *Qualtrics* (2017), and the *IBM SPSS* (2017) software used to run statistical analyses on the research questions. The survey was administered using *Qualtrics* (Qualtrics Lab, Inc., 2017), a web-based questionnaire software package. The initial version of *Qualtrics* (2017) software was released in 2005. *Qualtrics* allows more than 100 types of questions and allows data to be shown in over 30 types of graphs. This software is free for faculty and students at the university where this study was conducted. Additionally, this software allows downloading and exporting data into Excel and the *IBM Statistical Package for Social Sciences (SPSS)* (2017).

The survey was sent via a dedicated link to teachers; this gave them access to the online questionnaire. All survey responses were maintained digitally, and access to the information from the questionnaire was limited to the primary investigator and the doctoral committee chair. Data gathered in the questionnaire were used only for the purpose of statistical analysis and dissemination of information about the purpose of the study.

Design and Procedures

Four phases were implemented in defining the design and procedures of the study.

Phase One: Development of Questionnaire

The survey was developed by generating an item pool through a review of literature and allowing the preliminary survey to be reviewed by potential survey respondents.

**Generate item pool.** Literature on co-teaching was identified and reviewed. From the literature review themes related to the roles and responsibilities of co-teachers were identified. A total of 40 questions were developed from the identified themes: instruction, planning, behavior management, and differentiation.
**Survey development.** A preliminary survey was developed from the above of roles and responsibilities. Co-teachers and pre-service teachers were asked about their understanding of survey items and whether they understood survey directions. The survey was revised based upon the recommendations. The finalized and revised version of the survey was used to collect data in the survey developed in *Qualtrics* (2017). The survey (Appendix B) was developed ensuring that it was user friendly (Dillman, 2007). The teachers clicked the link to the questionnaire, and the initial screen was the protocol describing the purpose of the study and the approximated time to complete the questionnaire.

**Phase Two: Experts in the Field of Co-Teaching**

Experts in the field of co-teaching were contacted to ask them to review the survey: an Assistant Professor at a large southern university, an Associate Professor at a top tier university in the Southwest United States with experience in co-teaching and survey development, and a Professor Emirita from the southwestern United States with experience with inclusive practices. These experts were emailed a copy of the survey and asked if they would provide feedback on the questions and formatting of the survey. Revisions were made based on the professional experts’ comments.

**Phase Three: Solicitation of Participation**

The population sought to participate included anyone who had ever been either a general education or special education teacher in a co-teaching role. The local teachers’ union distributed the survey to educators listed as resource room teachers, including special education co-teachers. These special education co-teachers were requested to ask their general education counterparts to take the survey as well. This procedure was necessary because the union did not have a list that specified which teachers were currently co-teaching. Digital consent obtained is
considered acceptable consent for the online survey. Teachers who did not give their consent were exited from Qualtrics (2017). Participants who exited the survey by closing the survey window were not able to re-enter the survey at a later time. When a participant completed the questionnaire, repeat access to the survey was denied by Qualtrics (2017).

Phase Four: Use of Data

Descriptive statistics were analyzed from the data, and three statistical analyses were chosen to answer each of the research questions: Wilcoxon signed rank test, Mann-Whitney U test, and bivariate regression models. A Wilcoxon signed rank (Huang, 2016) and a Mann-Whitney U (Runxton, 2006) (the non-parametric alternative to a paired t-test) are statistical tests that determine whether there is a statistically significant difference between the means of two unrelated groups. A bivariate regression model was used to estimate the relations among different variables. It is used when analyzing the relationship between a dependent variable and one or more independent variables (Scott, Flaherty, & Currall, 2012). Once the analysis was complete, findings were reported.

Data Collection

Survey responses and demographics were collected anonymously and stored electronically by the online database until enough participants had taken it. All participants gave their consent prior to participating in the survey. The researcher went to three Alternative Routes to Licensure classes at a high research institution (according to Carnegie rankings) in the Southwestern U.S., to allow beginner teachers to take the survey on a laptop. The local education union distributed the survey to their members, instructing potential participants to only answer the questions if they have ever been a co-teacher. The survey was distributed to teachers identified as resource room teachers, and these teachers were asked to pass the survey along to
their general education counterpart. Once a target of 160 co-teachers for each group was met, the survey was closed. This took place during the Spring 2017 semester. Then, the data were organized into a database. Data were then examined, and incomplete survey responses were discarded. Surveys that were not fully completed were not usable because they contained only partial amounts of the data required. At this point, there were 170 special education and 160 general education responses. Ten special education responses were randomly selected and then discarded to obtain an equal number of data points for each group. This procedure was used because it was a random selection of the excess special educator surveys.

The research questions are as follows:

**Research Question 1:** Is there a significant difference between general education co-teachers’ present roles and responsibilities and the roles and responsibilities that they consider to be best practice?

**Analysis:** In order to determine if a significant relationship existed between the co-teachers’ actual roles and the roles they consider to be best practice, a Wilcoxon Signed Rank Test was employed. The alpha level was set at .05.

**Research Question 2:** Is there a significant difference between special education co-teachers’ present roles and responsibilities and the roles and responsibilities that they consider to be best practice?

**Analysis:** In order to determine if special education teachers’ actual roles and the roles they consider to be best practice, a Wilcoxon Signed Rank test was conducted. The alpha level was set at .05.

**Research Question 3:** Is there a significant difference between special education and general education co-teachers’ perceived roles and responsibilities in co-teaching situations?
Analysis: In order to determine whether special education and general education teachers differ significantly in how they perceive their actual roles and responsibilities in a co-teaching situation, a Mann-Whitney U test was run. The alpha level was set at .05.

Research Question 4: Is there a relationship between general education teacher roles and responsibilities in co-teaching situations and teacher self-efficacy?

Analysis: In order to determine whether general education co-teacher roles and responsibilities in co-teaching were predictive of teacher self-efficacy, a simultaneous regression model was conducted. The alpha level was set at p<.05.

Research Question 5: Is there a relationship between special education co-teacher roles and responsibilities in co-teaching situations and teacher self-efficacy?

Analysis: In order to determine whether special education teacher roles and responsibilities in co-teaching situations were predictive of teacher self-efficacy, a simultaneous regression model was conducted. The alpha level was set at p<.05.
CHAPTER 4

RESULTS

The literature indicates that co-teachers should develop roles and responsibilities for best practice (Austin, 2001; Bouck, 2010; Morgan, 2016; Rytivaara, 2012; Wasborn-Moses, 2005; Weiss & Lloyd, 2002). Co-teaching is positively associated with self-efficacy (Pancsofar & Petroff, 2013). Further, the literature shows that best practice, professional development, and an openness to instructing students with disabilities are found to increase perceived effectiveness in the inclusive classroom. Co-teacher self-efficacy improves when co-teachers engage in evidence-based instructional practices and classroom management (Anderson & Standerford, 2012; Fanni et al., 2013; Shoulders & Krei, 2015). Teachers with higher self-efficacy have greater student engagement in the classroom (Shoulders & Krei). The results of this survey will indicate whether co-teachers do what they think is best practice. It will reveal whether self-efficacy is a predictor of any elements of co-teaching roles.

The purpose of this study was to determine associations between reported co-teacher roles and responsibilities and whether self-efficacy had a relationship with these reported roles. An online survey was developed for use in this study, and all participants were directed to the Qualtrics (2017) online survey system, where all data were stored and transferred to SPSS (2017). The survey was distributed by the local teachers’ union twice. The union contacted special education teachers who were asked to pass the survey along to their general education co-teaching counterparts. A total of 320 participants took part in the questionnaire. Data were collected over a three-month period and subsequently analyzed with the use of quantitative statistical analyses.
The questionnaire was developed based on the co-teaching literature using a matrix (see Appendix A) and Bandura’s Teacher Self-Efficacy Scale (1994). The 70-item questionnaire was designed to measure the reported roles and responsibilities of co-teachers in addition to the self-reported co-teacher self-efficacy. For each item on the roles and responsibilities portion, teachers indicated on a 5-item Likert scale how frequently they undertook certain roles: never, seldom, some of the time, most of the time, or almost always. The questions were categorized into different types of roles: co-planning, co-instruction, co-differentiation, and co-behavior management. On the self-efficacy section, teachers reported their level of confidence on a scale of 0 to 10: zero was cannot do at all; 5 was moderately can do; and 10 was highly certain can do. These included questions on efficacy to influence decision-making, instructional self-efficacy, disciplinary self-efficacy, efficacy to enlist parental involvement, efficacy to enlist community involvement, efficacy to create a positive school climate, and efficacy to meet legal requirements (Bandura). The data from the questionnaire were analyzed to answer the questions below.

**Treatment of Data**

Analyses were run on each research question. Wilcoxon signed rank tests, Mann-Whitney U tests, and simultaneous regression models were conducted. Mann-Whitney U (Runxton, 2006) and Wilcoxon signed rank tests (Huang, 2016) (the non-parametric alternatives to a paired t-test) disclosed whether there was statistical significance among variables in the questionnaire. These tests were used due to non-normality of the distribution of the data. A bivariate regression model analyzed the relationships among the roles and responsibilities and the teacher self-efficacy indicators (Scott, Flaherty, & Curral, 2012). Data were taken from Qualtrics (2017) as an Excel file. The file was imported into IBM SPSS (2017) (Statistical Packages for the Social Sciences) for statistical analysis. Descriptive statistics were calculated,
such as special education as opposed to general education teachers, educational background, and years of experience.

**Demographic Data**

The sample included 160 general education and 160 special education teachers. The age range for participants was from 22 to 70. The demographic information collected reflected categories utilized in the 2010 Census Bureau (U.S. Census Bureau, 2010) and included age, gender, and ethnic origin. Additionally, level of education, type of educator, years of experience teaching, years of experience in co-teaching, and current teaching assignment were documented (see Table 1).
Table 1.

*Co-Teacher Demographic Data*

<table>
<thead>
<tr>
<th></th>
<th>General Education</th>
<th>Special Education</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>34</td>
<td>32</td>
</tr>
<tr>
<td>Female</td>
<td>126</td>
<td>128</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>40.37</td>
<td>40.42</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>130</td>
<td>117</td>
</tr>
<tr>
<td>African American</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>American Indian</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Asian</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Native Hawaiian or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Two or More Races</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>Not Hispanic</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>47</td>
<td>33</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>110</td>
<td>119</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td><strong>Years of Teaching Experience</strong></td>
<td>11.87</td>
<td>12.62</td>
</tr>
<tr>
<td><strong>Years of Experience Co-teaching</strong></td>
<td>4.00</td>
<td>5.27</td>
</tr>
<tr>
<td><strong>Prior Training in Co-teaching</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>71</td>
<td>121</td>
</tr>
<tr>
<td>No</td>
<td>89</td>
<td>39</td>
</tr>
</tbody>
</table>

**Non-normality in the Distribution of Data**

Distribution of the data was found to be non-normal. Due to this non-normality in the data, alternatives to a t-test (non-parametric measures) were used for research questions one, two, and three. Normality in the distribution of data is an assumption for using a t-test for analysis (Salkind, 2007). Since this assumption was not met, non-parametric measures must be used.
Because the distribution of the data for general education teachers’ actual and best practice roles in Research Question one was non-normal, a non-parametric measure was used. The non-normality is displayed in Figure 1.

**Figure 1. Non-Normality of Distribution for Research Question 1.**

*Figure 1.* The Wilcoxon Signed Rank test (a non-parametric measure) was used because of non-normality of the distribution. Figure 1 shows the non-normal distribution for Research Question 1.

Because the distribution of the data for special education teachers’ actual and best practice roles in Research Question two was non-normal, a non-parametric measure was used (see Figure 2).
Because the distribution of the data for special education teachers’ actual and best practice roles was non-normal in Research Question 3, a non-parametric measure was used (see Figure 3).
Research Question 1

The first research question asked the following: Is there a significant difference between general education co-teachers’ present roles and responsibilities and the roles and responsibilities that they consider to be best practice?

In order to determine if a significant relationship existed between the co-teachers’ actual roles and the roles they consider to be best practice, a Wilcoxon Signed Rank Test was employed. The alpha level was set at .05.

Results indicated a statistical significance between the actual (N=160) and best practice roles (N=160) of general education teachers’ roles and responsibilities (p<.05). Results are presented in Table 2.
Table 2.

*General Educators’ Actual and Best Practice Roles*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actual Roles</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-instruction</td>
<td>18.7</td>
<td>3.26</td>
<td>18</td>
</tr>
<tr>
<td>Co-planning</td>
<td>17.5</td>
<td>4.45</td>
<td>18</td>
</tr>
<tr>
<td>Co-behavior management</td>
<td>21.72</td>
<td>2.58</td>
<td>22</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>20.33</td>
<td>3.18</td>
<td>20</td>
</tr>
<tr>
<td><strong>Best Practice Roles</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-instruction</td>
<td>21.38</td>
<td>2.99</td>
<td>21</td>
</tr>
<tr>
<td>Co-planning</td>
<td>21.61</td>
<td>4.05</td>
<td>23</td>
</tr>
<tr>
<td>Co-behavior management</td>
<td>22.6</td>
<td>3.12</td>
<td>24</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>22.19</td>
<td>2.99</td>
<td>23</td>
</tr>
</tbody>
</table>

In Table 2, the means and medians for what co-teachers thought were best practice were consistently higher than the means for the roles they reported actually doing. This includes means and medians for co-instruction, co-planning, co-behavior management, and co-differentiation.
Table 3.

*Test for Significance for General Educators’ Reported Actual and Best Practice Roles*

<table>
<thead>
<tr>
<th></th>
<th>Z</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-instruction</td>
<td>-8.01*</td>
<td>.45</td>
</tr>
<tr>
<td>Co-planning</td>
<td>-8.36*</td>
<td>.47</td>
</tr>
<tr>
<td>Co-behavior management</td>
<td>-4.418*</td>
<td>.25</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>-6.654*</td>
<td>.37</td>
</tr>
</tbody>
</table>

Note. * Indicates statistical significance, p<.05.

In Table 3, the Wilcoxon Sign Rank test showed Z-scores that were consistently significant for the reported actual role and the roles that general education teachers reported were best practice.

**General educator co-instruction.** A statistical significance between co-instruction actual roles and best practice roles was found through the means of a Wilcoxon Signed Rank Test (the non-parametric alternative to a paired t-test). A Wilcoxon Signed Rank Test revealed a statistically significant reduction in actual roles among general education teachers’ roles and responsibilities as they participated in the survey: $z = -8.01, p<.05$, with a medium effect size ($r = .45$) (See Table 2). The medium effect size is based on Cohen’s (1988) criteria of $.1 = small$ effect, $.3 = medium effect,$ and $.5 = large effect.$

**General educator co-planning.** The statistical significance between planning actual roles and best practice roles was assessed through the means of a Wilcoxon Signed Rank Test (the non-parametric alternative to a paired t-test). A Wilcoxon Signed Rank Test revealed a
statistically significant reduction in actual roles among general education teachers’ roles and responsibilities as they participated in the survey: $z = -8.36, p<.05$, with a medium effect size ($r = .47$).

**General educator co-behavior management.** There was a statistical significance between behavior management actual roles and best practice roles found through the means of a Wilcoxon Signed Rank Test (the non-parametric alternative to a paired t-test). A Wilcoxon Signed Rank Test revealed a statistically significant reduction in actual roles among general education teachers’ roles and responsibilities as they participated in the survey, $z = -4.418, p<.05$, with a small effect size ($r = .25$).

**General educator co-differentiation.** The statistical significance between differentiation actual roles and best practice roles was assessed through the means of a Wilcoxon Signed Rank Test (the non-parametric alternative to a paired t-test). A Wilcoxon Signed Rank Test revealed a statistically significant reduction in actual roles among general education teachers’ roles and responsibilities as they participated in the survey: $z = -6.654, p<.05$, with a medium effect size ($r = .37$).

**Research Question 2**

Research question two asks if there is a significant difference between special education co-teachers’ present roles and responsibilities and the roles and responsibilities that they consider to be best practice.

In order to determine if special education teachers’ actual roles and the roles they consider to be best practice, a Wilcoxon Signed Rank Test was conducted. The alpha level was set at .05.
There was a statistical significance between the actual roles and the roles reported as best practice (i.e., between co-instruction, co-planning, co-behavior management, and co-differentiation) of special education teachers’ roles and responsibilities. Results are listed on Table 4.

Table 4

*Special Educators’ Actual and Best Practice Roles*

<table>
<thead>
<tr>
<th>Roles</th>
<th>Mean (n=160)</th>
<th>SD</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actual Roles</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-instruction</td>
<td>17.21</td>
<td>3.94</td>
<td>18</td>
</tr>
<tr>
<td>Co-planning</td>
<td>16.10</td>
<td>5.02</td>
<td>16</td>
</tr>
<tr>
<td>Co-behavior management</td>
<td>20.67</td>
<td>3.81</td>
<td>21</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>19.54</td>
<td>3.78</td>
<td>20</td>
</tr>
<tr>
<td><strong>Best Practice Role</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-instruction</td>
<td>20.4</td>
<td>3.37</td>
<td>20</td>
</tr>
<tr>
<td>Co-planning</td>
<td>21.21</td>
<td>4.70</td>
<td>23</td>
</tr>
<tr>
<td>Co-behavior management</td>
<td>22.54</td>
<td>3.18</td>
<td>24</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>22.08</td>
<td>2.98</td>
<td>23</td>
</tr>
</tbody>
</table>

The means and medians for what teachers reported were best practice roles were consistently higher than what co-teachers reported actually doing in a co-teaching situation.
Table 5.

Test of Significance for Special Educators’ Actual and Best Practice Roles

<table>
<thead>
<tr>
<th></th>
<th>Z</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-instruction</td>
<td>-8.691*</td>
<td>.49</td>
</tr>
<tr>
<td>Co-planning</td>
<td>-8.772*</td>
<td>.49</td>
</tr>
<tr>
<td>Co-behavior management</td>
<td>-5.574*</td>
<td>.31</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>-7.019*</td>
<td>.39</td>
</tr>
</tbody>
</table>

Note. * Indicates statistical significance, p<.05.

In Table 5, the Wilcoxon Sign Rank test showed Z-scores that were consistently significant for the reported actual role and the roles that general education teachers reported were best practice.

**Special educator co-instruction.** The statistical significance between instructional actual roles and best practice roles was assessed through the means of a Wilcoxon Signed Rank Test (the non-parametric alternative to a paired t-test). A Wilcoxon Signed Rank Test revealed a statistically significant reduction in actual roles among general education teachers’ roles and responsibilities as they participated in the survey: $z = -8.691, p<.05$, with a medium effect size ($r = .49$).

**Special educator co-planning.** The statistical significance between co-planning actual roles and best practice roles was assessed through the means of a Wilcoxon Signed Rank Test (the non-parametric alternative to a paired t-test). A Wilcoxon Signed Rank Test revealed a statistically significant reduction in actual roles among general education teachers’ roles and
responsibilities as they participated in the survey: \( z = -8.772, p < .05 \), with a medium effect size (\( r = .49 \)).

**Special educator co-behavior management.** The statistical significance between co-behavior management actual roles and Best practice roles was assessed through the means of a Wilcoxon Signed Rank Test (the non-parametric alternative to a paired t-test). A Wilcoxon Signed Rank Test revealed a statistically significant reduction in actual roles among general education teachers’ roles and responsibilities as they participated in the survey: \( z = -5.574, p < .05 \), with a medium effect size (\( r = .31 \)).

**Special educator co-differentiation.** The statistical significance between Co-differentiation actual roles and best practice roles was assessed through the means of a Wilcoxon Signed Rank Test (the non-parametric alternative to a paired t-test). The difference between actual roles and best practice roles were assessed for statistical significance by a non-parametric means. A Wilcoxon Signed Rank Test revealed a statistically significant reduction in actual roles among general education teachers’ roles and responsibilities as they participated in the survey: \( z = -7.019, p < .05 \), with a medium effect size (\( r = .39 \)).

**Research Question 3**

Research question 3 examines the following: Is there a significant difference between special education and general education teachers’ perceived roles and responsibilities in co-teaching situations?

In order to determine whether special education and general education co-teachers differ significantly in how they perceive their actual roles and responsibilities in a co-teaching situation, a Mann-Whitney U was run. The alpha level was set at .05.
There was a statistical significance between special education and general education teachers’ actual roles and responsibilities in a co-teaching situation for Co-instruction, Co-planning, and Co-behavior management. Differentiation between general education and special education teachers’ actual roles did not display a statistically significant difference at the \( p<.05 \) level.

Table 6.

*Co-Teachers’ (General Education and Special Education) Reported Actual Roles*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=160)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>General Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-instruction</td>
<td>18.71</td>
<td>3.26</td>
<td>18</td>
</tr>
<tr>
<td>Co-planning</td>
<td>17.50</td>
<td>4.45</td>
<td>18</td>
</tr>
<tr>
<td>Co-behavior management</td>
<td>21.72</td>
<td>2.58</td>
<td>22</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>20.33</td>
<td>3.18</td>
<td>20</td>
</tr>
<tr>
<td><strong>Special Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-instruction</td>
<td>17.21</td>
<td>3.94</td>
<td>18</td>
</tr>
<tr>
<td>Co-planning</td>
<td>16.10</td>
<td>5.02</td>
<td>16</td>
</tr>
<tr>
<td>Co-behavior management</td>
<td>20.67</td>
<td>3.81</td>
<td>21</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>19.54</td>
<td>3.78</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 7.

Significance of Co-Teachers’ (General Education and Special Education) Reported Actual Roles

<table>
<thead>
<tr>
<th></th>
<th>U</th>
<th>Z</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-instruction</td>
<td>9976.50*</td>
<td>-3.429</td>
<td>.19</td>
</tr>
<tr>
<td>Co-planning</td>
<td>1063.50*</td>
<td>-2.621</td>
<td>.15</td>
</tr>
<tr>
<td>Co-behavior management</td>
<td>11093.00*</td>
<td>-2.079</td>
<td>.12</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>11977.50</td>
<td>-1.727</td>
<td>.10</td>
</tr>
</tbody>
</table>

Note. * Indicates statistical significance, p<.05.

Co-teacher instruction. The difference between general education and special education teachers’ actual roles were assessed for statistical significance by a non-parametric means (i.e., Mann-Whitney U Test). A Mann-Whitney U Test revealed a statistically significant difference between general education teachers’ roles and responsibilities and that of special education teachers, $U = 9976.50 \ z = -3.429$, $p<.05$, with a small effect size ($r = .19$). The small effect size is based on Cohen’s (1988) criteria of $1 = \text{small effect}, .3 = \text{medium effect}, \text{and } .5 = \text{large effect}$. The mean rank between general education (Mean Rank = 178.15) and special education (Mean Rank = 142.85) teachers’ roles and responsibilities was higher for general education teachers.

Co-teachers planning. The distribution for actual roles for both special education and general education teachers were both non-normal, as observed from Research Question 1 and 2. Actual roles for general education teachers had a mean of 17.50 (SD = 4.45) and a median of 18, while actual roles for special education teachers had a mean of 16.10 (SD = 5.02) and a median of 16. Therefore, the difference between general education and special education teachers’
Actual roles were assessed for statistical significance by a non-parametric means (i.e., Mann-Whitney U Test). A Mann-Whitney U Test revealed a statistically significant difference between general education teachers’ roles and responsibilities and that of special education teachers’ 

\( U=10635.50 \quad z = -2.621, \quad p<.05 \), with a small effect size \( (r=.15) \).

**Co-teacher co-behavior management.** The difference between general education and special education teachers’ actual roles were assessed for statistical significance by a non-parametric means (i.e., Mann-Whitney U Test). A Mann-Whitney U Test revealed a statistically significant difference between general education teachers’ roles and responsibilities and that of special education teachers’ 

\( U = 11093.00 \quad z = -2.079, \quad p<.05 \), with a small effect size \( (r=.12) \).

The mean rank between general education (Mean Rank = 171.17) and special education (Mean Rank = 149.83) teachers’ roles and responsibilities was higher for general education teachers.

**Co-teacher co-differentiation.** A Mann-Whitney U Test revealed no statistically significant difference between general education teachers’ roles and responsibilities \( (Md=20; \quad N=160) \) and that of special education teachers’ \( (Md=20; \quad N=160), \quad U = 11377.50, \quad z = -1.727, \quad p=.084 \). There was a small effect size \( (r=.10) \).

**Research Question 4**

The study also looked to examine relationships between self-efficacy and the roles teachers fulfilled. Question 4 asks the following: Is there a relationship between general education co-teacher roles and responsibilities in co-teaching situations and teacher self-efficacy?

In order to determine whether general education teacher roles and responsibilities in co-teaching were predictive of teacher self-efficacy, a bivariate regression model was conducted. The alpha level was set at \( p<.05 \).
Across co-instruction, co-planning, co-behavior management, and co-differentiation, self-efficacy had a positive correlation with each and had effect sizes of either small (co-instruction and co-behavior management) or medium (co-planning and co-differentiation). The figure below summarizes the standardized coefficients (beta) of the predictive ability of self-efficacy on co-instruction, co-planning, co-behavior management, and co-differentiation. There were higher betas for co-planning and co-differentiation, suggesting self-efficacy contributes to those two areas more so than co-instruction and co-behavior management.

**Figure 4.** Regression Coefficients for General Education Teachers’ Self-Efficacy as Predictors of Roles and Responsibilities.

<table>
<thead>
<tr>
<th>Role</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-instruction</td>
<td>.47</td>
</tr>
<tr>
<td>Co-planning</td>
<td>.34</td>
</tr>
<tr>
<td>Co-behavior Management</td>
<td>.44</td>
</tr>
<tr>
<td>Co-differentiation</td>
<td>.32</td>
</tr>
</tbody>
</table>

**Figure 4.** Self-Efficacy as predictor of roles and responsibilities (4 Regression models, meaning one outcome per regression model). Positive self-efficacy is a predictor of all areas of roles and responsibilities measured: co-instruction, co-planning, co-behavior management, and co-differentiation.

**Self-efficacy and instruction.** First, bivariate regressions were conducted between co-instruction and self-efficacy with co-instruction as the dependent variable and self-efficacy as the independent variable. Co-instruction had a regression coefficient of .32, which was relatively...
low compared to co-differentiation and co-planning. General education teachers reported that they were less likely to participate in co-instruction. The intent was to observe self-efficacy as a predictor to instruction. Initially, three cases prosed as outliers according to Tabachnick and Fidell (2013), which described any standardized residual below -3.3 or above 3.3 an outlier (See Appendix D, Figure 5).

Thus, the three cases were removed from the analysis as outliers and the bivariate regression between self-efficacy and instruction was re-ran with a sample of 157 (originally the sample was 160). However, another outlier was identified through prediction errors (i.e., using casewise diagnostics in SPSS).

Therefore, four cases were removed for normality in the bivariate regression model. The sample was decreased to 156 general education teachers and the bivariate regression model resembled normality. Other assessments of normality were within acceptable parameters. For instance, the histogram of the standardized residuals was examined in having a distribution close to normality. When inspecting the Normal Probability Plot (P-P) of the Regression Standardized Residual, there was an indication of normality since the Normal P-P Plot seemed to display a reasonable spread of data points lying along the straight diagonal line from bottom left to top right. Additionally, the Scatterplot of the standardized residual, had a reasonable display of normality by showing a roughly rectangularly distributed spread with most of the scores centered along the 0 point. From the Scatterplot, all values were now within the -3.3 and 3.3 range to not be identified as an outlier and resembled a rectangular shape tendency toward independence of residuals (i.e., another regression assumption met) (see Appendix D, Figure 6, Figure 7, and Figure 8). After the exclusion of four cases, the sample size was N=156 general education
teachers. The sample of 156 general education teachers was considered within accepted sampling guidelines for regression (Tabachnick & Fidell, 2013).

Generally, the assumption for homoscedasticity was indicated by observing the Scatterplot of standardized residuals with the dependent variable. In the scatterplot (below), the data points generally were consistent in aligning to the linear line of best fit and did not start to form a cone-shape. As a follow-up, the unstandardized predicted values were cut into five equal groups to observe the variance ratio between the highest and the lowest value. As a general rule, the ratio of high to low variance is not an issue if less than 10 (Keith, 2015). The variance ratio was approximately 3, which was considered good in conjunction with a ratio to not exceed 10. From the scatterplot, the data points also did not resemble a cone-shape, which would be a concern. The results coincided with the scatterplot and illustrated a small depression in group 3 that showed up in the scatterplot as an indentation in the data point pattern. Generally, the indentation was considered within acceptable parameters and the variance ratio (highest variance = 13.415, lowest variance = 4.068) was within parameter limits to have met homoscedastic assumptions for regression (see Appendix D, Figure 9 and Figure 10).

The linearity of the regression model was evaluated through the Scatterplot of the unstandardized residual and predicted value. The nonparametric best fitting line or lowess line was used to assess linearity and had to illustrate the form of a reasonably straight line. An indication of not departing from linearity for the lowess line (i.e., what the lowess line looks like) was described by Cohen, Cohen, West, and Aiken (2003), “a young child’s freehand drawing of a straight line” (p. 111). Because the lowess line resembled a straight line, there was no indication of a departure of linearity. Also, the deviation from linearity had a Sig. value of .673 (i.e., ANOVA table for the unstandardized residual), which is greater than .05 and indicated a
linear relationship between the unstandardized residual (i.e., from self-efficacy) and instruction (or unstandardized predicted values) among general education teachers (see Appendix D, Figure 11).

The bivariate regression model with self-efficacy explained 10.2% ($R^2$) of the variance in the dependent variable (instruction) among general education teachers. Self-efficacy positively correlated with co-instruction ($r=.319, p<.05$). The mean of instruction was 18.79 (SD=3.10), and the mean for self-efficacy was 261.12 (SD=40.76). The model was further supported by ANOVA findings, $F(1,154)=17.446, p<.05$, which indicated the regression model was fitting the general education data. Self-efficacy was statistically significant ($p<.05$) in predicting instruction. Self-efficacy had a unique contribution of .319 (beta; or $b=0.024$ [unstandardized], standardized error [SE] =.006, 95% Confidence Intervals for $b$ [CI] = .013, .036) for instruction, meaning that for each unit increase in self-efficacy there was a .024 increase in general education teacher instruction (i.e., the unstandardized increase from $b$). Said using beta, for each additional standard deviation (SD) of self-efficacy resulted in a .319 SD increase in instruction (or about a third SD increase). When we examine how much instruction is explained by self-efficacy, we find out that self-efficacy uniquely explains 10.2% of the variance in instruction. Using Cohen’s $f^2$ (1988), the effect size was found to be .11, a small effect. Additionally, the regression equation is instruction(predicted)=12.461+.024(self-efficacy), where 12.461 represents the $y$-intercept and .024 represents the slope (i.e., see Figure 12). The regression equation can be used to predict general teachers’ roles and responsibilities for self-efficacy values outside the data (see Appendix D, Figure 12).

**Self-efficacy and planning.** Second, bivariate regression was conducted between co-planning and self-efficacy with planning as the dependent variable and self-efficacy as the
independent variable. Co-instruction had a regression coefficient of .44, which was relatively high compared to co-instruction and co-behavior management. General education teachers reported that they were more likely to participate in co-planning.

The intent was to observe self-efficacy as a predictor to planning. Initially, three cases prosed as outliers according to Tabachnick and Fidell (2013), which described any standardized residual below -3.3 or above 3.3 an outlier. Additionally, one case was observed as an outlier related to prediction error through casewise diagnostics in SPSS (see Appendix E, Figure 13). Thus, the four cases were removed from the analysis as outliers and the bivariate regression between self-efficacy and planning was re-ran with a sample of 156 (originally the sample was 160). Other assessments of normality were within accepted parameters. For instance, the histogram of the standardized residuals was examined in having a distribution close to normality. When inspecting the Normal Probability Plot (P-P) of the Regression Standardized Residual, there was an indication of normality since the Normal P-P Plot seemed to display a reasonable spread of data points lying along the straight diagonal line from bottom left to top right. Additionally, the Scatterplot of the standardized residual, had a reasonable display of normality by showing a roughly shaped rectangle spread with scores centering around the 0 point. From the Scatterplot, all values were now within the -3.3 and 3.3 range to not be identified as an outlier and resembled a rectangular shape tendency toward independence of residuals (i.e., another regression assumption met) (see Appendix E, Figure 14, Figure 15, and Figure 16). After the exclusion of four cases, the sample size was N=156 general education teachers. The sample of 156 general education teachers was considered within accepted sampling guidelines for regression (Tabachnick & Fidell, 2013).
The assumption for homoscedasticity was indicated by observing the scatterplot of standardized residuals with planning. In the scatterplot (below), the data points generally were consistent in aligning to the linear line of best fit and did not start to form a cone-shape. As a follow-up, the unstandardized predicted values were cut into five equal groups to observe the variance ratio between the highest and the lowest value. As a general rule, the ratio of high to low variance is not an issue if less than 10 (Keith, 2015). The variance ratio is approximately 2, nor did the data points tend to form a cone-shape. The variance ratio coincides with the scatterplot by displaying a spread from the line of best fit as a pattern. Generally, the variance ratio (highest variance = 22.713, lowest variance = 10.601) was considered within good parameters and within limits to have met homoscedastic assumptions for regression (see Appendix E, Figure 17 and Figure 18).

The linearity of the regression model was evaluated through the Scatterplot of the unstandardized residual and predicted value. The nonparametric best fitting line or lowess line was used to assess linearity and had to illustrate the form of a reasonably straight line. Because the lowess line resembled a straight line, there was no indication of a departure of linearity. Also, the deviation from linearity had a Sig. value of .747, which is greater than .05 and indicated a linear relationship between the unstandardized residual (i.e., from self-efficacy) and planning (or unstandardized predicted values) among general education teachers (see Appendix E, Figure 19).

The bivariate regression model with self-efficacy explained 19.5% ($R^2$) of the variance in the dependent variable (co-planning) among general education teachers. Self-efficacy correlates positively with planning ($r=.441, p<.05$). The mean of co-planning was 17.60 (SD=4.36), and the mean of self-efficacy was 216.12 (SD=40.76). The model was further supported by ANOVA
findings, $F(1,154)=37.243, p<.05$, which indicated the regression model was fitting the general education data. Self-efficacy was statistically significant ($p<.05$) in predicting planning. Self-efficacy had a unique contribution of .441 (beta; or $b=.047, SE =.008$, 95%CI = .032, .062) for planning, meaning that for each unit increase in self-efficacy there was a .047 increase in general education teacher planning. Using beta, for each additional SD of self-efficacy resulted in a .441 SD increase in planning (or about a half SD increase). Thus, when we look at how much planning is explained by self-efficacy, we find out that self-efficacy uniquely explains 19.5% of the variance in planning. Using Cohen’s $f^2$ (1988), the effect size was found to be .24, a medium effect. Additionally, the regression equation is planning(predicted)=5.276+.047(self-efficacy), where 5.276 represents the y-intercept and .047 represents the slope (i.e., see scatterplot below). The regression equation can be used to predict planning values for general teachers’ roles and responsibilities for self-efficacy values outside the data (see Appendix E, Figure 20).

**Self-efficacy and behavior management.** Third, bivariate regression was conducted between co-behavior management and self-efficacy with behavior management as the dependent variable and self-efficacy as the independent variable. Co-behavior management had a regression coefficient of .34, which was relatively low compared to co-differentiation and co-planning. General education teachers reported that they were less likely to participate in co-instruction. The intent was to observe self-efficacy as a predictor to behavior management. Initially, three cases were identified as outliers according to Tabachnick and Fidell (2013), which described any standardized residual below -3.3 or above 3.3 an outlier. Additionally, one case was observed as an outlier related to prediction error through casewise diagnostics in SPSS. In total, there were four outliers removed from the sample (see Appendix F, Figure 21).
Other assessments of normality were also evaluated. For example, the histogram of the standardized residual was examined in having a distribution like normal data. The Normal Probability Plot (P-P) of the Regression Standardized Residual indicated normality since the Normal P-P Plot seemed to display a reasonable spread of data points lying along the straight diagonal line from bottom left to top right. Additionally, the Scatterplot of the standardized residual, had a reasonable display of normality by showing a roughly shaped rectangle with scores centering around the 0 point. From the Scatterplot, all values were now within the -3.3 and 3.3 range to not be identified as outliers and resembled a rectangular shape tendency toward independence of residuals (see Appendix F, Figure 22, Figure 23, and Figure 24). The exclusion of four cases resulted in a sample size of N=156 general education teachers. The sample of 156 general education teachers was considered within accepted sampling guidelines for regression.

The assumption for homoscedasticity was indicated by observing the scatterplot of standardized residuals with behavior management. In the scatterplot, data points were generally consistent to the linear line of best fit and did not start to form a cone-shape. As a follow-up, the unstandardized predicted values were cut into five equal groups to observe the variance ratio between the highest and the lowest value. As a general rule of thumb, the ratio of high to low variance is not an issue if less than 10 (Keith, 2015). The variance ratio was approximately 2, nor did the data points resemble a cone-like shape. The variance ratio coincides with the scatterplot by displaying an evenly spread of data points along the diagonal line. Generally, the variance ratio (highest variance = 7.684, lowest variance = 4.310) was considered within good parameters and met homoscedastic assumptions for regression (See Appendix F, Figure 25 and Figure 26).
The linearity of the regression model was evaluated through the Scatterplot of the unstandardized residual (self-efficacy) and predicted value (co-behavior management). The nonparametric best fitting line or lowess line was used to assess linearity and had to illustrate the form of a reasonably straight line. Because the lowess line resembled a straight line, there was no indication of a departure of linearity. Also, the deviation from linearity had a Sig. value of .910, which is greater than .05 and indicated a linear relationship between the unstandardized residual (i.e., from self-efficacy) and behavior management (or unstandardized predicted values) among general education teachers (see Appendix F, Figure 27).

The bivariate regression model with self-efficacy explained 11.8% ($R^2$) of the variance in the dependent variable (behavior management) among general education teachers. Self-efficacy correlates positively with behavior management ($r=.344, p<.05$). The mean for behavior management was 21.801 (SD=2.54), while self-efficacy had a mean of 261.013 (SD=40.66). The model was further supported by ANOVA findings, $F(1,154)=20.655, p<.05$, which indicated the regression model was fitting the general education data. Self-efficacy was statistically significant ($p<.05$) in predicting behavior management. Self-efficacy had a unique contribution of .344 (beta; or $b=.021, SE =.005, 95\% CI = .012, .031$) for behavior management. Meaning that for each unit increase in self-efficacy there was a .021 increase in general education teacher behavior management. Describing the unit increase in beta terms, for each additional SD of self-efficacy resulted in a .344 SD increase in behavior management (or about a third SD increase). Thus, when we look at how much behavior management is explained by self-efficacy, we find out that self-efficacy uniquely explains 11.8% of the variance in behavior management. Using Cohen’s $f^2$ (1988), the effect size was .13, a small effect. Additionally, the regression equation is behavior management (predicted) = 16.197+.021(self-efficacy), where 16.197 represents the y-
intercept (where self-efficacy = 0) and .021 represents the slope (i.e., see scatterplot below). The regression equation can be used to predict behavior management values for general teachers’ roles and responsibilities for self-efficacy values outside the data (see Appendix F, Figure 28).

**Self-efficacy and differentiation.** Fourth, bivariate regression was conducted between co-differentiation and self-efficacy with co-differentiation as the dependent variable and self-efficacy as the independent variable. Co-instruction had a regression coefficient of .44, which was relatively high compared to co-instruction and co-behavior management. General education teachers reported that they were more likely to participate in co-planning.

The intent was to observe self-efficacy as a predictor to differentiation. Initially, three cases were identified as outliers according to Tabachnick and Fidell (2013), which described any standardized residual below -3.3 or above 3.3 an outlier. Additionally, one case was observed as an outlier related to prediction error through casewise diagnostics in SPSS. In total, there were four outliers removed from the sample. Thus, the sample was 156 general education teachers (see Appendix G, Figure 29).

Other assessments of normality were also evaluated. For example, the histogram of the standardized residual was examined in having a distribution like normal data. The Normal Probability Plot (P-P) of the Regression Standardized Residual indicated normality since the Normal P-P Plot seemed to display a reasonable spread of data points lying along the straight diagonal line from bottom left to top right. Additionally, the Scatterplot of the standardized residual, had a reasonable display of normality by showing a roughly shaped rectangle with scores centering around the 0 point. From the Scatterplot, all values were now within the -3.3 and 3.3 range to not be identified as outliers and resembled a rectangular shape tendency toward independence of residuals (see Appendix G, Figure 30, Figure 31, and Figure 32). The exclusion
of four cases resulted in a sample size of N=156 general education teachers. The sample of 156 general education teachers was considered within accepted sampling guidelines for regression.

The assumption for homoscedasticity was indicated by observing the scatterplot of standardized residuals with differentiation. In the scatterplot (below), data points were generally consistent to the linear line of best fit and did not start to form a cone-shape. As a follow-up, the unstandardized predicted values were cut into five equal groups to observe the variance ratio between the highest and the lowest value. As a general rule, the ratio of high to low variance is not an issue if less than 10 (Keith, 2015). The variance ratio was approximately 2, nor did the data points resemble a cone-like shape. The variance difference coincides with the scatterplot by displaying an even spread of data points along the diagonal line. Generally, the variance ratio (highest variance = 8.956, lowest variance = 5.435) was considered within good parameters and met homoscedastic assumptions for regression (See Appendix G, Figure 33 and Figure 34).

The linearity of the regression model was evaluated through the scatterplot of the unstandardized residual (self-efficacy) and predicted value (co-differentiation). The nonparametric best fitting line or lowess line was used to assess linearity and had to illustrate the form of a reasonably straight line. Because the lowess line resembled a straight line, there was no indication of a departure of linearity. Also, the deviation from linearity had a Sig. value of .902, which is greater than .05 and indicated a linear relationship between the unstandardized residual (i.e., from self-efficacy) and co-differentiation (or unstandardized predicted values) among general education teachers (see Appendix G, Figure 35).

The bivariate regression model with self-efficacy explained 22.3% ($R^2$) of the variance in the dependent variable (co-differentiation) among general education teachers. Self-efficacy correlates positively with differentiation ($r=.472$, $p<.05$). The mean for differentiation was
20.442 (SD=3.04), while self-efficacy had a mean of 261.494 (SD=40.78). The model was further supported by ANOVA findings, \( F(1,154)=44.243, p<.05 \), which indicated the regression model was fitting the general education data. Self-efficacy was statistically significant \( (p<.05) \) in predicting differentiation. Self-efficacy had a unique contribution of .472 (beta; or \( b=.035, \text{SE} = .005, 95\% \text{CI} = .025, .046 \)) for differentiation. Meaning that for each unit increase in self-efficacy there was a .035 increase in general education teacher differentiation. Describing the unit increase in terms of beta, for each additional SD of self-efficacy resulted in a .472 SD increase in differentiation (or about a half SD increase). Thus, when we look at how much differentiation is explained by self-efficacy, we find out that self-efficacy uniquely explains 22.3% of the variance in differentiation. Using Cohen’s \( f^2 \) (1988), the effect size was .29, a medium effect. Additionally, the regression equation is differentiation (predicted)=
\[ 11.227+.035(\text{self-efficacy}) \]
where 11.227 represents the y-intercept (where self-efficacy = 0 or no self-efficacy) and .035 represents the slope (i.e., see scatterplot below). The regression equation can be used to predict differentiation values for general teachers’ roles and responsibilities for self-efficacy values outside the data (see Appendix G, Figure 36).

**Research Question 5**

The study also looked to examine relationships between self-efficacy and the roles teachers perform. Question 4 asks the following: Is there a relationship between special education co-teacher roles and responsibilities in co-teaching situations and teacher self-efficacy?

In order to determine whether special education teacher roles and responsibilities in co-teaching were predictive of teacher self-efficacy, a bivariate regression model was conducted. The alpha level was set at \( p<.05 \).
Across co-instruction, co-planning, co-behavior management, and co-differentiation, self-efficacy had a positive correlation with each and small effect sizes. The graphic below summarizes the standardized coefficients (beta) of the predictive ability of self-efficacy on co-instruction, co-planning, co-behavior management, and co-differentiation. There were higher betas for co-planning and co-differentiation, suggesting self-efficacy contributes to those two areas more so than co-instruction and co-behavior management. The same result among general education teachers was also observed (namely, self-efficacy effecting co-planning and co-differentiation the most).

Positive self-efficacy is a predictor of all areas of roles and responsibilities measured: co-instruction, co-planning, co-behavior management, and co-differentiation.

**Self-efficacy and instruction.** First, bivariate regression was conducted between instruction and self-efficacy for special education teachers with instruction as the dependent variable and self-efficacy as the independent variable. Co-instruction had a regression
coefficient of .22, which was relatively low compared to co-planning and co-differentiation. Special education teachers reported that they were less likely to participate in co-instruction. The intent was to observe self-efficacy among special education teachers as a predictor to instruction. Four cases were identified as outliers according to Tabachnick and Fidell (2013), which described any standardized residual below -3.3 or above 3.3 as an outlier. Also, one of the four cases were also an outlier based on prediction error through casewise diagnostics in SPSS. In total, there were four outliers removed from the sample and observed in the figure below. Thus, the sample was 156 special education teachers (see Appendix H, Figure 37).

Additional assessment on normality were evaluated. For example, the histogram of the standardized residual was examined in having a distribution resembling normal data. The Normal Probability Plot (P-P) of the Regression Standardized Residual indicated normality since the Normal P-P Plot seemed to display a reasonable spread of data points lying along the straight diagonal line from bottom left to top right. The Scatterplot of the standardized residual, had a reasonable display of normality by showing a roughly shaped rectangle with scores centering around the 0 point. From the Scatterplot, all values were now within the -3.3 and 3.3 range to not be identified as outliers and resembled a rectangular shape tendency toward independence of residuals (see Appendix H, Figure 38, Figure 39, Figure 40).

The exclusion of four cases resulted in a sample size of N=156 special education teachers. The sample of 156 special education teachers was considered within accepted sampling guidelines for regression. For instance, Tabachnick and Fidell (2013) recommend the following equation in determining an appropriate sample size, \( N > 50 + 8m \) (\( m \) = number of independent variables). Thus, with one independent variable proposed the equation becomes N
> 50 + 8(1), which equals N > 58 or the sample needs to be greater than 58. Since N=156, that means the current sample is an appropriate sample indicating no issues with sample size.

The assumption for homoscedasticity was indicated by observing the scatterplot of standardized residuals with instruction. In the scatterplot (below), data points were generally consistent to the linear line of fit and did not start to form a cone-shape. As a follow-up, the unstandardized predicted values were cut into five equal groups to observe the variance ratio between the highest and the lowest value. As a general rule, the ratio of high to low variance is not an issue if less than 10 (Keith, 2015). The ratio of low to high variance was approximately 2, nor did the data points resemble a cone-like shape. The ratio of the variance coincides with the scatterplot by displaying an even spread of data points along the diagonal line. Generally, the variance ratio (highest variance = 18.205, lowest variance = 8.460) was considered within good parameters and met homoscedastic assumptions for regression (see Appendix H, Figure 41; and Figure 42).

The linearity of the regression model was evaluated through the scatterplot of the unstandardized residual (self-efficacy) and predicted value (instruction). The nonparametric best fitting line or lowess line was used to assess linearity and had to illustrate the form of a reasonably straight line. Because the lowess line did not resemble a straight line, there was not a clear indication of linearity. However, the deviation from linearity (i.e., tested through ANOVA) had a Sig. value of .677, which is greater than .05 and indicated a linear relationship between the unstandardized residual (i.e., from self-efficacy) and instruction (or unstandardized predicted values) among special education teachers (see Appendix H, Figure 43).

The bivariate regression model with self-efficacy explained 5.0% ($R^2$) of the variance in the dependent variable (instruction) among special education teachers. Self-efficacy correlated
positively with instruction ($r=.224, p<.05$). The mean for instruction was 17.391 (SD=3.76), while self-efficacy had a mean of 252.667 (SD=41.67). The model was further supported by ANOVA findings, $F(1,154)=8.162, p<.05$, which indicated the regression model was fitting the special education data. Self-efficacy was statistically significant ($p<.05$) in predicting instruction. Self-efficacy had a unique contribution of .224 (beta; or $b=.020, SE =.007, 95\% CI = .006, .034$) for instruction, meaning that for each unit increase in self-efficacy there was a .020 increase in special education teacher instruction. Describing the unit increase in terms of beta, for each additional SD of self-efficacy resulted in a .224 SD increase in instruction (or about a fifth SD increase). Thus, when we look at how much instruction is explained by self-efficacy, we find out that self-efficacy uniquely explains 5.0% of the variance in instruction. Using Cohen’s $f^2$ (1988), the effect size was .05, a small effect. Additionally, the regression equation is 

$$\text{instruction(predicted)} = 12.269 + .020(\text{self-efficacy}),$$

where 12.269 represents the y-intercept (where self-efficacy = 0 or no self-efficacy) and .020 represents the slope (i.e., see scatterplot below). The regression equation can be used to predict instruction values for special education teachers’ roles and responsibilities for self-efficacy values outside the data (Appendix H, Figure 44).

**Self-efficacy and planning.** Second, bivariate regression was conducted between planning and self-efficacy for special education teachers with planning as the dependent variable and self-efficacy as the independent variable. Co-planning had a regression coefficient of .28, which was relatively high compared to co-instruction and co-behavior management. Special education teachers reported that they were more likely to participate in co-planning.

The intent was to observe self-efficacy among special education teachers as a predictor to planning. Three cases were identified as outliers according to Tabachnick and Fidell (2013),
which described any standardized residual below -3.3 or above 3.3 as an outlier. At or near -3.3 was also considered an outlier for this data set. No cases were considered an outlier based on prediction error through casewise diagnostics in SPSS. In total, there were three outliers removed from the sample and observed in the figure. Thus, the sample was 157 special education teachers (see Appendix I, Figure 45).

Additional assessment on normality were evaluated. For example, the histogram of the standardized residual was examined in having a distribution resembling normal data. The Normal Probability Plot (P-P) of the Regression Standardized Residual indicated normality since the Normal P-P Plot seemed to display a reasonable spread of data points lying along the straight diagonal line from bottom left to top right. The Scatterplot of the standardized residual, had a reasonable display of normality by showing a roughly shaped rectangle with scores centering around the 0 point. From the Scatterplot, all values were now within the -3.3 and 3.3 range to not be identified as outliers and resembled a rectangular shape tendency toward independence of residuals (Appendix I, Figure 46, Figure 47, and Figure 48).

The exclusion of three cases resulted in a sample size of N=157 special education teachers. The sample of 157 special education teachers was considered within accepted sampling guidelines for regression. For instance, Tabachnick and Fidell (2013) recommend the following equation in determining an appropriate sample size, $N > 50 + 8m$ (m = number of independent variables). Thus, with one independent variable proposed the equation becomes $N > 50 + 8(1)$, which equals $N > 58$ or the sample needs to be greater than 58. Since $N=157$, that means the current sample is an appropriate sample indicating no issues with sample size.

The assumption for homoscedasticity was indicated by observing the scatterplot of standardized residuals with planning. In the scatterplot (below), data points were generally
consistent to the linear line of fit and did not start to form a cone-shape. As a follow-up, the unstandardized predicted values were cut into five equal groups to observe the variance ratio between the highest and the lowest value. As a general rule of thumb, the ratio of high to low variance is not an issue if less than 10 (Keith, 2015). The ratio between the low and high variance was approximately 2 and did not exceed 10, nor did the data points resemble a cone-like shape. The variance ratio coincides with the scatterplot by displaying an even spread of data points along the diagonal line. Generally, the variance ratio (highest variance = 33.363, lowest variance = 13.649) was considered within good parameters and met homoscedastic assumptions for regression (see Appendix I, Figure 49 and Figure 50).

The linearity of the regression model was evaluated through the scatterplot of the unstandardized residual (self-efficacy) and predicted value (planning). The nonparametric best fitting line or lowess line was used to assess linearity and had to illustrate the form of a reasonably straight line. Because the lowess line did resemble a straight line, there was an indication of linearity. However, the deviation from linearity (i.e., tested through ANOVA) had a Sig. value of .203, which is greater than .05 and indicated a linear relationship between the unstandardized residual (i.e., from self-efficacy) and planning (or unstandardized predicted values) among special education teachers (see Appendix I, Figure 51).

The bivariate regression model with self-efficacy explained 7.5% ($R^2$) of the variance in the dependent variable (planning) among special education teachers. Self-efficacy correlated positively with planning ($r=.275$, $p<.05$). The mean for planning was 16.185 (SD=5.00), while self-efficacy had a mean of 253.006 (SD=41.75). The model was further supported by ANOVA findings, $F(1,155)=12.654$, $p<.05$, which indicated the regression model was fitting the special education data. Self-efficacy was statistically significant ($p<.05$) in predicting planning. Self-
efficacy had a unique contribution of .275 (beta; or b=.033, SE =.009, 95%CI = .015, .051) for planning. Meaning that for each unit increase in self-efficacy there was a .033 increase in special education teacher planning. Describing the unit increase in terms of beta, for each additional SD of self-efficacy resulted in a .275 SD increase in planning (or about a fourth SD increase). Thus, when we look at how much planning is explained by self-efficacy, we find out that self-efficacy uniquely explains 7.5% of the variance in planning. Using Cohen’s $f^2$ (1988), the effect size was .08, a small effect. Additionally, the regression equation is planning(predicted)= 7.859+.033(self-efficacy), where 7.859 represents the y-intercept (where self-efficacy = 0 or no self-efficacy) and .033 represents the slope (i.e., see scatterplot below). The regression equation can be used to predict planning values for special education teachers’ roles and responsibilities for self-efficacy values outside the data (Appendix I, Figure 52).

**Self-efficacy and behavior management.** Third, bivariate regression was conducted between behavior management and self-efficacy for special education teachers with behavior management as the dependent variable and self-efficacy as the independent variable. Co-behavior management had a regression coefficient of .21, which was relatively low compared to co-planning and co-differentiation. Special education teachers reported that they were less likely to participate in co-behavior management.

The intent was to observe self-efficacy among special education teachers as a predictor to their behavior management. Two cases were first identified as outliers based on prediction error through casewise diagnostics in SPSS and were removed (see Appendix I9, Figure 53). However, an additional case was identified as an outlier based on prediction error through casewise diagnostics and was also removed. Once this outlier was removed and the regression
model re-assessed, another outlier was identified through prediction error. This outlier was also removed.

In total, four cases were removed because of prediction error. Four data points were on the fence and close to what Tabachnick and Fidell (2013) described as outliers, which were standardized residuals below -3.3 or above 3.3. Normality was poorly met, but considered the best result without taking more from the sample. In total, there were four outliers removed from the sample, the sample was 156 special education teachers.

Normality of the data was poor and considered for further analysis. For example, the histogram of the standardized residual was examined in having a poor distribution resembling normal data. The Normal Probability Plot (P-P) of the Regression Standardized Residual indicated normality at the bottom half and not at the top half, as indicated by the diagonal line from bottom left to top right. The scatterplot of the standardized residual was improved by removing outliers; however, there was still a rough resemblance to normality by an unclearly shaped rectangle with scores centering around the 0 point. From the Scatterplot, all values were now within the -3.3 and 3.3 range to not be identified as outliers and roughly tended toward independence of residuals. In other words, at the best display for ideal conditions for normality; however, to reach improved normality conditions by taking away further from the sample seemed to misrepresent the data (i.e., the statistical difference pertaining to special education teachers’ behavior management compared to general education teachers observed in research question 3) (see Appendix J, Figure 54, Figure 55, and Figure 56).

The exclusion of four cases resulted in a sample size of N=156 special education teachers. The sample of 156 special education teachers was considered within accepted sampling guidelines for regression. Furthermore, attempts were made to retain the maximum
possible sample in order to capture data representing special education teachers’ behavior management as it pertains to the influence of self-efficacy.

The assumption for homoscedasticity was indicated by observing the scatterplot of standardized residuals with behavior management. In the scatterplot (below), data points were generally consistent to the line of fit and did not start to form a cone-shape. As a follow-up, the unstandardized predicted values were cut into five equal groups to observe the variance ratio between the highest and the lowest value. As a general rule of thumb, the ratio of high to low variance is not an issue if less than 10 (Keith, 2015). The ratio between the low and high variance was approximately 2 and did not exceed 10, nor did the data points resemble a cone-like shape. The variance ratio coincides with the scatterplot by displaying an even spread of data points along the diagonal line. Generally, the variance ratio (highest variance = 13.786, lowest variance = 7.833) was considered within good parameters and met homoscedastic assumptions for regression (see Appendix J, Figure 57 and Figure 58).

The linearity of the regression model was evaluated through the scatterplot of the unstandardized residual (self-efficacy) and predicted value (behavior management). The nonparametric best fitting line or lowess line was used to assess linearity and had to illustrate the form of a reasonably straight line. Because the lowess line resembled a poor looking straight line, there was no indication of linearity. However, the deviation from linearity (i.e., tested through ANOVA) had a Sig. value of .883, which is greater than .05 and indicated a linear relationship between the unstandardized residual (i.e., from self-efficacy) and behavior management (or unstandardized predicted values) among special education teachers (see Appendix J, Figure 59).
The bivariate regression model with self-efficacy explained 4.4% \( (R^2) \) of the variance in the dependent variable (behavior management) among special education teachers. Self-efficacy correlated positively with behavior management \( (r=.210, p<.05) \). The mean for behavior management was 20.994 (SD=3.26), while self-efficacy had a mean of 251.474 (SD=44.06). The model was further supported by ANOVA findings, \( F(1,154)=7.085, p<.05 \), which indicated the regression model was fitting the special education data. Self-efficacy was statistically significant \( (p<.05) \) in predicting behavior management. Self-efficacy had a unique contribution of .210 (beta; or \( b=.015, SE =.006, 95\%CI = .004, .027 \)) for behavior management, meaning that for each unit increase in self-efficacy there was a .015 increase in special education teacher behavior management. Describing the unit increase in terms of beta, for each additional SD of self-efficacy resulted in a .210 SD increase in behavior management (or about a fifth SD increase). Thus, when we look at how much behavior management is explained by self-efficacy, we find out that self-efficacy uniquely explains 4.4% of the variance in behavior management. Using Cohen’s \( f^2 \) (1988), the effect size was .05, a small effect. Additionally, the regression equation is behavior management\( (\text{predicted}) = 17.10+.015(\text{self-efficacy}) \), where 17.10 represents the y-intercept (where self-efficacy = 0 or no self-efficacy) and .015 represents the slope (i.e., see scatterplot below). The regression equation can be used to predict behavior management values for special education teachers’ roles and responsibilities for self-efficacy values outside the data (Appendix J, Figure 60).

**Self-efficacy and differentiation.** Fourth, bivariate regression was conducted between differentiation and self-efficacy for special education teachers with differentiation as the dependent variable and self-efficacy as the independent variable. Co-differentiation had a regression coefficient of .33, which was relatively high compared to co-instruction and co-
behavior management. Special education teachers reported that they were more likely to participate in co-differentiation.

The intent was to observe self-efficacy among special education teachers as a predictor to differentiation. One case was identified as an outlier according to Tabachnick and Fidell (2013), which described any standardized residual below -3.3 or above 3.3 an outlier. One case was also observed as an outlier based on prediction error through casewise diagnostics in SPSS. In total, there were two outliers removed from the sample and observed in the figure below. Thus, the sample was 158 special education teachers (see Appendix K, Figure 61).

Additional assessment on normality were evaluated. For example, the histogram of the standardized residual was examined in having a distribution resembling normal data. The Normal Probability Plot (P-P) of the Regression Standardized Residual indicated normality since the Normal P-P Plot seemed to display a reasonable spread of data points lying along the straight diagonal line from bottom left to top right. The scatterplot of the standardized residual, had a reasonable display of normality by showing a roughly shaped rectangle with scores centering around the 0 point. From the scatterplot, all values were now within the -3.3 and 3.3 range to not be identified as outliers and resembled a rectangular shape tendency toward independence of residuals (see Appendix K, Figure 62, Figure 63, and Figure 64).

The exclusion of two cases resulted in a sample size of N=158 special education teachers. The sample of 158 special education teachers was considered within accepted sampling guidelines for regression. With one independent variable proposed the equation becomes N > 50 + 8(1), which equals N > 58 or the sample needs to be greater than 58. Since N=158, that means the current sample is an appropriate sample indicating no issues with sample size.
The assumption for homoscedasticity was indicated by observing the scatterplot of standardized residuals with differentiation. In the scatterplot (below), data points were generally consistent with the line of fit and did not start to form a cone-shape. However, there were roughly two data points sticking out from the consistent pattern. As a follow-up, the unstandardized predicted values were cut into five equal groups to observe the variance ratio between the highest and the lowest value. As a general rule, the ratio of high to low variance is not an issue if less than 10 (Keith, 2015). The ratio between the low and high variance was approximately 2.5 and did not exceed 10, nor did the data points resemble a cone-like shape. The variance ratio coincides with the scatterplot by displaying an even spread of data points along the diagonal line. Generally, the variance ratio (highest variance = 17.652, lowest variance = 7.047) was considered within good parameters and met homoscedastic assumptions for regression (see Appendix K, Figure 65 and Figure 66).

The linearity of the regression model was evaluated through the scatterplot of the unstandardized residual (self-efficacy) and predicted value (differentiation). The nonparametric best fitting line or lowess line was used to assess linearity and had to illustrate the form of a reasonably straight line. Because the lowess line did resemble a straight line, there was an indication of linearity. However, the deviation from linearity (i.e., tested through ANOVA) had a Sig. value of .493, which is greater than .05 and indicated a linear relationship between the unstandardized residual (i.e., from self-efficacy) and differentiation (or unstandardized predicted values) among special education teachers (see Appendix K, Figure 67).

The bivariate regression model with self-efficacy explained 11.2% (R²) of the variance in the dependent variable (differentiation) among special education teachers. Self-efficacy correlated positively with differentiation (r=.334, p<.05). The mean for differentiation was
19.69 (SD=3.57), while self-efficacy had a mean of 250.962 (SD=44.07). The model was further supported by ANOVA findings, $F(1,156)=19.641, p<.05$, which indicated the regression model was fitting the special education data. Self-efficacy was statistically significant ($p<.05$) in predicting differentiation. Self-efficacy had a unique contribution of .334 (beta; or $b=.027$, SE =.006, 95%CI = .015, .039) for differentiation, meaning that for each unit increase in self-efficacy there was a .027 increase in special education teacher differentiation. Describing the unit increase in terms of beta, for each additional SD of self-efficacy resulted in a .334 SD increase in differentiation (or about a third SD increase). Thus, when we look at how much differentiation is explained by self-efficacy, we find out that self-efficacy uniquely explains 11.2% of the variance in differentiation. Using Cohen’s $f^2$ (1988), the effect size was .13, a small effect. Additionally, the regression equation is differentiation(predicted) = 12.897+.027(self-efficacy), where 12.897 represents the y-intercept (where self-efficacy = 0 or no self-efficacy) and .027 represents the slope (i.e., see scatterplot below). The regression equation can be used to predict differentiation values for special education teachers’ roles and responsibilities for self-efficacy values outside the data (see Appendix K, Figure 68).
Co-teaching has become the most common method to provide direct instruction of the general education curriculum for special education students (Bryant Davis et al., 2012; Morningstar et al., 2015; Yopp et al., 2014). However, there are few standards for professional practice for co-teachers, particularly in defining co-teaching roles and responsibilities (Morgan, 2016). This study examined what roles and responsibilities the special education and the general education teacher report actually performing in a co-taught classroom as well as what roles they think would be best practice to do. How these reported roles relate to personal teacher self-efficacy was also examined.

There is little in the literature that indicates whether co-teachers report on the roles and responsibilities that they consider to be best practice. Additionally, co-teacher self-efficacy has not thus far been tied to the roles that teachers report actually performing or report that they think are best practice. Research does indicate that defining roles and responsibilities is a best practice that co-teachers should undertake and leads to positive co-teacher, student, and school-wide outcomes (Austin, 2001; Bouck, 2010; Morgan, 2016; Rytivaara, 2012; Wasborn-Moses, 2005; Weiss & Lloyd, 2002). Also, co-teacher self-efficacy improves when co-teachers engage in activities considered to be best practice (Anderson & Standerford, 2012; Fanni et al., 2013; Shoulders & Krei, 2015). Previously, there was little in the research on co-teacher self-reported roles in the co-taught classroom and what co-teachers do to prepare for co-taught lessons, including in the areas of instruction, planning, behavior management, and differentiation (Hamdan, Anuar, & Khan, 2015; Morningstar et al., 2015; Strieker et al 2013). This chapter will
describe the results, discuss implications of the findings, limitations of the research, and provide a discussion for future lines of inquiry.

**Discussion of Results**

**Research Question 1**

Question one examined whether there was a significant difference between general education co-teachers’ present roles and responsibilities and the roles and responsibilities that they consider to be best practice. The data analysis indicated there was in fact a significant difference. On all roles and responsibilities listed, general education teachers overwhelmingly responded that they considered the roles presented in the questionnaire to be best practice, and that they executed fewer of these roles. The results disclose that general education teachers do not perform specific roles and responsibilities and that general education teachers do not do what they think is best practice. This is in contrast to the literature, which indicates that co-teachers should develop roles and responsibilities for best practice (Austin, 2001; Bouck, 2010; Morgan, 2016; Rytivaara, 2012; Wasburn-Moses, 2005; Weiss & Lloyd, 2002).

Although fulfilling roles and responsibilities has been found to improve cooperation between co-teachers in the literature, the current findings show that teacher participants in this setting do not do what they think is best practice. These respondents could greatly improve their performance if they determined together which teacher would perform what roles prior to and as they teach (Bouck, 2010; Morgan, 2016, Rytivaara, 2012). Teachers are conclusively not reporting functioning at a level that supports best practice to maximize student growth.

**Research Question 2**

Question two examined whether there was a significant difference between special education co-teachers’ present roles and responsibilities and the roles and responsibilities that
they consider to be best practice. The data analysis indicated there was a significant difference between actual practice and perceived best practice. Of roles and responsibilities presented in the survey, special education teachers overwhelmingly responded that they fulfilled fewer of the roles that they reported as best practice. Special educators reported doing far fewer actual roles than best practice roles in the area of co-instruction, co-planning, co-behavior management, and co-differentiation. The results show that special education teachers, like their general education partners, do not do what they think is best practice. This finding does not align with the recommendations in the literature which reveals that co-teachers should develop roles and responsibilities for best practice (Austin, 2001; Bouck, 2010; Morgan, 2016; Rytivaara, 2012; Wasborn-Moses, 2005; Weiss & Lloyd, 2002).

Based on the results of the survey, teachers are not reporting performing at a level that would be considered best practice. If teachers were able to engage students through co-teacher cooperation, this might lead to positive student outcomes (Bouck, 2010; Morgan, 2016; Rytivaara, 2012).

Of the respondents in this setting, a breakdown is evident between what the teachers actually do and what teachers think is best practice. If co-teachers followed the recommendations found in the literature, co-teacher and student outcomes could be quite different (Morgan, 2016; Rytivaara, 2012). The results of this study indicate that teachers could greatly improve their practice. Training and preparation for co-teaching could be a key in increasing self-efficacy to solve this problem (Loreman et al., 2013; Pancsofar & Petroff, 2013; Sandholtz & Ringstaff, 2014; Stevens et al., 2013; Streiker et al., 2013).
Research Question 3

Question three analyzed whether there was a significant difference between co-teachers’ (special education and general education) perceived roles and responsibilities in co-teaching situations. The results display that there is a significant relationship between the roles that special education and general education teachers report doing in a co-taught class in the areas of co-instruction, co-planning, and co-behavior management. They were the same in the area of co-differentiation. This means that the roles reported by co-teachers in these areas differed to an extent that general educators assumed roles that were distinctly unique from their special educator partners.

The roles for instruction were statistically significantly different between general education teachers and special educators. General educators, who are curriculum specialists, are providing more academic direction on the material while the special education teachers, who are the strategy specialists, are implementing more learning strategies to increase comprehension (Rytivaara, 2012; Wasborn-Moses, 2005). The outcome for students is increased comprehension of the general education curriculum (Morgan, 2016).

Responsibilities for behavior management were found to be significantly different between general education and special education teachers. This aligns with the literature that indicates that special education teachers provide more individualized behavior instruction, and the general education teachers give more generalized instruction about enforcing classroom rules (Morningstar et al., 2015).

Research Question 4

Question four sought to determine whether there is a relationship between general education co-teacher roles and responsibilities in co-teaching situations and co-teacher self-
efficacy. The analysis displayed that self-efficacy was a predictor of the roles co-planning and co-differentiation for general educators. The higher the self-efficacy of general educators, the more likely the teachers were to plan in advance for the lesson. The greater the general educator self-efficacy, the more likely they were to report differentiating instruction. The research displays that when co-teachers engaged in evidence-based instructional practices and classroom management, they had higher self-efficacy and that best practice was found to increase perceived effectiveness in the inclusive classroom (Anderson & Standerford, 2012; Fanni et al., 2013; Shoulders & Krei, 2015). The literature stating that co-teaching is positively associated with self-efficacy was affirmed (Pancsofar & Petroff, 2013).

For general education teachers with higher self-efficacy, the focus is more academic (co-planning and co-differentiation), and less focused on teaming together to achieve positive behaviors and co-instruction of the material. General education teachers are planning and differentiating with their co-teachers, which results in students receiving a well thought out lesson and having the material geared toward their specific needs, which confirms the literature on co-teaching (Bouck, 2010; Morgan, 2016).

**Research Question 5**

Question five asked if there was a relationship between special education teacher roles and responsibilities in co-teaching situations and co-teacher self-efficacy. The statistical analysis exhibited that self-efficacy is a predictor of differentiation of the instruction and planning for the instruction for special education teachers. The higher the self-efficacy or perceived effectiveness, the more a special education teacher differentiates the instruction. The higher the self-efficacy of special educators, the more likely the teachers were to engage in planning for the
lesson. This confirmed the literature that reported that co-teaching is positively associated with self-efficacy (Pancsofar & Petroff, 2013).

The findings were consistent with findings in the literature. The research shows that when co-teachers engaged in evidence-based instructional practices and classroom management, their self-efficacy increased. Previous research found that engaging in best practice was found to increase perceived effectiveness in the inclusive classroom (Anderson & Standerford, 2012; Fanni et al., 2013; Shoulders & Krei, 2015). The current study found that co-teachers with high self-efficacy reported participating in more of the roles listed in the survey.

Co-teachers reported in the current findings that they meet to plan with their co-teacher, and they also differentiate the curriculum. Research indicates that this leads to improved student outcomes (Morgan, 2016).

**Implications for Practice**

The results of this study elude to the need for improvement in the practice of co-teaching. For co-teachers to begin doing more of what they themselves consider to be best practice, increased knowledge about co-teaching is needed. Previous research shows that levels of self-efficacy increase with more education (Anderson & Standerford, 2012; Conderman et al., 2012; Fanni et al., 2013; Loreman et al., 2013; Montgomery & Mirenda, 2014; Pancsofar & Petroff, 2013; Sandholtz & Ringstaff, 2014; Shoulders & Krei, 2015; Stevens et al., 2013; Streiker et al., 2013). As self-efficacy in this case predicted the differentiation and planning of co-teachers, school districts could consider adding additional professional development to help improve teachers’ confidence in the classroom. Bridging this gap can be found with increased in-service training and professional development (Pugach & Winn, 2011).
Limitations

As with all research, there are several limitations to this study. First, the survey which gathered information about co-teaching roles and responsibilities of co-teachers had not been validated, which would have ensured that the questions indeed measured what they intended to measure. The questions on roles and responsibilities of co-teachers may not have been the result of an adequate or thorough enough review of the literature, and therefore the data gathered may not be accurate or a true reflection of the population (Sapsford, 2007).

Secondly, the survey was distributed across one geographic area and did not include participants from other regions of the United States. Next, the participants in this study self-reported their own thoughts and behaviors. If a researcher were to interview or observe the teachers, the findings could be confirmed. Additionally, due to the process of survey distribution, the total number surveys sent out remains unknown. Moreover, the questionnaire was relatively long (approximately 18 minutes), and many co-teachers chose not to complete the survey. This created incomplete surveys that had to be discarded, which could have led to inaccuracies in the reporting of results (Sapsford, 2007).

Finally, respondents may not have felt comfortable providing answers that may show the participant in an unfavorable manner. In the survey, teachers were asked to answer honestly, but having to admit that they do not do what is considered best practice in co-teaching situations is incriminating. If the respondents did not trust that the information provided and the identities of the respondents will be held confidential, then they may not have answered truthfully (Survey Fundamentals, 2017).
Recommendations for Future Research

Future research should examine the roles and responsibilities that co-teachers should undertake in order to achieve best practice. Further study should include a direct examination of the roles and responsibilities that co-teachers are actually doing in the classroom and compare this to self-reporting. Examining the difference between general education and special education teachers for specific tasks in instruction, planning, behavior management, and differentiation should be the focus of future research. It is also important to examine the factors in schools that are impeding co-teaching as well as those that are in place that support co-teaching as related to teacher self-report. This would provide more specific comparisons of roles between general and special education teachers as related to the working environment. Additionally, if future research took place on a national level, this would result in all of the participants being representative of all regions of the United States. A validation of the survey instrument used in this study should be conducted in a research study in the future. Further research should examine the differences between high school and elementary school co-teachers. Finally, future research should include observations that would be compared to the self-reported roles in this study.

Conclusion

This study contributes to the knowledge regarding reported roles and responsibilities of co-teachers and the effect of reported self-efficacy on the roles that co-teachers choose to fulfill. The five research questions in this study focused on the reported actual and best practice roles of co-teachers and the extent to which co-teacher self-efficacy predicted reported roles. The data analysis disclosed that co-teachers reported executing fewer roles than what they considered best practice. These results are a signal that there is a considerable discrepancy between what co-
teachers perceive best practice is and what they are actually doing in the co-taught classroom. Significantly, both general educators and special educators reported engaging in completely different tasks than their partners in the areas of co-instruction, co-planning, and co-behavior management. Further, the analysis indicated that co-teachers with greater self-efficacy were more likely to plan and differentiate the instruction together. This result is a promising sign that co-teachers report intentionally planning the instruction and differentiating the instruction for the diversity of learners found in a co-taught class.
APPENDICES
APPENDIX A

MATRIX OF AUTHOR SOURCES FOR THE QUESTIONNAIRE
<table>
<thead>
<tr>
<th>Author</th>
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<th>Behavior Management</th>
<th>Differentiation/ Instructional differences</th>
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APPENDIX B

SURVEY ON THE RELATIONSHIP BETWEEN
CO-TEACHING ROLES AND RESPONSIBILITIES AND
CO-TEACHER SELF-EFFICACY
Definitions:
Co-teaching is defined as one general education teacher and one special education teacher planning, collaborating, instructing, and managing a classroom together.

Team-teaching is two teachers delivering content to the whole group of students simultaneously.

Collaboration is a style of interaction between individuals engaged in shared decision making as they work toward a common goal, and they share decision-making authority and accountability for outcomes.

Please note that your honest answers are being sought. Answer the questions in a way that reflects your actual practice. Later in the survey, you will be asked about roles you believe special education teachers or general education teachers should fulfill in co-teaching and co-teaming arrangements. Be aware that we realize that no teacher is able to attend to all of their many roles simultaneously.

Think of a co-teaching situation (one general education teacher and one special education teacher) that you are currently in (or were recently in). Below is a list of roles co-teachers often assume in the classroom. Please indicate how much time you CURRENTLY SPEND (or have most recently spent) in a co-taught classroom using the 5-point scale, with 0 being Never, and 4 being Almost Always.

When in a co-teaching situation, I do the following.

**Instruction**
When in a co-teaching situation, I currently do the following.

1. **Attend to all students.**
   - Never
   - Seldom
   - Some of the time
   - Most of the time
   - Almost Always

2. **Provide instruction to the whole class.**
   - Never
   - Seldom
   - Some of the time
   - Most of the time
   - Almost Always

3. **Provide instruction to individuals or small groups.**
   - Never
   - Seldom
   - Some of the time
   - Most of the time
   - Almost Always

4. **Participate in team teaching.**
   - Never
   - Seldom
   - Some of the time
   - Most of the time
   - Almost Always
5. Apply effective collaboration techniques in instructional settings.

   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

**Planning**

When in a co-teaching situation, I currently do the following.

1. Assign roles and responsibilities for my co-teacher and me.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

2. Have a regular planning time to meet with my co-teacher.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

3. Collaborate with my co-teacher to design and implement instruction.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

4. Use student data to plan my instruction.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

5. Plan for individual student needs (whether special education or general education).
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

**Behavior Management**

When in a co-teaching situation, I currently do the following.

1. Address the behavior of the whole class.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

2. Address the behavior of individual students.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

3. Enforce the rules of the classroom.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always
4. Share responsibility with my co-teacher in behavior management together.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

5. Implement positive behavioral supports that teach appropriate social skills.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

**Differentiation/Instructional Differences**

When in a co-teaching situation, I currently do the following.

1. Work one-on-one, in small group, or in a large group with student on IEP objectives.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

2. Provide supports necessary for participation and engagement in learning.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

3. Make modifications for students who are struggling with the material.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

4. Implement learning strategies for students.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

5. Develop collaborative lessons to ensure that individuals with special needs have access to
   and participate in the general education instruction.
   0 1 2 3 4
   Never Seldom Some of the time Most of the time Almost Always

**Demographic Data**

Now, we would like to ask you some demographic questions.

1. What position were you in when you were co-teaching?
   General Education Teacher
   Special Education Teacher

2. Please tell us how many years of experience you have teaching:

3. Please type in how many years of experience you have:
4. Please tell us how many years of experience you have co-teaching (when a general educator and special educator jointly plan for and teach in the same classroom for the benefit of both students with and without disabilities):

5. Please write in the number of years you have co-taught:

6. Please indicate your gender:
   - Male
   - Female

7. Have you had training in the practice of co-teaching?
   - Yes
   - No

8. Please indicate your age:

9. Please indicate your race:
   - White
   - African American
   - American Indian
   - Asian
   - Native Hawaiian or
     - Pacific Islander
   - Two or More Races
   - Hispanic or Latino
   - Not Hispanic or Latino

10. Educational Level:
    - Bachelors
    - Masters
    - Doctorate

**Teacher Self-Efficacy Scale (Bandura)**
Now, we would like you to shift focus to thinking about how effective you feel you are as a teacher. This part of the survey is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please rate how certain you are that you can do the things discussed below by indicating the appropriate number. Your answers will be kept strictly confidential and will not be identified by name.

*Rate your degree of confidence by recording a number from 0 to 10 using the scale given below:*

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<td>Cannot do at all</td>
<td>Moderately can do</td>
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<td><strong>Efficacy to Influence Decision Making</strong></td>
<td><strong>Confidence (0-10)</strong></td>
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<td>Influence the decisions that are made in the school</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
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| Express my views freely on important school matters | 0 1 2 3 4 5 6 7 8 9 10 |
| Cannot do at all | Moderately can do | Highly certain can do |

| Get the instructional materials and equipment I need | 0 1 2 3 4 5 6 7 8 9 10 |
| Cannot do at all | Moderately can do | Highly certain can do |

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<tr>
<th><strong>Instructional Self-Efficacy</strong></th>
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<tr>
<td>Get through to the most difficult students</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
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<td>Cannot do at all</td>
<td>Moderately can do</td>
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| Get students to learn when there is a lack of support from the home | 0 1 2 3 4 5 6 7 8 9 10 |
| Cannot do at all | Moderately can do | Highly certain can do |

| Keep students on task on difficult assignments | 0 1 2 3 4 5 6 7 8 9 10 |
| Cannot do at all | Moderately can do | Highly certain can do |

| Increase students’ memory of what they have been taught in previous lessons | 0 1 2 3 4 5 6 7 8 9 10 |
| Cannot do at all | Moderately can do | Highly certain can do |

| Motivate students who show low interest in schoolwork | 0 1 2 3 4 5 6 7 8 9 10 |
| Cannot do at all | Moderately can do | Highly certain can do |

| Get students to work well together | 0 1 2 3 4 5 6 7 8 9 10 |
| Cannot do at all | Moderately can do | Highly certain can do |

| Overcome the influence of adverse community conditions on students’ learning | 0 1 2 3 4 5 6 7 8 9 10 |
| Cannot do at all | Moderately can do | Highly certain can do |
Get children to do their homework
0 1 2 3 4 5 6 7 8 9 10
Cannot do at all Moderately can do Highly certain can do

**Disciplinary Self-Efficacy**
Get children to follow classroom rules
0 1 2 3 4 5 6 7 8 9 10
Cannot do at all Moderately can do Highly certain can do

Control disruptive behavior in the classroom
0 1 2 3 4 5 6 7 8 9 10
Cannot do at all Moderately can do Highly certain can do

Prevent problem behavior on the school grounds
0 1 2 3 4 5 6 7 8 9 10
Cannot do at all Moderately can do Highly certain can do

**Efficacy to Enlist Parental Involvement**
Get parents to become involved in school activities
0 1 2 3 4 5 6 7 8 9 10
Cannot do at all Moderately can do Highly certain can do

Assist parents in helping their children do well in school
0 1 2 3 4 5 6 7 8 9 10
Cannot do at all Moderately can do Highly certain can do

Make parents feel comfortable coming to school
0 1 2 3 4 5 6 7 8 9 10
Cannot do at all Moderately can do Highly certain can do

**Efficacy to Enlist Community Involvement**
Get community groups involved in working with the school
0 1 2 3 4 5 6 7 8 9 10
Cannot do at all Moderately can do Highly certain can do

Get businesses involved in working with the school
0 1 2 3 4 5 6 7 8 9 10
Cannot do at all Moderately can do Highly certain can do
Get local colleges and universities involved in working with the school

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**Efficacy to Create a Positive School Climate**

Make the school a safe place

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Make students enjoy coming to school

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Get students to trust teachers

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Help other teachers with their teaching skills

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Increase collaboration between teachers and the administration to make the school run effectively

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Reduce school dropout

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Reduce school absenteeism

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Get students to believe they can do well in schoolwork

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Meeting Legal Requirements
Provide differentiated instruction when required by an IEP or SS504 Plan

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Complete all required paperwork surrounding a child’s IEP or 504 Plan

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Use technology and tools required by the school to track student progress

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Implement Tier 2 or Tier 3 interventions for children in a Response to Intervention model

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Assess Tier 2 or Tier 3 progress in a Response to Intervention model

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Now that you have answered questions about how effective you feel you are as a teacher in a variety of ways, we would like you to reflect on the roles and responsibilities of co-teachers again and indicate what tasks someone in your role should do as either the general education or special education teacher.

Think of a co-teaching situation (one general education teacher and one special education teacher) that you are currently in (or were recently in). Below is a list of roles co-teachers often play in the classroom. Please indicate how much time you THINK BEST PRACTICE IS for someone in your role as either the general education teacher or the special education teacher in a co-taught classroom using the 5-point scale, with 0 being Never, and 4 being Almost Always.

When in a co-teaching situation, I think best practice for someone in my position is ____________.

Behavior Management
When in a co-teaching situation, I think best practice for me would be ____________.
1. Sharing responsibility with my co-teacher in behavior management and implement discipline together.

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2. Enforcing the rules of the classroom.

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3. Addressing the behavior of the whole class.

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4. Implementing positive behavioral supports that teach appropriate social skills.

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5. Addressing the behavior of individual students.

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**Instruction**

When in a co-teaching situation, I currently do the following.

1. Participating in team teaching.

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2. Providing instruction to the whole class.

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3. Applying effective collaboration techniques in providing instruction to the class.

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4. Attending to all students.

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5. Providing instruction to individuals or small groups.

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**Planning**

When in a co-teaching situation, I think best practice for my role would be _________________.

1. Collaborating with my co-teacher to design and implement instruction.

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2. Having a regular planning time to meet with my co-teacher.

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3. Planning for individual student needs.

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4. Planning with my co-teacher to define roles and responsibilities for each co-teacher.

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5. Assigning roles and responsibilities for my co-teacher and me.

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**Differentiation/Instructional Differences**

When in a co-teaching situation, I think best practice for my role would be ________________.

1. Implementing learning strategies for students.

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2. Working one-on-one, in small group, or in a large group with student on IEP objectives.

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3. Making modifications for any students who are struggling with the material (whether or not the student has an identified disability).

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5. Developing collaborative lessons to ensure that individuals with special needs have access to and participate in the general education instruction.

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APPENDIX C

DESCRIPTION OF RESEARCH AND DIGITAL CONSENT
The purpose of this study is to examine the roles, responsibilities, and self-efficacy of general and special education co-teachers. You are being asked to participate in the study because you meet the following criteria: you are or have in the past been a general education or special education teacher in a co-teaching situation.

If you volunteer to participate in this study, you will be asked to do the following: complete a questionnaire on co-teacher roles and co-teacher self-efficacy.

This study includes only minimal risks. The study will take 20 minutes of your time. You will not be compensated for your time.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll free at 877-895-2794, or via email at IRB@unlv.edu.

Your participation in this study is voluntary. You may withdraw at any time. You are encouraged to ask questions about this study at the beginning or any time during the research study.

**Participant Consent:**
I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.
APPENDIX D

THE RELATIONSHIP BETWEEN GENERAL EDUCATOR CO-INSTRUCTION AND SELF-EFFICACY
Figure 5. Scatterplot of the Outliers in the Regression Between the Residuals and Predicted Values for the Co-instruction of General Education Teachers.

Figure 5. This chart shows the residuals and the predicted values of the regression model for the co-instruction of general education teachers. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 6. Frequency of the Residuals of the Regression Model for Co-instruction of General Education Teachers.

![Histogram of Residuals](image)

Mean = -5.65E-16
Std. Dev = 0.397
N = 156

Figure 6. Distribution of standardized residuals for the co-instruction of general education teachers showed most residuals were close to -0.5.
Figure 7. Scatterplot of the Regression of the Co-Instruction of General Education Teachers of the Observed and Predicted Residuals.

Figure 7. This scatterplot shows the strong positive correlation of the regression residuals of the co-instruction of general education teachers.
Figure 8. Scatterplot of the Standardized Residuals of the Predicted Values of the Regression of Co-Instruction of General Education Teachers.

Figure 8. This chart shows the residuals and the predicted values of the regression model. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 9. Scatterplot of Standardized Residuals of the Regression of Co-instruction of General Education Teachers.

The scatterplot displays a weak positive relationship between co-instruction of general educators and the standard residuals of the regression.
Figure 10. Chart of Predicted Values and the Unstandardized Residuals of the Regression for Co-instruction of General Education Teachers.

Figure 10. Unstandardized predicted values were separated into five equal groups to observe the variance between the highest and the lowest value. The distance between the lowest and highest group explained the data point distances from the line of best fit.
Figure 11. The Lowess Line of the Regression of Co-Instruction of General Education Teachers.

Figure 11. The lowess line was used to determine linearity. The deviation from linearity had a significance value of .673, which is more than .05. This shows a linear relationship between the unstandardized residual from self-efficacy and predicted values of co-instruction.
Figure 12. Scatterplot of the Regression Equation of the Co-instruction of General Education Teachers.

Figure 12. The regression equation of co-instruction and self-efficacy, where 12.461 represents the y-intercept and .024 represents the slope. This can be used to predict general teachers’ roles and responsibilities for self-efficacy values outside the data.
APPENDIX E

THE RELATIONSHIP BETWEEN GENERAL EDUCATOR CO-PLANNING
AND SELF-EFFICACY
Figure 13. Scatterplot of the Outliers in the Regression Between the Residuals and Predicted Values for the Co-planning of General Education Teachers.

This chart shows the residuals and the predicted values of the regression model for the co-planning of general education teachers. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 14. Frequency of the Residuals of the Regression Model for Co-planning of General Education Teachers.

Figure 14. Distribution of standardized residuals for the co-planning of general education teachers showed most residuals were close to -0.5.
Figure 15. Scatterplot of the Regression of the Co-planning of General Education Teachers of the Observed and Predicted Residuals.

Figure 15. This scatterplot shows the strong positive correlation of the regression residuals.
Figure 16. Scatterplot of the Standardized Residuals of the Predicted Values of the Regression of Co-planning of General Education Teachers.

This chart shows the residuals and the predicted values of the regression model. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 17. Scatterplot of Standardized Residuals of the Regression of Co-Planning of General Education Teachers.

Figure 17. The scatterplot displays a weak positive relationship between co-planning of general educators and the standard residuals of the regression.
Figure 18. Chart of Predicted Values and the Unstandardized Residuals of the Regression for Co-planning of General Education Teachers.

Figure 19. Unstandardized predicted values were separated into five equal groups to observe the variance between the highest and the lowest value. The distance between the lowest and highest group explained the data point distances from the line of best fit.
Figure 19. The lowess line was used to determine linearity. This shows a linear relationship between the unstandardized residual from self-efficacy and predicted values of co-planning.
Figure 20. Scatterplot of the Regression Equation of the Co-planning of General Education Teachers.

Figure 20. The regression equation of co-instruction and self-efficacy, where 5.28 represents the y-intercept and .05 represents the slope. This can be used to predict general teachers’ roles and responsibilities for self-efficacy values outside the data.
APPENDIX F

THE RELATIONSHIP BETWEEN GENERAL EDUCATOR CO-BEHAVIOR MANAGEMENT AND SELF-EFFICACY
Figure 21. Scatterplot of the Outliers in the Regression Between the Residuals and Predicted Values for the Co-behavior Management of General Education Teachers.

**Figure 21.** This chart shows the residuals and the predicted values of the regression model for the co-behavior management of general education teachers. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 22. Frequency of the Residuals of the Regression Model for Co-behavior Management of General Education Teachers.

Figure 22. Distribution of standardized residuals for the co-behavior management of general education teachers showed most residuals were close to .5.
Figure 23. Scatterplot of the Regression of the Co-behavior Management of General Education Teachers of the Observed and Predicted Residuals.

Figure 23. This scatterplot shows the strong positive correlation of the regression residuals of the co-instruction of general education teachers.
Figure 24. Scatterplot of Standardized Residuals of the Regression of Co-behavior Management of General Education Teachers.

Figure 25. This chart shows the residuals and the predicted values of the regression model. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 25. Scatterplot of Standardized Residuals of the Regression of Co-Behavior management of General Education Teachers.

The scatterplot displays a weak positive relationship between co-behavior management of general educators and the standard residuals of the regression.
Figure 26. Chart of Predicted Values and the Unstandardized Residuals of the Regression for Co-behavior Management of General Education Teachers.

Unstandardized predicted values were separated into five equal groups to observe the variance between the highest and the lowest value. The distance between the lowest and highest group explained the data point distances from the line of best fit.
Figure 27. The Lowess Line of the Regression of Co-behavior Management of General Education Teachers.

Figure 27. The lowess line was used to determine linearity. This shows a linear relationship between the unstandardized residual from self-efficacy and predicted values of co-behavior management.
Figure 28. The regression equation of co-instruction and self-efficacy, where 16.2 represents the y-intercept and .02 represents the slope. This can be used to predict general teachers’ roles and responsibilities for self-efficacy values outside the data.
APPENDIX G

THE RELATIONSHIP BETWEEN GENERAL EDUCATOR
CO-DIFFERENTIATION AND SELF-EFFICACY
Figure 29. Scatterplot of the Outliers in the Regression Between the Residuals and Predicted Values for the Co-differentiation of General Education Teachers.

*Figure 29.* This chart shows the residuals and the predicted values of the regression model for the co-differentiation of general education teachers. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 30. Frequency of the Residuals of the Regression Model for Co-differentiation of General Education Teachers.

Figure 30. Distribution of standardized residuals for the co-instruction of general education teachers showed most residuals were close to .25.
Figure 31. Scatterplot of the Regression of the Co-differentiation of General Education Teachers of the Observed and Predicted Residuals.

Figure 31. This scatterplot shows the strong positive correlation of the regression residuals of the co-differentiation of general education teachers.
Figure 32. Scatterplot of Standardized Residuals of the Regression of Co-differentiation of General Education Teachers.

Figure 32. This chart shows the residuals and the predicted values of the regression model. This measure is important because a regression model compares predicted values with actual values in its estimation.
Figure 33. Scatterplot of Standardized Residuals of the Regression of Co-differentiation of General Education Teachers.

The scatterplot displays a weak positive relationship between co-differentiation of general educators and the standard residuals of the regression.
Figure 34. Chart of Predicted Values and the Unstandardized Residuals of the Regression for Co-differentiation of General Education Teachers.

Unstandardized predicted values were separated into five equal groups to observe the variance between the highest and the lowest value. The distance between the lowest and highest group explained the data point distances from the line of best fit.
Figure 35. The Lowess Line of the Regression of Co-differentiation of General Education Teachers.

Figure 35. The lowess line was used to determine linearity. This shows a linear relationship between the unstandardized residual from self-efficacy and predicted values of co-differentiation.
Figure 36. Scatterplot of the Regression Equation of the Co-differentiation of General Education Teachers.

Figure 36. The regression equation of co-instruction and self-efficacy, where 11.23 represents the y-intercept and .04 represents the slope. This can be used to predict general teachers’ roles and responsibilities for self-efficacy values outside the data.
APPENDIX H

THE RELATIONSHIP BETWEEN SPECIAL EDUCATOR
CO-INSTRUCTION AND SELF-EFFICACY
Figure 37. Scatterplot of the Outliers in the Regression Between the Residuals and Predicted Values for the Co-instruction of Special Education Teachers.

**Figure 37.** This chart shows the residuals and the predicted values of the regression model for the co-instruction of special education teachers. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 38. Frequency of the Residuals of the Regression Model for Co-instruction of Special Education Teachers.

Figure 38. Distribution of standardized residuals for the co-instruction of special education teachers showed most residuals were close to -0.5.
Figure 39. Scatterplot of the Regression of the Co-Instruction of Special Education Teachers of the Observed and Predicted Residuals.

Figure 39. This scatterplot shows the strong positive correlation of the regression residuals of the co-instruction of special education teachers.
Figure 40. Scatterplot of the Standardized Residuals of the Predicted Values of the Regression of Co-Instruction of Special Education Teachers.

Scatterplot
Dependent Variable: Instruction

Figure 40. This chart shows the residuals and the predicted values of the regression model. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 41. Scatterplot of Standardized Residuals of the Regression of Co-instruction of Special Education Teachers.

Figure 41. The scatterplot displays a weak positive relationship between co-instruction of special educators and the standard residuals of the regression.
Figure 42. Chart of Predicted Values and the Unstandardized Residuals of the Regression for Co-instruction of General Education Teachers.

Unstandardized predicted values were separated into five equal groups to observe the variance between the highest and the lowest value. The distance between the lowest and highest group explained the data point distances from the line of best fit.
Figure 43. The Lowess Line of the Regression of Co-Instruction of General Education Teachers.

*Figure 43.* The lowess line was used to determine linearity. The deviation from linearity had a significance value of .673, which is more than .05. This shows a linear relationship between the unstandardized residual from self-efficacy and predicted values of co-instruction.
Figure 44. Scatterplot of the Regression Equation of the Co-instruction of Special Education Teachers.

The regression equation of co-instruction and self-efficacy, where 12.27 represents the y-intercept and .02 represents the slope. This can be used to predict general teachers’ roles and responsibilities for self-efficacy values outside the data.
APPENDIX I

THE RELATIONSHIP BETWEEN SPECIAL EDUCATION
CO-PLANNING AND SELF-EFFICACY
Figure 45. Scatterplot of the Outliers in the Regression Between the Residuals and Predicted Values for the Co-planning of Special Education Teachers.

*Figure 45.* This chart shows the residuals and the predicted values of the regression model for the co-planning of special education teachers. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 46. Frequency of the Residuals of the Regression Model for Co-planning of Special Education Teachers.

Histogram
Dependent Variable: Planning

Mean = 1.15E-16
Std. Dev. = 0.997
N = 157

Figure 46. Distribution of standardized residuals for the co-planning of special education teachers showed most residuals were close to -0.5.
Figure 47. Scatterplot of the Regression of the Co-planning of Special Education Teachers of the Observed and Predicted Residuals.

*Normal P-P Plot of Regression Standardized Residual*

*Dependent Variable: Planning*

*Figure 47.* This scatterplot shows the strong positive correlation of the regression residuals of the co-instruction of special education teachers.
Figure 48. Scatterplot of the Standardized Residuals of the Predicted Values of the Regression of Co-planning of Special Education Teachers.

This chart shows the residuals and the predicted values of the regression model. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 49. Scatterplot of Standardized Residuals of the Regression of Co-Planning of Special Education Teachers.

Figure 49. The scatterplot displays a weak positive relationship between co-planning of special educators and the standard residuals of the regression.
Figure 50. Chart of Predicted Values and the Unstandardized Residuals of the Regression for Co-planning of Special Education Teachers.

Figure 50. Unstandardized predicted values were separated into five equal groups to observe the variance between the highest and the lowest value. The distance between the lowest and highest group explained the data point distances from the line of best fit.
Figure 51. The lowess line was used to determine linearity. This shows a linear relationship between the unstandardized residual from self-efficacy and predicted values of co-planning.
Figure 52. Scatterplot of the Regression Equation of the Co-planning of General Education Teachers.

Figure 52. The regression equation of co-instruction and self-efficacy, where 7.86 represents the y-intercept and .03 represents the slope. This can be used to predict general teachers’ roles and responsibilities for self-efficacy values outside the data.
APPENDIX J

THE RELATIONSHIP BETWEEN SPECIAL EDUCATOR CO-BEHAVIOR MANAGEMENT AND SELF-EFFICACY
Figure 53. Scatterplot of the Outliers in the Regression Between the Residuals and Predicted Values for the Co-behavior Management of Special Education Teachers.

Figure 53. This chart shows the residuals and the predicted values of the regression model for the co-behavior management of general education teachers. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 54. Frequency of the Residuals of the Regression Model for Co-behavior Management of Special Education Teachers.

Figure 54. Distribution of standardized residuals for the co-behavior management of special education teachers showed most residuals were close to .5.
Figure 55. Scatterplot of the Regression of the Co-behavior Management of Special Education Teachers of the Observed and Predicted Residuals.

This scatterplot shows the strong positive correlation of the regression residuals of the co-instruction of special education teachers.
Figure 56. Scatterplot of Standardized Residuals of the Regression of Co-behavior Management of Special Education Teachers.

This chart shows the residuals and the predicted values of the regression model. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 57. Scatterplot of Standardized Residuals of the Regression of Co-behavior Management of Special Education Teachers.

Figure 57. The scatterplot displays a weak positive relationship between co-behavior management of special educators and the standard residuals of the regression.
Figure 58. Chart of Predicted Values and the Unstandardized Residuals of the Regression for Co-behavior Management of Special Education Teachers.

Figure 58. Unstandardized predicted values were separated into five equal groups to observe the variance between the highest and the lowest value. The distance between the lowest and highest group explained the data point distances from the line of best fit.
Figure 59. The Lowess Line of the Regression of Co-behavior Management of Special Education Teachers.

Figure 59. The lowess line was used to determine linearity. This shows a linear relationship between the unstandardized residual from self-efficacy and predicted values of co-behavior management.
Figure 60. Scatterplot of the Regression Equation of the Co-behavior Management of Special Education Teachers.

Figure 60. The regression equation of co-instruction and self-efficacy, where 17.1 represents the y-intercept and .02 represents the slope. This can be used to predict special teachers’ roles and responsibilities for self-efficacy values outside the data.
APPENDIX K

THE RELATIONSHIP BETWEEN SPECIAL EDUCATION CO-DIFFERENTIATION AND SELF-EFFICACY
Figure 61. Scatterplot of the Outliers in the Regression Between the Residuals and Predicted Values for the Co-differentiation of Special Education Teachers.

This chart shows the residuals and the predicted values of the regression model for the co-differentiation of special education teachers. This measure is important because a regression model compares predicted values (predicted data points) with actual values (data points) in its estimation.
Figure 62. Distribution of standardized residuals for the co-instruction of special education teachers showed most residuals were close to zero.
Figure 63. Scatterplot of the Regression of the Co-differentiation of Special Education Teachers of the Observed and Predicted Residuals.

Figure 63. This scatterplot shows the strong positive correlation of the regression residuals of the co-differentiation of special education teachers.
Figure 64. Scatterplot of Standardized Residuals of the Regression of Co-differentiation of Special Education Teachers.

This chart shows the residuals and the predicted values of the regression model. This measure is important because a regression model compares predicted values with actual values in its estimation.
Figure 65. Scatterplot of Standardized Residuals of the Regression of Co-differentiation of Special Education Teachers.

The scatterplot displays a weak positive relationship between co-differentiation of special educators and the standard residuals of the regression.
Figure 66. Chart of Predicted Values and the Unstandardized Residuals of the Regression for Co-differentiation of Special Education Teachers.

Figure 66. Unstandardized predicted values were separated into five equal groups to observe the variance between the highest and the lowest value. The distance between the lowest and highest group explained the data point distances from the line of best fit.
Figure 67. The Lowess Line of the Regression of Co-differentiation of Special Education Teachers.

Figure 67. The lowess line was used to determine linearity. This shows a linear relationship between the unstandardized residual from self-efficacy and predicted values of co-differentiation.
Figure 68. Scatterplot of the Regression Equation of the Co-differentiation of Special Education Teachers.

Figure 68. The regression equation of co-instruction and self-efficacy, where 12.9 represents the y-intercept and .03 represents the slope. This can be used to predict special teachers’ roles and responsibilities for self-efficacy values outside the data.
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2015 – present Special Education Teacher in Mathematics,
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2012 – 2015 Co-Teacher in English Language Arts,
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2008 – 2012 Co-Teacher in Mathematics,
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2007 – 2008 Announcer,
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2003 – 2006 Assistant to the Director of Children’s Services,
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PUBLICATIONS

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Undergraduate Courses Taught
Fall 2012    EDSP 423    Collaborative Consultation in Special Education

PRESENTATIONS


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Guest Reviewer for Intervention in School and Clinic (2014).

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2010 - present  Council for Exceptional Children
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